VOLUME I: DRAFT

ENVIRONMENTAL IMPACT REPORT

SCH NO. 2015051054

GENERAL PLAN LAND USE AND URBAN DESIGN ELEMENTS PROJECT
CITY OF LONG BEACH

Submitted to:

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

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

This Draft EIR has been prepared by the City of Long Beach (City) to analyze the potential environmental impacts of the proposed Long Beach General Plan Land Use and Urban Design Elements (LUE/UDE) project (proposed project); to discuss alternatives; and to propose mitigation measures for identified potentially significant impacts that will minimize, offset, or otherwise reduce or avoid those environmental impacts. Data for this Draft EIR was obtained from on-site field observations; discussion with affected agencies; review of adopted plans and policies; review of available studies and reports; and specialized environmental assessments prepared for the proposed project (e.g., air quality/greenhouse gases [GHG], noise, and traffic).

1.2 SUMMARY OF PROJECT DESCRIPTION

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

The proposed project is an update to the City's existing General Plan and is intended to guide growth and future development through the year 2040. The proposed project includes the approval of both the General Plan LUE and UDE, which would replace the existing LUE and the Scenic Routes Element (SRE). The following discussion summarizes the key components of each of the proposed General Plan Elements.

1.2.1 Land Use Element

The proposed updated LUE would introduce the concept of "PlaceTypes," which would replace the current approach in the existing LUE of segregating property within the City through traditional land uses designations and zoning classifications. The updated LUE would establish 14 primary PlaceTypes that would divide the City into distinct neighborhoods, thus allowing for greater flexibility and a mix of compatible land uses within these areas. Each PlaceType would be defined by unique land use, form, and

character-defining goals, policies, and implementation strategies tailored specifically to the particular application of that PlaceType within the City. The proposed 14 PlaceTypes are listed below.

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

In total, the LUE proposes changes to approximately 13 percent of the land area (or the equivalent of 4,180 acres) in the City. The establishment of PlaceTypes in place of standard parcel-by-parcel land use designations would allow for greater flexibility in development types to create distinct residential neighborhoods, employment centers, and open space areas.

1.2.2 Urban Design Element

The UDE would be an entirely new element of the City's General Plan and would replace the existing SRE upon approval by the City Council. The decision to include an UDE in the City's General Plan grew from the City's stated need to provide an urban framework that addresses the varying aesthetic characteristics associated with the historic districts, traditional neighborhoods, auto-oriented commercial centers, urbanized centers, and corridors located throughout the City.

The UDE would define the physical aspects of the urban environment. Specifically, the UDE aims to further enhance the City's PlaceTypes established in the LUE by creating great places; improving the urban fabric, and public spaces; and defining edges, thoroughfares, and corridors.

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

1.3 SIGNIFICANT UNAVOIDABLE IMPACTS

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

1.3.1 Air Quality

The proposed project would have significant unavoidable impacts related to the violation of applicable air quality standards and the exposure of sensitive receptors to substantial pollutant concentrations. Operational activities associated with future development occurring under the proposed project would be significant and unavoidable because the scale of such activities has not been determined or estimated. Mitigation Measure AQ-2 requires the preparation of project-specific technical assessments evaluating operational-related air quality impacts to ensure that operational-related emissions are reduced to the maximum extent feasible. However, in an abundance of caution, the potential emissions impact associated with the operation of the proposed project would remain significant and unavoidable even with implementation of Mitigation Measure AQ-2.

In addition to significant unavoidable impacts associated with operational activities, a significant and unavoidable impact has also been identified related to the exposure of sensitive receptors to substantial pollutant concentrations because the proposed project would allow for the development of future industrial and commercial uses, which are expected to release toxic air contaminants (TACs) during operational activities. Since it is not possible to determine the amount of TAC concentrations at the time of this analysis, it is not possible to calculate the risks for a particular health effect within the proposed Areas of Change. Future development projects would be subject to environmental review under CEQA and would be required to analyze potential TAC emissions and include mitigation as appropriate.

The proposed project would also permit residential land uses along Interstate 710 (I-710) and in areas near or adjacent to commercial and industrial uses and existing permitted TAC sources. Thus, new residential and other sensitive developments could be sited within the buffer distances to TAC sources. This is a potentially significant impact, and mitigation measures would be required. Mitigation Measures AQ-2 and AQ-3, which require project-specific technical assessments evaluating operational-related air quality impacts and the preparation of project-specific health risk assessments would be required to reduce air quality impacts to sensitive receptors. Despite implementation of Mitigation Measures AQ-2 and AQ-3, and in an abundance of caution, potential impacts associated with the operation of the proposed project, including the potential health risks to sensitive receptors, would remain significant and unavoidable.

1.3.2 Global Climate Change

The proposed project would have significant unavoidable impacts related to the generation of GHG emissions that could significantly impact the environment. Implementation of the proposed LUE/UDE would contribute to Global Climate Change (GCC) through direct and indirect emissions of GHGs from

land uses within the City of Long Beach. On a per capita basis, build out of the proposed LUE/UDE would reduce the GHG emissions from 9.5 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year per service population (MT of CO_2e/yr/SP) under existing conditions down to 5.9 MT of CO_2e/yr/SP (with reduction measures incorporated). However, the LUE/UDE GHG emissions in the City for build-out year 2040 (5.9 MT of CO_2e/yr/SP) would still exceed the interim efficiency threshold of 3.4 MT of CO_2e/yr/SP. As such, Mitigation Measures GHG-1 through GHG-4 would be required to reduce GHG emissions. These measures require the preparation of a GHG Reduction Plan or Climate Action Plan, the preparation of a vehicle miles traveled (VMT) reduction plan, and adoption of mechanisms to ensure that specific GHG reduction features are incorporated into the design of future development projects to meet or exceed the statewide goals aimed at the reduction of GHG emissions. In addition to the proposed mitigation measures, additional statewide measures would be necessary to reduce GHG emissions from development that may occur with adoption of the proposed project to meet the long-term GHG reduction goals under Executive Orders (EO) S-3-05 and EO B-30-15. Although the implementation of the proposed project would result in lower GHG emissions within the City as compared to existing conditions and because no additional statewide measures are currently available that can be implemented, GHG emission impacts for the project under the build-out scenario would remain significant and unavoidable.

1.3.3 Transportation/Traffic

The proposed project would have significant unavoidable impacts related to conflicts with applicable plans, ordinances, and policies, as well as conflicts with an applicable Congestion Management Plan (CMP). The *Traffic Impact Analysis* prepared for the proposed project determined that 44 intersections could be significantly impacted by implementation of future development projects within the Major Areas of Change in the 2040 Build Out scenario based on the City's criteria. As compared to the conclusions in the Mobility Element traffic study, an additional 12 intersections are now forecast to operate at Levels of Service (LOS) E or F under the proposed project. Potential mitigation in the form of vehicle capacity enhancements for each impacted intersection was reviewed for feasibility. In addition, the City's Capital Improvement Program, Mobility Element, and/or applicable specific plans were also reviewed for pending and planned vehicle and non-vehicle capacity improvements throughout the City. While these improvements could contribute to a reduced vehicle LOS, the effectiveness of these improvements cannot be quantified and, therefore, cannot be considered mitigation for the 44 impacted study area intersections for the purposes of CEQA. Therefore, because vehicle capacity enhancements to the impacted intersections are not feasible, and because no additional mitigation to reduce traffic is available and enforceable, impacts to the 44 intersections are considered significant and unavoidable for the build-out year of 2040.

In addition to identifying significant and unavoidable impacts at the 44 impacted intersections based on the City's criteria, the *Traffic Impact Analysis* also identified significant impacts at 5 of the 10 monitored intersections within the study area based on Los Angeles County's 2010 CMP criteria. Based on the results and because there is no feasible mitigation to reduce impacts at the impacted intersections, the significant impacts to these intersections are considered significant and unavoidable for the build-out year of 2040.

1.4 ALTERNATIVES

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

- **Alternative 1: No Project.** This alternative would involve no amendments to the City's General Plan, no adoption of PlaceTypes, and no changes to the existing land use designations in the City. The existing General Plan Land Use Element (LUE) and the Scenic Routes Element (SRE) would continue to determine land uses and design principles that guide future development in the City.
- **Alternative 2: Areas of Change Reduction/Reduced Project Alternative**. This alternative would include the same PlaceTypes as the proposed project, but would reduce the intensity of land uses in three areas: Mid-City, Downtown, and Traffic Circle. Reductions in land use intensity in these areas would be accomplished through caps on building heights in the Downtown area, reducing the amount of in-fill and regional serving uses in the Mid-City area, and reducing or eliminating new commercial and in-fill development in the Traffic Circle area.
- **Alternative 3: Reduced VMT Alternative/Transit-Oriented Alternative.** The Reduced Vehicle Miles Travelled (VMT) Alternative would implement only the Transit-Oriented Development PlaceType/Overlay Zone. This alternative would recognize the objectives of Senate Bill 743 by reducing VMT per capita in order to improve the efficiency of the transportation network. This alternative would be an amendment to the City's existing LUE and would be implemented as an Overlay Zone intended to focus on development around existing and/or proposed transit to reduce the frequency and length of trips. Alternative 3 would not include a new Urban Design Element (UDE), but would amend the SRE to include design guidelines within the Transit-Oriented Overlay Zone.
- **Alternative 4: Neighborhood-Serving Centers and Corridors Commercial-Only Alternative.** The Neighborhood-Serving Centers and Corridors Commercial-Only Alternative would include the same PlaceTypes as the proposed project, but would eliminate the residential component from the Neighborhood-Serving Centers and Corridors PlaceType. The overall 2040 build-out square footage would remain consistent with the proposed project.

In evaluating an appropriate range of alternatives to the proposed project, a number of alternatives were considered and rejected by the Lead Agency. These included consideration of the following options: (1) Reducing Southeast Area Development and Improvement Plan (SEADIP), and (2) Alternative Sites Considered.

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

The No Project Alternative would be environmentally superior to the proposed project on the basis of the reduced impacts that would occur with this alternative. The No Project Alternative would have the least impact on the environment because it would not update the General Plan to facilitate new PlaceTypes and urban design guidelines and policies for 2040 build out. While the No Project Alternative would lessen or avoid impacts of the proposed project, the beneficial impacts of the proposed project— including the provision of a mix of land uses and policies for better placemaking not currently provided in the City's General Plan —would not occur, and none of the project objectives would be met.

The *CEQA Guidelines* require that if the environmentally superior alternative is the No Project Alternative, "the EIR also identify an environmentally superior alternative among the other alternatives" (*CEQA Guidelines* Section 15126. 6(e)(2)). Alternative 2, Areas of Change Reduction/ Reduced Project Alternative, would lessen most of the significant environmental impacts or result in impacts similar to those associated with the proposed project. With the exception of the No Project Alternative, the Environmentally Superior Alternative would be Alternative 3: Reduced VMT Alternative/Transit-Oriented Alternative. This alternative would lessen significant environmental impacts or result in impacts similar to those associated with the proposed project. Alternative 3 would achieve some of the project objectives—specifically it would directly encourage development near existing and/or proposed transit with the direct intent to create compact development patterns and walkable neighborhoods, consistent with Objectives 3, 14, 16, and 17. However, this alternative would not increase livability, economic vitality, or health throughout the planning area as it would be concentrated along Downtown transit corridors. Alternative 3 would not include the PlaceTypes that include many of the features of the proposed project, and therefore, this alternative's consistency with the overall LUE goals (Objective 2), job growth (Objective 4), and land use changes that coincide with the regional economy (Objective 5) would not be achieved to the same degree as the proposed project. In addition, the reduction in air quality, GHGs, noise, and traffic impacts would be minimal in comparison to the economic value of providing housing and employment opportunities throughout the City.

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

1.5 AREAS OF CONTROVERSY

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

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

1.6 SUMMARY OF IMPACTS AND MITIGATION MEASURES

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

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

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
4.1: AESTHETICS		
Threshold 4.1.1: Have a substantial adverse effect on a scenic vista. **Less than Significant Impact.** There are no City of Long Beach (City) designated scenic viewpoints or scenic corridors in the City. However, the City's existing Open Space Element requires protection of scenic features in the City, including beaches, bluffs, wetlands, and water bodies. Due to the prominence of existing urban and industrial developments adjacent to the Pacific Ocean and the Port of Long Beach, views of these resources would not be significantly altered by development envisioned under the proposed project. Further, future development facilitated by project approval would be designed according to the development strategies, policies, and standards in the proposed Urban Design Element (UDE). The proposed UDE includes development strategies and policies that consider the context of existing scenic vistas and neighborhoods when designing and implementing projects.	No mitigation is required.	Less than Significant.
Threshold 4.1.3: Substantially degrade the existing visual character or quality of the site and its surroundings. **Less than Significant Impact.** There are no City-designated scenic viewpoints in the planning area, nor are there designated scenic resources for which the City requires view protection. All future proposed projects within the City will require submittal and approval of detailed plans and project-specific environmental review. Further, the proposed project would incorporate goals, policies, strategies, and recommendations intended to avoid, reduce, offset, or otherwise minimize potential adverse impacts to the overall visual character associated with new development followed by project approval.	No mitigation is required.	Less than Significant.
Threshold 4.1.4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. **Less than Significant Impact.** While the proposed project itself would not result in direct sources of light or glare, future development facilitated by the proposed project would introduce new sources of light to the City that are typical of development projects. All building and landscape lighting	No mitigation is required.	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
would be consistent with the design standards established in the proposed UDE and the City's Municipal Code. On-site landscaping proposed as part of new development projects would reduce glare and would serve to screen light sources to reduce the visual impact of lighting from buildings and parking lots. Although future development would introduce new sources of light that would contribute to the light visible in the night sky and surrounding area, the planning area is located within a highly urbanized area that is currently characterized by significant nighttime lighting. The proposed project envisions future development of buildings and structures with a variety of materials, which may include reflective materials. Each future development project would be subject to project-level California Environmental Quality Act (CEQA) review at the time such project is under consideration by the City. The City would review site plans and architectural renderings for the presence of reflective materials, assess potential impacts related to light and glare, and propose mitigation, if necessary.		
Cumulative Aesthetic Impacts. **Less than Significant Impact.** The cumulative study area for visual resources for the proposed project is the City's viewshed. The viewshed from the planning area includes vantage points with views of the Pacific Ocean, the Port of Long Beach, the Long Beach marinas, the San Gabriel Mountains, and the Santa Ana Mountains. Future development facilitated by the proposed project would change the visual character of the planning area, specifically within the Major Areas of Change, as compared to existing conditions. The site design, landscaping, and architectural design of future projects would be required to be consistent with goals, policies, strategies, and development standards established by the proposed UDE, which are intended to avoid, reduce, offset, or otherwise minimize identified potential adverse impacts of the proposed project or provide significant benefits to the community and/or to the physical environment.	No mitigation is required.	Less than Significant.

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The proposed project would introduce new sources of light and glare on the planning area as a result of future development projects facilitated by project approval. Uses permitted under the proposed PlaceTypes would introduce more lighting due to the higher building densities as allowed by the proposed project. However, because the City is currently characterized as an urban environment with existing high levels of light pollution, light emitted by future development projects would not result in a cumulatively significant visual impact related to light and glare.		
4.2: AIR QUALITY		
Threshold 4.2.1: Conflict with or obstruct implementation of the applicable air quality plan. **Less than Significant Impact.** Because the proposed project involves long-term growth, emissions of criteria pollutants associated with future development would occur. Future development would be required to comply with applicable efficiency standards and the proposed Land Use Element (LUE)/Urban Design Element (UDE) goals and policies. Consequently, emissions generated by development projects in addition to existing sources within the City of Long Beach (City) are not considered to cumulatively contribute to the nonattainment designations of the South Coast Air Basin (refer to the discussion under Threshold 4.2.3, below). Implementation of the proposed project would not contribute to an increase in frequency or severity of air quality violations and delay attainment of the ambient air quality standards (AAQS) or interim emission reductions in the Air Quality Management Plan (AQMP), and emissions generated from the proposed project would not result in a significant cumulative air quality impact as demonstrated below in the discussion. The proposed project would result in a higher population and generate more employment for the City compared to Southern California Association of Governments (SCAG) forecasts. The 2012 AQMP does not consider emissions associated with the proposed project. However, once the proposed project is adopted and the AQMP is revised, SCAG and the South Coast Air Quality Management District (SCAQMD) will incorporate the	No mitigation is required.	Less than Significant.

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growth projections associated with build out of the project in their regional planning projections, and the proposed project would become consistent with the AQMP. Based on the requirements for consistency with emission control strategies in the AQMP, the LUE/UDE would not conflict with or obstruct the implementation of the AQMP and/or applicable portions of the State Implementation Plan (SIP). Implementation of the proposed project would result in a less than significant impact associated with conflicts with applicable air quality plans. No mitigation is required.		
Threshold 4.2.2: Violate any air quality standard or contribute to an existing or projected air quality violation. **Construction Emissions. Less than Significant Impact with Mitigation Incorporated.** Construction activities associated with the proposed project would occur over the build-out horizon of the project, which would cause short-term emissions of criteria air pollutants. For this broad-based analysis, it is not possible to determine whether the scale and phasing of future *individual* projects would exceed the SCAQMD's short-term regional or localized construction emissions thresholds. However, localized construction impacts of future LUE/UDE projects could potentially exceed Localized Significance Thresholds (LSTs), particularly for construction of planning areas larger than 5 acres or planning areas with more intense construction activities. To address this, regulatory measures (e.g., SCAQMD Rule 201 for a permit to operate, Rule 403 for fugitive dust control, Rule 1113 for architectural coatings, Rule 1403 for new source review, and the California Air Resources Board [ARB] Airborne Toxic Control Measures) are currently in place, and mitigation imposed at the project level may include extension of construction schedules and/or use of special equipment. Because the scale of construction activities has not been determined or estimated and in order to present conservative assumptions, the air quality impacts associated with future construction of individual projects that may occur with implementation of the proposed project are assumed to be potentially significant. While existing City policies and regulations and proposed LUE/UDE goals	**Standard Condition:** **SC AQ-1:** To ensure compliance with South Coast Air Quality Management District (SCAQMD) rules and provide Best Management Practices (BMPs) to reduce air pollutant emissions during construction of future projects facilitated under the proposed project, the construction contractor shall implement the following BMPs during construction, where feasible, to further reduce emissions from these sources. • Install temporary construction power supply meters on site and use this to provide power to electric power tools whenever feasible. If temporary electric power is available on site, forbid the use of portable gasoline- or diesel-fueled electric generators. • Use of diesel oxidation catalysts and/or catalyzed diesel particulate traps on diesel equipment, as feasible. • Maintain equipment according to manufacturers' specifications. • Restrict idling of equipment and trucks to a maximum of 5 minutes (per California Air Resources Board [ARB] regulation). • Phase grading operations to reduce disturbed areas and times of exposure.	Less than Significant (Construction Emissions). Significant and Unavoidable (Operation Emissions).

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and policies are intended to minimize impacts associated with nonattainment criteria pollutants, best management practice (BMP) measures are included as Standard Conditions imposed by the City (including Standard Condition AQ-1), and are identified to ensure that the intended environmental protections are achieved. Additionally, Mitigation Measure AQ-1 is identified requiring the preparation of project-specific technical assessments evaluating construction-related air quality impacts to further ensure that construction-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under the California Environmental Quality Act (CEQA). With implementation of Standard Condition AQ-1 and Mitigation Measure AQ-1, the potential construction emissions impacts associated with future development facilitated by the proposed project would be less than significant. **Operation Emissions. Significant and Unavoidable Impact.** Because the scale of operational activities has not been determined or estimated, and in order to present conservative assumptions, air quality impacts associated with future operation of individual projects under the proposed project are assumed to be potentially significant. Mitigation Measure AQ-2 requires the preparation of project-specific technical assessments evaluating operational-related air quality impacts to further ensure that operational-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under CEQA. Unlike construction activities where the extension of construction schedules and/or use of special equipment can be reasonably assumed to be implemented, operational characteristics and the associated emissions cannot be determined at the time of this analysis. Therefore, despite implementation of Mitigation Measure AQ-2, and in an abundance of caution, the potential emissions impact associated with the operation of the proposed project would remain significant and unavoidable. **CO Hot-Spot Analysis**. **Less than Significant Impact.** A carbon monoxide (CO) hot-spot analysis was conducted at four busy intersections in Los Angeles County at the peak morning and afternoon periods and did not predict a violation of CO standards. One of the top four worst intersections (i.e., Long Beach Boulevard/Imperial Highway) is located	• Avoid excavation and grading during wet weather. • Limit on-site construction routes and stabilize construction entrance(s). • Remove existing vegetation only when absolutely necessary. • Sweep up spilled dry materials (e.g., cement, mortar, or dirt track-out) immediately. Never attempt to wash them away with water. Use only minimal water for dust control. • Store stockpiled materials and wastes under a temporary roof or secured plastic sheeting or tarp. • Properly dispose of all demolition wastes. Materials that can be recycled from demolition projects include: metal framing, wood, concrete, asphalt, and plate glass. Unusable, un-recyclable debris should be confined to dumpsters, covered at night, and taken to a landfill for disposal. • Hazardous debris such as asbestos must be handled in accordance with specific laws and regulations and disposed of as hazardous waste. For more information on asbestos handling and disposal regulations, contact the SCAQMD. **Mitigation Measures: AQ-1:** Prior to issuance of any construction permits, future development projects subject to discretionary review shall prepare and submit to the City of Long Beach (City) Department of Development Services Planning Bureau a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology for assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed	

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
approximately 4 miles north of the planning area. Since the SCAQMD-modeled intersections do not exceed the CO standards, all intersections within the project study area with a lesser volume of traffic and under less extreme conditions would not exceed the CO standards. Therefore, implementation of the proposed project would not be expected to result in CO hot spots, and impacts would be less than significant. No mitigation is required.	the SCAQMD-adopted thresholds of significance, the City Department of Development Services shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Department of Development Services. Mitigation measures to reduce construction-related emissions include, but are not limited to: • Require the following fugitive-dust control measures: o Use nontoxic soil stabilizers to reduce wind erosion. o Apply water every 4 hours to active soil-disturbing activities. o Tarp and/or maintain a minimum of 24 inches of freeboard on trucks hauling dirt, sand, soil, or other loose materials. • Use construction equipment rated by the United States Environmental Protection Agency (EPA) as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower. • Ensure that construction equipment is properly serviced and maintained to the manufacturers' standards. • Limit nonessential idling of construction equipment to no more than five consecutive minutes. • Using Super-Compliant volatile organic compound (VOC) paints for coating of architectural surfaces	

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	whenever possible. **MM AQ-2:** Prior to future discretionary project approval, development project applicants shall prepare and submit to the City of Long Beach Department of Development Services a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with SCAQMD methodology in assessing air quality impacts. If operation-related air pollutants are determined to have the potential to exceed the SCAQMD-adopted thresholds of significance, the Department of Development Services shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the Standard Conditions of Approval. Below are possible mitigation measures to reduce long-term emissions: • For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plugging in the anticipated number of refrigerated trailers to reduce idling time and emissions. • Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use. • Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with	

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	California Air Resources Board (ARB) Rule 2845 (13 California Code of Regulations [CCR] Chapter 10, Section 2485). • Site-specific development shall demonstrate that an adequate number of electrical vehicle Level 2 charging stations are provided on site. The location of the electrical outlets shall be specified on building plans, and proper installation shall be verified by the Department of Development Services prior to issuance of a Certificate of Occupancy.	
Threshold 4.2.3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). **Less than Significant Impact.** Emissions associated with the build out of the proposed project may exceed the daily SCAQMD thresholds for volatile organic compounds (VOCs), nitrogen oxides (NO_X), carbon monoxide (CO), particulate matter less than 10 microns in size (PM_{10}), and particulate matter less than 2.5 microns in size ($PM_{2.5}$), However, in a cumulative context, emissions would be lower because of the stringent United States Environmental Protection Agency (EPA) and State of California vehicle emissions standards aimed at reducing vehicle emissions that would be phased in over the life of the project. Implementation of the proposed LUE/UDE policies would also help reduce air pollutant emissions by promoting walking, bicycling, and use of public transit that would contribute to reduced vehicle miles traveled (VMT). Further, the City's Air Quality and Mobility Elements also encourage alternative fueling facilities and modes of transportation and Transportation Demand Management. Therefore, emissions of criteria pollutants associated with future development under the proposed project would not result in a cumulatively considerable significant impact associated with emissions of PM_{10}, $PM_{2.5}$,	No mitigation is required.	Less than Significant.

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and ozone (O_3) precursors (VOCs, NO_X, and CO) under the California ambient air quality standards (CAAQS). Future development would also be required to demonstrate compliance with the AQMP, the State Implementation Plan (SIP), ARB motor vehicle standards, SCAQMD regulations for stationary sources and architectural coatings, Title 24 energy efficiency standards, and the proposed LUE/UDE goals and policies. For these reasons, the cumulative air quality impacts associated with the proposed project would be less than significant. No mitigation is required.		
Threshold 4.2.4: Expose sensitive receptors to substantial pollutant concentrations. **Criteria Pollutants: Less than Significant Impact with Mitigation.** Refer to the analysis provided under Thresholds 4.2.2 and 4.2.3 above for a discussion of construction and operational impacts relating to criteria air pollutants. With implementation of Standard Condition AQ-1 and Mitigation Measure AQ-1, the potential emissions impact associated with the construction of the proposed project would be less than significant. Operation of new land uses consistent with the Land Use Plan of the proposed LUE/UDE would generate fewer criteria air pollutants in the City from area/stationary sources and mobile sources. Therefore, the cumulative air quality impact associated with the proposed project would be less than significant. **TAC Emissions: Significant and Unavoidable Impact.** Despite implementation of Mitigation Measure AQ-2, the potential emissions impacts associated with the operation of the proposed project would remain significant and unavoidable. Various industrial and commercial processes allowed under the proposed project would release toxic air contaminants (TACs). Emissions of TACs would be controlled through permitting issued by the SCAQMD and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under SCAQMD Rule 1401. Since it is	Refer to Standard Condition AQ-1 and Mitigation Measure AQ-1, above. **Mitigation Measure:** **AQ-3:** Prior to future discretionary approval for projects that require environmental evaluation under the California Environmental Quality Act (CEQA), the City of Long Beach would evaluate new development proposals for sensitive land uses (e.g., residences, schools, and daycare centers) within the City for potential incompatibilities with regard to the ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005). In addition, applicants for siting or expanding sensitive land uses that are within the recommended buffer distances listed in Table 1-1 of the CARB Handbook would submit a Health Risk Assessment (HRA) to the City of Long Beach. The HRA shall be prepared in accordance with the policies and procedures of the State Office of Environmental Health Hazard Assessment (OEHHA) and the South Coast Air Quality Management District (SCAQMD). The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children. If the HRA shows that the incremental cancer risk and/or non-cancer hazard index exceeds the respective thresholds, as established by	Criteria Pollutant: Less than Significant. TAC: Significant and Unavoidable Impact.

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not possible to determine the amount of TAC concentrations at the time of this analysis, it is not possible to calculate the risks for a particular health effect within the proposed Areas of Change. The proposed project is a programmatic project and until specific future projects are proposed, the associated TAC emissions cannot be determined or modeled at this time. Future development projects would be subject to environmental review under CEQA and would be required to analyze potential TAC emissions and include mitigation as appropriate. In addition to stationary/area sources of TACs, commercial and industrial operations could generate a substantial amount of diesel particulate matter emissions from off-road equipment use and truck idling. Land development projects are required to comply with Assembly Bill (AB) 2588, SCAQMD Rule 1401, and ARB standards for diesel engines. As stated above, until specific future projects are proposed, the associated emissions cannot be determined or modeled at this time. Future projects would be subject to environmental review under CEQA and would be required to analyze potential emissions and include mitigation as appropriate. If new sensitive receptors were sited within 500 feet (ft) of Interstate 710 or Interstate 405 (both of which emit TACs) or within the ARB's minimum siting recommendations of other stationary sources, they may be exposed to significant concentrations of air pollutants. Goals and policies are included in the proposed General Plan LUE/UDE that would reduce concentrations of criteria air pollutant emissions and air toxics generated by construction and operation of new developments on nearby residences. Review of projects by SCAQMD for permitted sources of air toxics would ensure that health risks are minimized. It is important to note that the Neo-Industrial PlaceType would be used as a buffer between existing industrial and residential neighborhoods. No heavy industrial, warehousing, and distribution facilities are permitted in this land use category, and as such, industrial uses within this PlaceType would likely be below-average truck trip generators. Thus, no future projects	the SCAQMD at the time a project is considered, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below the aforementioned thresholds as established by the SCAQMD), including appropriate enforcement mechanisms. Measures to reduce risk may include, but are not limited to, the following: • Air intakes oriented away from high-volume roadways and/or truck loading zones; and. • Heating, ventilation, and air conditioning systems of the buildings provided with appropriately sized maximum efficiency rating value filters. Prior to future discretionary project approval, applicants for new industrial or warehousing land uses that (1) have the potential to generate 100 or more diesel truck trips per day or have 40 or more trucks with operating diesel-powered transport refrigeration units, and (2) are within 1,000 feet of a sensitive land use (e.g., residential, schools, hospitals, or nursing homes), as measured from the property line of the project to the property line of the nearest sensitive use, shall submit an HRA to the Department of Development Services. The HRA shall be prepared in accordance with policies and procedures of the State OEHHA and the SCAQMD. If the HRA shows that the incremental cancer risk and/or non-cancer hazard index exceeds the respective thresholds, as established by the SCAQMD at the time a project is considered, the applicant will be required to identify and demonstrate whether best available control technologies for toxics (T-BACTs), including appropriate enforcement mechanisms, are capable of reducing potential cancer and non-cancer	

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would generate the level of truck trips expected for heavy industrial and/or warehouses. However, since it is not possible to determine the amount of TAC concentrations at the time of this analysis, it is not possible to calculate the risks for a particular health effect within the proposed Areas of Change. The amount of emissions from a project does not necessarily correspond to the concentrations of air pollutants. Because the scale of operational activities has not been determined or estimated and in order to present conservative assumptions, the TAC health risk impacts associated with future operation of individual projects that may occur with implementation of the proposed project are assumed to be potentially significant. Mitigation Measure AQ-3 has been identified to ensure that mobile sources of TACs not covered under SCAQMD permits are considered during subsequent project-level environmental review. Mitigation Measure AQ-3 requires the preparation of project-specific technical health risk assessments evaluating operational-related health risk impacts to further ensure that operational-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under CEQA. However, unlike construction activities for which the extension of construction schedules and/or use of special equipment can be reasonably assumed to be implemented, operational characteristics and the associated emissions cannot be determined at the time of this analysis. With implementation of Mitigation Measure AQ-3, the potential TAC health risk impact associated with the operation of the proposed project would remain significant and unavoidable.	risks to an acceptable level. T-BACTs may include, but are not limited to, restricting idling on site or electrifying warehousing docks to reduce diesel particulate matter, or requiring use of newer equipment and/or vehicles. T-BACTs identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site plan.	
Threshold 4.2.5: Create objectionable odors affecting a substantial number of people. **Less than Significant Impact.** While odor sources are present within the City, the odor policies enforced by the SCAQMD and the City prohibit nuisance odors and identify enforcement measures to reduce odor impacts to nearby receptors. Construction and operation of land uses consistent with the proposed project that would have the potential to result in nuisance odors would be required to comply with these regulations. Therefore,	No mitigation is required.	Less than Significant.

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impacts associated with objectionable odors would be less than significant.		
Cumulative Air Quality Impacts. **Less than Significant Impact.** Future development that may occur with implementation of the project would contribute criteria pollutants to the area during project construction and operation. However, future development under the proposed project would be required to comply with ARB, SCAQMD, and Title 24 regulations and standards and the proposed LUE/UDE project goals and policies. Consequently, emissions generated by development projects in addition to existing sources within the City are not considered to cumulatively contribute to the nonattainment designations of the South Coast Air Basin. Implementation of the proposed project would not contribute to an increase in frequency or severity of air quality violations and delay attainment of the AAQS or interim emission reductions in the AQMP.	No mitigation is required.	Less than Significant.
4.3: GREENHOUSE GAS EMISSIONS		
Threshold 4.3.1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. **Significant and Unavoidable Impact.** Implementation of the proposed project would contribute to global climate change (GCC) through direct and indirect emissions of greenhouse gases (GHGs) from land uses within the City of Long Beach (City). On a per capita basis, build out of the proposed project would reduce the GHG emissions from 9.5 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year per service population (MT of CO_2e/yr/SP) under existing conditions down to 5.9 MT of CO_2e/yr/SP (with reduction measures incorporated). However, the Land Use Element (LUE)/ Urban Design Element (UDE) GHG emissions in the City for build-out year 2040 (5.9 MT of CO_2e/yr/SP) would still exceed the interim efficiency threshold of 3.4 MT of CO_2e/yr/SP. While the proposed LUE/UDE includes various policies that would contribute to reduced GHG emissions, the City would require assistance from additional federal and State programs and regulations to achieve the	**GHG-1:** The City of Long Beach (City) shall develop a greenhouse gas (GHG) Reduction Plan or Climate Action Plan (CAP) to ensure that the City continues on a trajectory that aligns with the short-term, interim, and long-term state GHG reduction goals of Assembly Bill (AB) 32 (2020 goal), Executive Order (EO) B-30-15 (2030 goal), and EO S-03-05 (2050 goal). Within approximately 36 months of adoption of the proposed General Plan Land Use Element (LUE)/Urban Design Element (UDE) project, the City of Long Beach shall prepare and present to the City Council for adoption a community climate action plan/greenhouse gas reduction plan (Plan). The Plan shall identify strategies to be implemented to reduce GHG emissions associated with the City, and shall include as one alternative a program that achieves the AB 32 targets. In addition, the City shall monitor GHG emissions by updating its community-wide GHG emissions inventory every 5 years upon adoption of	Significant and Unavoidable

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long-term GHG emissions goal. Mitigation Measures GHG-1 through GHG-4 have been proposed to minimize and reduce potentially significant GHG impacts. In addition to the proposed mitigation measures, additional statewide measures would be necessary to reduce GHG emissions from development that may occur with adoption of the proposed project to meet the long-term GHG reduction goals under Executive Orders (EOs) O S-3-05 and B-30-15. Since no additional statewide measures are currently available that can be implemented, GHG emission impacts for the project under the build-out scenario would remain significant and unavoidable.	the initial Plan. Upon the next update to the Plan, the inventory, GHG reduction measures, and GHG reductions shall be forecast to year 2040 to ensure progress toward achieving the interim target that aligns with the long-term GHG reduction goals of EO S-03-04. The Plan update shall take into account the reductions achievable from federal and State actions and measures as well as ongoing work by the City and the private sector. The 2040 Plan update shall be completed by January 1, 2020, with a plan to achieve GHG reductions for 2030 (EO B-30-15 goal), provided the State has an actual plan to achieve reductions for 2030. New reduction programs in similar sectors as the proposed Plan (building energy, transportation, waste, water, wastewater, agriculture, and others) will likely be necessary. Future targets shall be considered in alignment with State reduction targets, to the maximum extent feasible, but it is premature at this time to determine whether or not such targets can be feasibly met through the combination of federal, state, and local action given technical, logistical and financial constraints. Future updates to the Plan shall account for the horizon beyond 2030 as the State adopts actual plans to meet post-2030 targets. The Plan will include details on how the reduction programs will be implemented and will designate responsible parties to monitor progress and ensure implementation of the reductions within the Plan. A monitoring and reporting program will be included to ensure the Plan achieves the reduction targets. The Plan will also include criteria that would trigger an update to the Plan. Examples of triggers requiring a Plan update include monitoring of progress that demonstrates that the Plan will not achieve the reduction targets, or economic and/or population growth that exceeds the scope of the Plan. In all instances, the Plan and any updates shall be consistent with State and	

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	federal law. Long Beach GHG Reduction Plan or Climate Action Plan Measures: • Establish a goal to encourage 15 percent of existing single-family homes to install solar installations before 2020. • Establish a goal to encourage 15 percent of existing commercial/industrial buildings to install solar installations before 2020. • Collaborate with Long Beach Transit to implement "Smart Bus" technology, global positioning system (GPS), and electronic displays at all transit stops by 2020 to provide customers with "real-time" arrival and departure time information. • Explore the opportunity for expansion of electric-vehicle infrastructure, including requiring electric-vehicle charging stations in new qualified developments. • Develop public education materials that support and encourage the use of recycled water. • Consider a plan for installing recycled water infrastructures for all new parks, schools, and other public facilities to use 100 percent recycled water for non-potable outdoor uses. • Adopt a municipal goal of 100 percent recycled water for non-potable sources, as feasible, depending on available recycled water infrastructure. • Adopt a landscaping water conservation ordinance that exceeds the requirements in the Model Landscape Ordinance (AB 1881). Post-2020 Measures:	

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	• Prior to January 1, 2020, the City of Long Beach shall update the GHG Reduction Plan or CAP to address the GHG reduction goals of EO B-30-15 for GHG sectors for which the City has direct or indirect jurisdictional control. The City shall identify a GHG emissions reduction target for year 2030 that is consistent with the GHG reduction goals identified in EO S-03-05. The GHG Reduction Plan or CAP shall be updated to include measures to ensure that the City is on a trajectory that aligns with the State's 2030 GHG emissions reduction target. **GHG-2:** Within approximately 18 months of adoption of the proposed General Plan LUE/UDE project, the City shall prepare and present to the City Council for adoption a vehicle miles traveled (VMT) reduction plan to ensure that GHG reduction can be achieved by reducing VMT and by increasing or encouraging the use of alternative fuels and transportation technologies. • The City will ensure that new development incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation. • The City shall give priority to transportation projects that will contribute to a reduction in VMT per capita, while maintaining economic vitality and sustainability. • The City will create an interconnected transportation system that allows a shift in travel from private passenger vehicle to alternative modes, including public transit, ride sharing, car sharing, bicycling,	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
	and walking. **GHG-3:** Prior to issuance of building permits for residential development projects within the LUE/UDE Areas of Change, the property owner/developer shall indicate on the building plans that the following features have been incorporated into the design of the building(s). Proper installation of these features shall be verified by the City of Long Beach Building and Safety Bureau prior to issuance of a certificate of occupancy. • For multifamily dwellings, electric vehicle charging shall be provided as specified in Section A4.106.8.2 (Residential Voluntary Measures) of the California Green Building Standards Code (CALGreen Code). • Bicycle parking shall be provided as specified in Section A4.106.9 (Residential Voluntary Measures) of the CALGreen Code. **GHG-4:** Prior to issuance of building permits for non-residential development projects within the LUE/UDE Areas of Change, the property owner/developer shall indicate on the building plans that the following features have been incorporated into the design of the building(s). Proper installation of these features shall be verified by the City of Long Beach Building and Safety Bureau prior to issuance of a certificate of occupancy. • For buildings with more than ten tenant-occupants, changing/shower facilities shall be provided as specified in Section A5.106.4.3 (Nonresidential Voluntary Measures) of the CALGreen Code. • Preferential parking for low-emitting, fuel-efficient,	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
	and carpool/van vehicles shall be provided as specified in Section A5.106.5.1 (Nonresidential Voluntary Measures) of the CALGreen Code. • Facilities shall be installed to support future electric vehicle charging at each non-residential building with 30 or more parking spaces. Installation shall be consistent with Section A5.106.5.3 (Nonresidential Voluntary Measures) of the CALGreen Code.	
Threshold 4.3.2: Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. **Less than Significant Impact.** In addition to the City's Sustainable City Action Plan (SCAP), the California Air Resources Board (ARB) Scoping Plan and the Southern California Association of Governments' (SCAG) 2012 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) identify strategies to reduce GHG emissions, both of which are applicable to the proposed project. The proposed LUE/UDE project and its policies would be consistent with applicable measures and goals identified in the City's SCAP, the ARB Scoping Plan, and SCAG's 2012 Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). Furthermore, implementation of the proposed project would not conflict with or impede implementation of reduction goals identified in Assembly Bill (AB) 32, Executive Order (EO) S-3-05, or other strategies to help reduce GHGs to the level proposed by the Governor. The project would also be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the project. Further, the proposed project would result in a net reduction of overall GHG emissions. Therefore, the proposed project would not conflict with any applicable plan, program, policy, or regulation related to the reduction of GHG emissions. Impacts are considered less than significant, and no mitigation is required.	No mitigation is required.	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Cumulative Greenhouse Gas Emission Impacts. **Less than Significant Impact.** Although the proposed project is expected to emit GHGs, the emission of GHGs by any single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHGs from more than one project and many sources in the atmosphere that may result in GCC. The resultant consequences of that climate change, including sea level rise, could cause adverse environmental effects. The proposed project would result in a GHG emission profile that is lower than existing GHG emissions within the City. Additionally, since climate change is a global issue, it is unlikely that the proposed project would generate enough GHG emissions to influence GCC on its own. Because the proposed project's impacts alone would not cause or significantly contribute to GCC, project-related CO_2e emissions and their contribution to GCC impacts in the State of California would not make a significant contribution to cumulatively considerable GHG emission impacts. Therefore, the proposed project would not result in a significant long-term cumulative impact on GCC (including sea level rise). Rising sea levels may affect the built environment, including coastal development such as buildings, roads, and infrastructure. However, future projects facilitated under the proposed LUE/UDE project would be planned in consideration of the conditions at the time they are proposed and would be evaluated for their potential to be affected by the change in sea level resulting from GCC during environmental review.	No mitigation is required.	Less than Significant.
4.4: LAND USE AND PLANNING		
Threshold 4.4.2: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the General Plan, Specific Plan, Local Coastal Program, or Zoning Ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	**Project Design Feature 4.4.1:** To ensure that the proposed project complies with and would not conflict with or impede the City of Long Beach (City) Zoning Code, the project shall implement a Zone Change Program to ensure that changes facilitated by the adopted Land Use Element (LUE) are consistent with the Zoning	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Less than Significant Impact. **General Plan:** The proposed project would update and replace the existing Land Use Element (LUE) with an updated LUE and replace the existing Scenic Routes Element (SRE) with the proposed UDE. As part of the proposed LUE, the 14 PlaceTypes would replace the existing land use designations. Although the proposed PlaceTypes are currently inconsistent with the existing General Plan land use designations, approval of the proposed project would result in the project being consistent with the General Plan and would ensure the proposed LUE would be the presiding policy document guiding land use in the City of Long Beach (City). The goals and policies in the General Plan would be updated and replaced by the goals, strategies, policies, and implementation strategies outlined in the proposed LUE and UDE. These goals, strategies, policies, and implementation strategies would be internally consistent between the proposed LUE and UDE, as well as consistent with existing elements of the City's General Plan. **City Zoning Code:** While the PlaceTypes included as part of the project would be inconsistent with some current zoning districts and regulations outlined in the City's existing Zoning Code and corresponding Zoning Map, the project includes Project Design Feature 4.4.1 to address such inconsistencies. Therefore, with incorporation of Project Design Feature 4.4.1, the proposed project would be consistent with the City's Zoning Code and Zoning Map. **Local Coastal Program:** Because the proposed project would result in updates to the City's General Plan that would be inconsistent with portions of the City's existing Local Coastal Program (LCP), project implementation could result in potential land use conflicts with the LCP. Therefore, updates/amendments to the City's LCP could be required at the time individual applications for development within the City's Coastal Zone are proposed, if they were determined by the City to be inconsistent with the adopted General Plan LUE. Approval of these future LCP amendments would reduce potential inconsistencies with the City's LCP to a less than	Code. The Zone Change Program shall be implemented to the satisfaction of the City Director of Development Services, or designee, and shall include the following specific performance criteria to be implemented within 5 years from the date of project approval: • **Year 1:** Within the first 12 months following project approval, all Land Use Element/Zoning Code inconsistencies shall be identified and mapped. The City shall evaluate these inconsistencies and prioritize areas needing intervention. • **Year 2:** Following the identification and mapping of any zoning inconsistencies, the City shall, within 24 months following project approval, begin processing zone changes and zone text amendments in batches, as required to ensure that the Zoning Code is consistent with the adopted LUE. • **Year 3:** The City shall, within 36 months following project approval, begin drafting new zones, or begin preparation of a comprehensive Zoning Code update, to better reflect the PlaceTypes identified in the adopted LUE. • **Year 5:** All zoning inconsistencies shall be resolved through mapping and zone text amendments by the end of the fifth year following project approval.	

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
significant level. **SCAG RCP and RTP/SCS:** The proposed project would be consistent with the Regional Comprehensive Plan (RCP) and RTP/SCS's goal of locating new development adjacent to High Quality Transit Areas (HQTAs), improving the transportation network, providing a variety of new housing types, promoting a diverse economy, and protecting the existing natural environment.		
Cumulative Land Use and Planning Impacts. **Less than Significant Impact.** The cumulative impact area for land use for the proposed project is the City of Long Beach. As such, each new development project facilitated by project approval would be subject to its own General Plan consistency analysis and would be reviewed for consistency with adopted land use plans and policies. Approval of the proposed project would ensure that the proposed LUE would become the guiding land use document for the City, thereby mitigating any potential inconsistencies with the City's General Plan and other applicable land use documents (i.e., the California Coastal Act, the City's LCP, and SCAG's RCP and RTP/SCS). The project would also address potential inconsistencies with the City's Zoning Ordinance and Zoning Map within the first 5 years following project approval (as outlined in Project Design Feature 4.4.1), which would reduce cumulative project impacts related to potential zoning inconsistencies to a less than significant level.	No mitigation is required.	Less than Significant.
4.5: NOISE		
Threshold 4.5.1: Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. **Less than Significant Impact.** **Short-Term Construction-Related Noise Impacts.** Two types of short-	No mitigation is required.	Less than Significant.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
term noise impacts could occur during construction of potential development allowed by the Land Use Element (LUE). First, construction crew commutes and the transport of construction equipment and materials to the site for future projects would incrementally increase noise levels on access roads leading to the sites. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance, the effect on longer-term (hourly or daily) ambient noise levels would be small. The second type of short-term noise impact is related to noise generated during demolition, site preparation, excavation, grading, and building erection on the future project sites. The maximum noise level generated by each scraper on future project sites would be approximately 87 A-weighted decibels (dBA) maximum instantaneous noise level (L_{max}) at 50 ft from the scraper. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level during this phase of future construction would be 91 dBA L_{max} at a distance of 50 ft from the active construction area. Construction activities associated with development allowed under the LUE would be subject to compliance with the City of Long Beach (City) Noise Ordinance to ensure that noise impacts from construction sources are reduced to a less than significant level. No mitigation is required. **Long-Term Stationary-Source Noise Impacts.** Development allowed under the proposed LUE may include the installation or creation of new stationary sources of noise, or could include the development of new sensitive land uses in the vicinity of existing noise sources. However, noise generation would continue to be limited by the Noise Ordinance of the City's Municipal Code (Chapter 8.80). Implementation of the LUE is not anticipated to result in increased railroad operations within the City. However, the LUE proposes the transit-oriented development (TOD) PlaceType, which would allow future multifamily developments to be located along the Metro Blue Line fixed rail route.		

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Locating multifamily developments near the light-rail corridor could expose sensitive land uses to operational rail noise. Several of the LUE and Urban Design Element (UDE) policies require new development projects to incorporate site planning and project design strategies to separate or buffer neighborhoods from incompatible activities or land uses. Therefore, implementation of the LUE/UDE would not expose persons to noise levels in excess of the City's Municipal Code, and no mitigation measures are required.		
Threshold 4.5.2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels. **Less than Significant Impact.** Ground-borne noise and vibration from construction activity would be mostly low to moderate except if pavement breaking or sheet-pile vibration is used on a site. Receptors at 100 ft and 200 ft from the construction activity may be exposed to ground-borne vibration up to 86 vibration velocity decibels (VdB) and 80 VdB, respectively. Construction of future projects associated with implementation of the LUE/UDE could result in the generation of ground-borne vibration. However, Chapter 8.80 of the City's Noise Ordinance limits the operation of any device that creates vibration above the vibration perception threshold of 67 VdB. Any construction activities associated with implementation of the LUE/UDE would be required to comply with the Noise Ordinance requirements. Therefore, impacts from typical construction methods would not result in the exposure of sensitive receptors to excessive ground-borne vibration or noise levels, and no mitigation is required. Potential ground-borne vibration and noise impacts may also occur from rail activity because the LUE/UDE would include TOD along the Metro Blue Line. To ensure new land uses adjacent to the rail line are not exposed to excessive ground-borne vibration, LU Policy 15-6 requires that new development within 200 ft of the Metro rail line conduct a vibration	No mitigation is required.	Less than Significant.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
assessment demonstrating that Federal Transit Administration (FTA) Ground-borne Vibration Impact Criteria for the proposed land use are not exceeded. If necessary, the vibration assessment shall also demonstrate project modifications required to ensure criteria compliance. Therefore, implementation of the LUE/UDE would not expose persons to excessive ground-borne vibration and/or ground-borne noise levels, and no mitigation is required.		
Threshold 4.5.3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Less than Significant with Mitigation. **Less than Significant Impact.** **Long-Term Off-Site Traffic Noise Impacts.** Potential sources of a permanent increase in ambient noise include increases associated with an increase in traffic on roadways in the planning area. It is projected that traffic volumes on some streets within the City would increase due to the growth envisioned in the LUE/UDE, which is expected to result in greater traffic noise levels compared to existing conditions. However, the anticipated increase in traffic volumes associated with the LUE/UDE would be less than a doubling of traffic, resulting in a noise increase of less than 3 dBA; therefore, implementation of the LUE/UDE is not expected to result in the generation of substantial traffic noise increases. Implementation of the LUE/UDE would not result in a permanent increase in ambient noise levels, and no mitigation is required.	No mitigation is required.	Less than Significant.
Threshold 4.5.4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. **Less than Significant Impact.** Maximum combined noise levels from proposed project-related construction activities could reach up to 91 dBA L_{max} at 50 ft for limited times during future construction. Construction noise is permitted by the City's Municipal Code when activities occur between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on Saturdays. No construction would be permitted on	No mitigation is required.	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Sundays. Construction activities associated with development allowed under the LUE would be subject to compliance with the City's Noise Ordinance to ensure that noise impacts from construction sources are reduced to a less than significant level. No mitigation is required.		
Threshold 4.5.5: 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, expose people residing or working in the project area to excessive noise levels. **No Impact.** Aircraft noise in the City of Long Beach is primarily related to aircraft operations at Long Beach Airport, Los Angeles International Airport, and John Wayne Airport. Long Beach Airport is located centrally within the City, approximately 3 miles northeast of the Downtown area. Implementation of the LUE/UDE would locate business parks and airport-related land uses surrounding the airport and would not introduce any new noise-sensitive receptors within the 65 dBA noise contour of the Long Beach Airport. Therefore, the LUE/UDE would not result in the exposure of sensitive receptors to excessive noise levels from aircraft noise sources. No mitigation measures are required.	No mitigation is required.	No Impact.
Threshold 4.5.6: For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels. **No Impact.** Aircraft noise in the City of Long Beach is primarily related to aircraft operations at Long Beach Airport, Los Angeles International Airport, and John Wayne Airport. Implementation of the LUE/UDE would locate business parks and airport-related land uses surrounding the airport and would not introduce any new noise-sensitive receptors within the 65 dBA noise contour of the Long Beach Airport. Therefore, the LUE/UDE would not result in the exposure of sensitive receptors to excessive noise levels from aircraft noise sources. No mitigation measures are required.	No mitigation is required.	No Impact.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Cumulative Noise Impacts. **Less than Significant Impact.** The proposed project would not create a cumulatively considerable contribution to regional noise conditions. Implementation of the proposed project would not result in a 3 dBA increase in traffic noise levels in the City and would not generate a significant impact under cumulative noise conditions. Additionally, implementation of the LUE/UDE policies and land use strategies would require the City to consider noise and land use compatibility issues when evaluating individual development proposals. Therefore, under cumulative conditions, implementation of the proposed project would result in a less than significant cumulative impact.	No mitigation is required.	Less than Significant.
4.6: POPULATION AND HOUSING		
Threshold 4.6.1: Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure). **Less than Significant Impact.** The proposed project would allow for the increased intensity and density of mixed-use and residential uses in the City of Long Beach (City) that would facilitate the future development of up to 11,744 new housing units through the year 2040. This growth would be consistent with Southern California Association of Governments' (SCAG) regional growth forecasts for the same horizon year. Therefore, the project's growth-inducing potential would be less than significant, as it would not foster growth in excess of what is assumed in pertinent master plans, land use plans, or in projections made by regional planning agencies (e.g., SCAG). While the place of residence of the persons accepting employment provided by the proposed uses is uncertain, due to the City's projected jobs-to-housing ratio, it is reasonable that a large percentage of these jobs would be filled by persons already living within the City or project area; therefore, no significant increase in population of the City is anticipated to result from the development or operation of future development facilitated by the proposed project.	No mitigation is required.	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Improvements to public utilities, including new water, sanitary sewer, and storm water services would be identified on a project-specific basis as new developments are proposed under the proposed Land Use Element (LUE). Infrastructure improvements associated with future development facilitated by project approval would be sized appropriately for each project and would not be oversized to serve additional growth beyond that envisioned under the proposed LUE.		
Cumulative Population and Housing Impacts. **Less than Significant Impact.** The City's population is anticipated to increase by 51,230 persons by 2040. Similarly, the City's employment is anticipated to increase by 28,511 jobs by 2040 and the County of Los Angeles (County) employment is anticipated to increase by 5,213,136 jobs by 2040. Project-related increases in population and employment have been accounted for in SCAG's growth projections for the City. The proposed project will serve an existing demand for employment, while also meeting the cumulative demand of employment that will result from the City's projected future population. These increases for population, housing, and employment would be within the total projected growth forecasts for 2040. Implementation of the proposed project would not result in a cumulatively significant population or housing impact and the future development facilitated by project approval would not significantly induce growth in areas where growth was not previously anticipated.	No mitigation is required.	Less than Significant.
4.7: PUBLIC SERVICES		
Threshold 4.7.1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for *fire protection*. **Less than Significant Impact.** The proposed project does not include any physical improvements, but allows future development that is anticipated to create an increase in the typical range of fire protection service calls within	No mitigation is required.	Less than Significant.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
the City of Long Beach (City). The costs of additional personnel and materials are anticipated to be offset through the increased revenues and fees, such as property taxes, generated by future development. Future projects would be reviewed by the City on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted police facilities impact fees. The Long Beach Fire Department (LBFD) would also continue to be supported by Proposition H revenue; the City's General Funds; the City's Tidelands operation revenue; and other revenue sources. Therefore, sufficient revenue would be available for necessary improvements to provide for adequate fire facilities, equipment, and personnel upon build out of the proposed project.		
Threshold 4.7.2: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for *police protection*. **Less than Significant Impact.** The proposed project does not include any physical improvements, but allows future development that is anticipated to create an increase in the typical range of police service calls within the City. To serve future growth, new and/or additional police resources would be needed to prevent an impact to service ratios. The costs of additional personnel and materials are anticipated to be offset through the increased revenues and fees, such as property taxes, generated by future development. Future projects would be reviewed by the City on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted police facilities impact fees. In addition, the Long Beach Police Department (LBPD) would continue to be supported by Proposition H revenue, a per barrel tax on all oil producers in Long Beach; the City's Tidelands operation revenue; and other revenue sources.	No mitigation is required.	Less than Significant.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
By following this process, sufficient revenue would be available for necessary service improvements to provide for adequate police facilities, equipment, and personnel upon build out of the proposed project.		
Threshold 4.7.3: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for *public schools*. **Less than Significant Impact.** Implementation of the proposed project would allow future development that would enable the generation of school-age children within the Long Beach Unified School District (LBUSD) service area. With General Plan build out, elementary and middle school enrollment in LBUSD would continue to be within the 2014–2015 LBUSD facilities capacity, but high school and total estimated enrollment in LBUSD in 2040 would exceed the LBUSD current facilities capacity. The proposed project does not include any physical improvements; therefore, future school facility needs would be funded by fees collected by future development projects. Further, all future projects consistent with the proposed Land Use Element (LUE) and Urban Design Element (UDE) would be required to undergo project-specific environmental review and comply with the provision of school developer fees or new/altered facilities.	No mitigation is required.	No impact.
Threshold 4.7.5: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any *other public facilities*. **Less than Significant.** **Public Library.**	No mitigation is required.	Less than Significant.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Less than Significant Impact. The proposed project does not include any physical improvements, but would allow for new PlaceTypes that would facilitate an increase in housing units and demand for Long Beach Public Library (LBPL) facilities. The City has not formally adopted a service standard of library space per capita, but the City did establish a target of 0.45 square feet (sf) per capita in its budget for Fiscal Year 2007. In total, the existing LBPL system has approximately 220,265 sf of library facilities, which is adequate to serve the City's existing population and sufficiently support the projected demand generated by the build out of the proposed project. Additionally, the North Branch Library is scheduled to move to a new, larger facility later in 2016, which will increase the LBPL square footage by approximately 17,700 sf. Therefore, the proposed project's increase in demand on library services can be served by the existing facilities and would not adversely affect library services in the project area.		
Cumulative Public Service Impacts. **Less than Significant Impact.** The proposed project would contribute to cumulative local and regional demand for public services and utilities, including police and fire services, schools, parks, and libraries. For each public service, the proposed project would generate increased demand in varying amounts. However, each future project within the project area would be evaluated individually, and project-specific mitigation would be required as needed. Therefore, no mitigation is required. **Fire Protection.** The City is almost entirely built out, with most new development occurring as in-fill projects. The LBFD anticipates cumulative demand in order to plan for overall service. This cumulative demand is anticipated to be met through project implementation as the LUE establishes the development of future fire stations. Furthermore, through implementation of the proposed project, the City will reduce the potential for dangerous fires by concentrating development within urban areas where there is a low fire risk and by requiring that future projects comply with applicable City and State regulations related to fire. Therefore, the proposed project's contribution to fire protection impacts would not be cumulatively considerable, and no mitigation is required.	No mitigation is required.	Less than Significant.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Police Protection. The City is almost entirely built out, with most new development occurring as in-fill projects. This cumulative demand is anticipated to be met through project implementation as the LUE establishes the development of future police stations. In addition, the need for additional law enforcement associated with cumulative growth would be addressed through the annual budgeting process when budget adjustments would be made in an effort to meet changes in service demand. Therefore, the proposed project's contribution to police protection impacts would not be cumulatively considerable, and no mitigation is required. **Public Schools.** The proposed project would generate approximately 3,977 school-aged children, which would lead to an increased demand on existing educational school facilities. Future projects consistent with the LUE would be accounted for on a project-by-project basis. Residential projects located within the LBUSD service area, but outside the City of Long Beach, would have the potential to generate school-aged children, and, as a result, increase demand on educational school facilities. LBUSD would assess developer fees to future projects within its service area in an effort to fund future schools needed to meet the project-related increase in school-aged children. Therefore, the proposed project would not contribute to any cumulative school impacts, and no mitigation is required. **Public Libraries.** The City currently meets the LBPL system's square footage requirements, and the proposed project would not exceed the LBPL system's ability to meet project demand at build out with existing library services. Therefore, the proposed project's contribution to library impacts would not be cumulatively considerable, and no mitigation is required.		
4.8: TRANSPORTATION/TRAFFIC		
Threshold 4.8.1: Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections.	No feasible mitigation.	Significant and Unavoidable.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Significant and Unavoidable Impact. The proposed Land Use Element (LUE) concentrates growth along corridors and districts that would provide residents and employees with alternatives for travel aside from a private automobile. However, concentrating future growth in these areas also has the potential to concentrate new automobile trips. Based on the City of Long Beach's (City's) criteria, 44 intersections could be significantly impacted by new development occurring under the proposed project. The forecasted intersection level of service (LOS) deficiencies are caused by future traffic volume growth from the projected project-related traffic volumes in the build-out year of 2040. Mitigation in the form of vehicle and non-vehicle capacity enhancements for each impacted intersection was reviewed for feasibility. It was determined that vehicle capacity enhancements would be infeasible, for various reasons, at all 44 impacted intersections. Executing Implementation Measures from the Mobility Element would have an effect on managing travel demand, reducing the volume of vehicle traffic, decreasing the volume-to-capacity (v/c) ratio at City intersections, and improving vehicle LOS. Although these measures would contribute to a reduced vehicle LOS, their effects cannot be quantified and they cannot be considered mitigation for the 44 impacted study area intersections for the purposes of the California Environmental Quality Act (CEQA). Because vehicle capacity enhancements to the impacted intersections are not feasible, and because no other mitigation to reduce traffic is available and enforceable, impacts to the 44 intersections identified above are considered significant and unavoidable for the build-out year of 2040.		
Threshold 4.8.2: Exceed, either individually or cumulatively, a level of service standard established by the County congestion/management agency for designated roads or highways. **Significant and Unavoidable Impact.** A significant impact at a Congestion Management Plan (CMP) intersection occurs when a project causes a 0.02 or greater increase in v/c ratio at an intersection operating at LOS E or F. Of the 88 study area intersections, the CMP includes 10	No feasible mitigation.	Significant and Unavoidable.

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Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
monitored intersections. Five intersections would have a significant project-related impact based on CMP criteria. Because there is no feasible mitigation to reduce impacts at these impacted intersections, impacts at these five intersections are considered significant and unavoidable for the build-out year of 2040.		
Cumulative Traffic/Traffic Impacts. **Significant and Unavoidable Impact.** The proposed project is a citywide policy action that would facilitate future development throughout the entire City, and the proposed project itself is cumulative in nature. Under 2040 Plus Project build-out conditions, 44 intersections would be significantly impacted and would operate below the City's LOS D standard. Therefore, the proposed project would contribute to a cumulative impact at these 44 intersections. As previously stated, intersection enhancements at the impacted intersections were reviewed, but determined to be infeasible. Implementation Measures identified in the Mobility Element were designed to reduce the number of automobile trips on the roadway network and promote mobility by supporting all travel modes, but the effects of these measures on individual intersection LOS cannot be guaranteed because they rely on the changing attitudes and actions of many commuters. Because physical vehicle capacity enhancements are not feasible, the impacts to the 44 intersections identified above are considered cumulatively significant and unavoidable for the build-out year of 2040.	No feasible mitigation.	Significant and Unavoidable.
4.9: UTILITIES		
Threshold 4.9.1: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. **Less than Significant Impact.** The proposed project is anticipated to generate a total estimated wastewater flow of approximately 40.2 million gallons per day (mgd), or an approximate increase of 2.8 mgd over 2012 usage. There is sufficient wastewater treatment capacity within the Los Angeles County Sanitation District (LACSD) facilities to accommodate this increase in wastewater demand citywide, and no major improvements are required. The increase in wastewater flows associated with the proposed	No mitigation is required.	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
project would not exceed the treatment requirements of the Regional Water Quality Control Board (RWQCB) for the Joint Water Pollution Control Plant (JWPCP) and the Long Beach Water Reclamation Plant (WRP) of the LACSD. Future improvements and upgrades to existing sewer lines would continue to be prioritized on an as-needed basis, and development fees collected from future projects facilitated by project approval would fund the highest-priority projects. Therefore, impacts related to wastewater are less than significant, and no mitigation is required.		
Threshold 4.9.2: Require or result in the construction of new *water* or wastewater treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects **OR** **Threshold 4.9.4: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed** **Less Than Significant Impact.** The anticipated 2040 water demand for the proposed project represents approximately 7 percent of the Long Beach Water Department's (LBWD) projected water supply for the year 2040. Therefore, the project-related increase in water demand would be within the LBWD's projected water supply for its service area in the year 2040. Additionally, under Assembly Bill (AB) 610, a Water Supply Assessment (WSA) would be required for certain projects. Individual projects occurring under the proposed project would be required to prepare a WSA if they meet any of the requirements under AB 610. Therefore, impacts related to water demand would be less than significant, and no mitigation is required.	No mitigation is required.	Less than Significant.
Threshold 4.9.2: Require or result in the construction of new water or *wastewater* treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects **OR**	No mitigation is required.	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Threshold 4.9.5: Result in a determination by the wastewater treatment provider which serves or may serve the project that is has adequate capacity to serve the project's projected demand in addition to the provider's existing commitment **Less than Significant Impact.** **Wastewater.** The proposed project does not include physical improvements, but sanitary services during construction of future projects would likely be provided by portable toilet facilities, which transport waste off site for treatment and disposal. Therefore, during construction, potential impacts to wastewater treatment and wastewater conveyance infrastructure would be less than significant, and no mitigation is required. No new major sewer upgrades are anticipated or recommended for the proposed project. All new development in the City of Long Beach (City) will be subject to sewer capacity considerations as part of the City development review and approval process. Improvements and upgrades to sewer lines are prioritized based on need. Development fees from future projects occurring under the proposed project would be collected from each project and used to fund the highest priority improvements. The proposed project would not substantially or incrementally exceed the current or future scheduled capacity of the JWPCP or the Long Beach WRP by generating flows greater than those anticipated. Therefore, project impacts related to wastewater treatment would be less than significant, and no mitigation is required.		
Threshold 4.9.3: Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. **Less than Significant Impact.** Future development under the proposed project would be required to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) General Permit for	No mitigation is required.	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), or any other subsequent applicable permits. The Construction General Permit requires preparation of a Storm Water Pollution Prevention Plan (SWPPP) to identify construction best management practices (BMPs) to be implemented during project construction in order to reduce impacts to water quality, including those impacts associated with soil erosion, siltation, spills, and increased runoff. With compliance with the Construction General Permit, construction impacts related to the capacity of the existing storm water drainage systems would be reduced to less than significant levels. Operation of future projects would increase impervious surface area, which would reduce infiltration. Future projects would be reviewed on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Depending on the size and nature of the projects, a Water Quality Management Plan (WQMP) would be developed on a project-specific basis to address post-construction urban runoff and storm water pollution from new development and significant redevelopment projects. The hydrological analyses included in the WQMPs prepared for future projects would identify BMPs and improvements to the existing storm drain system that would ensure that the City would be able to adequately handle increased storm water runoff as a result of the proposed project. Therefore, the proposed project would result in less than significant impacts related to the construction or expansion of storm water drainage facilities, and no mitigation is required.		
Threshold 4.9.6: Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs. **Less than Significant Impact.** Construction of future projects facilitated by the proposed project would generate demolition waste. Construction waste would be recycled to the extent feasible pursuant to Chapter 18.67, Construction and Demolition Recycling Program, of the City's Municipal Code. Under the Municipal Code, covered projects requiring demolition or building permits issued on or after January 1, 2014, are required to divert at least 60 percent of all project-related construction and demolition material	No mitigation is required.	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
from landfills. Compliance with this chapter of the Municipal Code would be a condition of approval on any construction or demolition permit issued for a covered project. Therefore, the proposed project would have a less than significant impact related to solid waste generation during construction, and no mitigation measures regarding construction debris are required. The City's Environmental Services Bureau provides solid waste collection services to collect and dispose of the solid waste/refuse generated by the City. Solid waste generated in the City is also transported to LACSD facilities when solid waste is considered unproccessable to the Southeast Resource Recovery Facility (SERRF). Solid waste generated by operations associated with future development under the proposed project would be collected by the City's Environmental Services Bureau and hauled to the SERRF. With the proposed project, the City is forecast to generate approximately 1.6 million pounds of solid waste in 2040, or an increase of approximately 133,342 pounds (lbs) per day. There is sufficient landfill capacity in the region to serve solid waste generated by the proposed project. Therefore, impacts related to solid waste generation are considered less than significant, and no mitigation is required.		
Cumulative Utility Impacts **Less than Significant Impact.** **Wastewater.** The geographic area for the cumulative analysis for wastewater treatment is defined as the City and LACSD. Within its service area, LACSD uses United States Census Bureau population information with population projections, as well as existing land use and build out or zoned land use to project current and future wastewater flows. While the proposed project does not include physical improvements, the future build out of the proposed project is not anticipated to generate wastewater above LACSD's current capacity. The proposed project would result in a population consistent with the growth projections for the City provided in the 2016–2040 Regional Transportation Plan/Sustainable Communities	No mitigation is required.	Less than Significant.

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
Strategy. Therefore, the proposed project's contribution to wastewater generation in the LACSD service area would not be cumulatively considerable, and no mitigation is required. **Water.** The geographic area for the cumulative analysis of water infrastructure includes the service territory of the LBWD. According to the City's 2015 Regional Urban Water Management Plan (UWMP), the Metropolitan Water District of Southern California (MWDSC) future water supplies are reliable, because the MWDSC current allocation plan guarantees an amount of water close to the LBWD's need for water, and because the LBWD has a preferential right to the MWDSC supplies in excess of its need for that water. In addition, LBWD, which provides the groundwater supply to the City, projects that there are sufficient groundwater supplies to meet any future demand requirements in the City. Further, the current 2015 UWMP accounts for the proposed project's transition from traditional land uses to PlaceTypes and has demonstrated that the LBWD has the ability to serve the project-related increase in water demand through the year 2040. MWDSC's 2010 Regional UWMP describes its water availability and identifies future water supplies to meet the region's long-term water demand. The MWDSC has established the Water Supply Allocation Plan (WSAP), which calculates each member agency's supply allocations and key implementation elements required for administering the allocation. The WSAP also considers how the MWDSC would be able to provide water to its member agencies during a catastrophic interruption in water supplies. Therefore, cumulative impacts related to water demand would be less than significant, and no mitigation is required. **Solid Waste.** The geographic area for the cumulative analysis of impacts to solid waste disposal capacity is the County of Los Angeles. Development associated with the proposed project and other past, present, and reasonably foreseeable projects within the County would contribute to an increase in demand for landfill capacity and solid waste services for the County. As stated previously, the SERRF, a refuse-to-energy transformation facility,		

Table 1.A: Summary of Potential Environmental Impacts, Project Design Features, Mitigation Measures, Standard Conditions, and Level of Significance

Potential Environmental Impact	Project Design Features, Mitigation Measures, and Standard Conditions	Level of Significance After Mitigation
serves the planning area and does not have a scheduled closure date. It is expected that the SERRF will continue to operate at its current permitted daily capacity through 2027. The SERRF currently does not exceed its daily maximum permitted disposal capacity. Solid waste considered unprocessable by SERRF would be taken to landfills in Orange, San Bernardino, and Riverside Counties. There is currently sufficient permitted capacity within the LACSD system serving Los Angeles County to provide adequate future capacity for the County's solid waste needs. The City currently complies with all federal, State, and local statutes and regulations related to solid waste. Therefore, the proposed project would not have a significant project-specific or cumulative impact on waste disposal capacity at LACSD facilities.		

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2.0 INTRODUCTION

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

The Initial Study (IS) (LSA Associates, Inc. [LSA], May 2015) (Appendix A of the Draft EIR) prepared by the City determined that the proposed project may have a significant effect on the environment and that an EIR would be required to more fully evaluate potential adverse environmental impacts that may result from development of the proposed project. As a result, this Draft EIR has been prepared in accordance with CEQA, as amended (Public Resources Code [PRC], Section 21000, et seq.), and the *State CEQA Guidelines for Implementation of CEQA* (California Code of Regulations [CCR], Title 14, Section 15000, et seq.). This Draft EIR also complies with the procedures established by the City for the implementation of CEQA.

Questions regarding the preparation of this document and the City's review of the proposed project should be referred to the following:

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

2.1 PURPOSE AND TYPE OF EIR/INTENDED USES OF THE EIR

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

The City and Responsible Agencies have the authority to make decisions on discretionary actions relating to development of the proposed project. As previously stated, this Draft EIR is intended

to serve as an informational document to be considered by the City and Responsible Agencies during deliberations on the proposed project. This Draft EIR evaluates and mitigates a reasonable worst-case scenario of potential impacts associated with the proposed project.

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

(1) Geographically,

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

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

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

This Draft EIR analyzes the proposed project under CEQA at a program level. The proposed project includes the adoption of the proposed Land Use Element (LUE) and Urban Design Element (UDE), which are intended to guide the future development patterns and the aesthetic character of the City through the implementation of goals, policies, and implementation strategies. The proposed project would be implemented over the next 24 years, through the year 2040. This EIR has been prepared as a Program EIR for the following reasons:

- The proposed project would be implemented over a 24-year period.
- The proposed project would be implemented over a large geographic area, which is defined as the total area within the City limits (approximately 50 square miles).
- Development plans and details have not been developed for new projects that would be facilitated by project approval.

Although finalized plans for future projects facilitated by project approval have not yet been prepared, a worst-case build out scenario was developed to analyze impacts throughout this Draft EIR.

Subsequent activities associated with implementation of the proposed project would be evaluated for compliance with CEQA in light of this Program EIR to determine whether additional environmental documentation must be prepared. Specifically, as Tentative Tract Maps, improvement plans, or other discretionary approvals associated with implementation of the proposed project are submitted and proposed, the environmental impacts of implementing those maps, plans, and approvals will be compared against the analysis set forth in this Program EIR. To the extent that those impacts are consistent with the Program EIR's comprehensive analysis, no further CEQA documentation would be required, provided that none of the conditions set forth in the *State CEQA Guidelines*, Section 15162, exist. Subsequent CEQA analysis may be required for specific development plans, as indicated in Chapter 4.0, Existing Environmental Setting, Environmental Analysis Impacts, and Mitigation Measures, of this EIR.

As previously discussed in Chapter 1.0, Executive Summary, an EIR is the most comprehensive form of environmental documentation identified in CEQA and the *State CEQA Guidelines* and provides the information needed to assess the environmental consequences of a proposed project. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts.

2.2 PUBLIC REVIEW PROCESS

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

2.2.1 Initial Study and Notice of Preparation

The City, as the Lead Agency, issued an Initial Study and a NOP (IS/NOP) of a Draft EIR for the project on May 18, 2015, which was distributed to public agencies via the State Clearinghouse (SCH). The SCH issued a project number for the Draft EIR (SCH No. 2015051054). The primary purpose of preparing the IS was to evaluate potential environmental impacts that may result from project approval and to scope out those document for which "less than significant" and "no impact" significance determinations were made to reduce the overall scope of this Draft EIR.
In accordance with the *State CEQA Guidelines*, Section 15082, the IS/NOP was circulated to the agencies and individuals listed in Appendix A for a 30-day comment period from May 18, 2015 to June 16, 2015, during which time written comments were solicited pertaining to environmental issues/topics that the Draft EIR should evaluate. Responses to the IS/NOP were received from the following agencies:

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

The following individuals submitted written comments on the NOP:

- Anne Proffit
- Marilyn Surakus

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

- **Air Quality:** Concerns were expressed regarding project-related impacts on air quality in the South Coast Air Basin.
- **Land Use and Planning:** Concerns were expressed regarding the project's consistency with applicable land use documents, including SCAG's Regional Transportation Plan/Sustainable Communities Strategies. Concerns were also expressed regarding the project's inclusion of land use goals and policies and zoning requirements that would allow for flexibility in housing densities and types on residential properties throughout the City.
- **Traffic/Circulation:** Concerns were expressed regarding potential project-related conflicts with applicable plans, ordinances, and/or policies establishing measures of effectiveness for the performance of the circulation system and potential project-related impacts to Caltrans facilities.
- **Utilities:** Concerns were expressed regarding the ability of the City to provide water to accommodate new development allowed under General Plan Build Out.

2.2.2 Scoping Meeting Summary

The City held a public scoping meeting at the Long Beach Gas & Oil Department at 2400 East Spring Street on Wednesday, May 27, 2015, to present the proposed project and to solicit input from interested individuals regarding environmental issues that should be addressed in the Draft EIR. Key environmental issues and concerns raised in the response to the IS/NOP scoping process or at the scoping meeting included:

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

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

2.2.3 Public Review Period

This Draft EIR is being distributed to numerous public agencies and other interested parties for review and comment. The Draft EIR is also available at the following locations and on the City's website.

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

City of Long Beach Main Library
101 Pacific Avenue
Long Beach, California 90802
Hours: Sunday and Monday-Closed; Tuesday-12:00 p.m. to 8:00 p.m.; Wednesday-12:00 p.m. to 6:00 p.m.; Thursday-12:00 p.m. to 7:00 p.m.; Friday and Saturday-10:00 a.m. to 5:00 p.m.

All comments received from agencies and individuals on the Draft EIR will be accepted during the public review period, which will not be less than 45 days, in compliance with CEQA. All comments on the Draft EIR should be sent to the following City contact person:

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

Following the close of the Draft EIR review period, the City will prepare responses to all comments and will compile these comments and responses into the Final EIR. All responses to comments submitted on the Draft EIR by public agencies during the CEQA comment period on the Draft EIR will be provided to those agencies at least 10 days prior to a decision on the project. The City will make findings regarding the extent and nature of the impacts as presented in the Final EIR. The Final EIR will need to be certified as complete by the City Council prior to making a decision to approve or deny the project. Public input is encouraged at all public hearings before the City (e.g., Planning Commission, City Council) regarding the project.

2.3 SCOPE OF THIS DRAFT EIR

As required by the *State CEQA Guidelines*, Section 15126.2, this Draft EIR must identify the effects of the proposed project determined to be significant. Per *State CEQA Guidelines*, Section 15060, once the City determined that the proposed project may have a significant impact on the environment and that an EIR would be required, the EIR process was initiated.

The scoping process for this EIR included the preparation of an IS. Per the *State CEQA Guidelines*, Section 15063, the City conducted an IS to determine whether the proposed project could have a significant effect on the environment. The City determined that the proposed project may have a significant impact on the environment and issued an NOP soliciting comments from Responsible and Trustee Agencies and other interested parties, including members of the public. In addition to identifying potentially significant impacts of the proposed project that required

additional study, the IS also identified effects determined not to be significant consistent with the *State CEQA Guidelines*, Section 15063(c)(3)(B). Impacts that were determined to be less than significant were discussed and evaluated in the IS, which is included in Appendix A of this Draft EIR. The analysis determined that the proposed project would result in either no impacts or less than significant impacts related to the following topics: agricultural resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, and recreation.

It should be noted that while concerns were expressed during the Scoping Meeting regarding the proposed project's impact on existing recreational resources in the City, Section 4.15, Recreation, of the IS prepared for the project determined that project-related impacts to recreational resources would be less than significant. Specifically, the IS determined that because the project is considered a policy/planning action and would not include physical improvements that would generate an increased use of existing recreational facilities and because the proposed LUE calls for the preservation of existing and the creation of new recreational facilities, the project would result in less than significant impacts with respect to recreational resources. For these reasons, this topic is not discussed further in this Draft EIR.

Potential impacts related to agricultural resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, and recreation are discussed solely in Appendix A of this Draft EIR. The City's IS and Environmental Checklist Form are discussed in Chapter 4.0, Existing Environmental Setting, Environmental Analysis Impacts, and Mitigation Measures, of this document, and a copy of the IS and Environmental Checklist for the proposed project is included in Appendix A of this Draft EIR.

2.4 FORMAT OF THE DRAFT EIR

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

2.4.1 Chapter 1.0: Executive Summary

Chapter 1.0 contains the Executive Summary of the Draft EIR, listing all significant project impacts, mitigation measures that have been recommended to reduce any significant impacts of the proposed project, and the level of significance of each impact following mitigation. The summary is presented in a table format.

2.4.2 Chapter 2.0: Introduction

Chapter 2.0 contains a discussion of the purpose and intended use of the Draft EIR.

2.4.3 Chapter 3.0: Project Description

Chapter 3.0 includes discussion of the proposed project's geographical setting; the planning area; the project history; and the proposed project's goals, objectives, and characteristics; and anticipated discretionary actions and permits for the project.

2.4.4 Chapter 4.0: Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures

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

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

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

The discussions of mitigation measures identify and describe feasible measures that could minimize or lessen significant adverse impacts for each significant environmental effect identified in the Draft EIR (Section 15126[e] of the *State CEQA Guidelines*). The levels of significance before and after mitigation are provided. Unavoidable adverse effects are identified where mitigation is not expected to reduce the effects to less than significant levels.

2.4.5 Chapter 5.0: Alternatives to the Proposed Project

In accordance with CEQA (Section 15126.6 of the *State CEQA Guidelines*), the alternatives discussion in Chapter 5.0 describes a reasonable range of alternatives that could feasibly attain the basic objectives of the proposed project and are capable of eliminating or substantially reducing any of the proposed project's significant adverse environmental effects or reducing them to a less than significant level. The alternatives analyzed in Chapter 5.0 include the No Project Alternative, Areas of Change Reduction/Reduced Project Alternative, Reduced Vehicle Miles Traveled (VMT) Alternative/Transit-Oriented Alternative, and the Neighborhood-Serving Centers and Corridors Commercial-Only Alternative.

2.4.6 Chapter 6.0: Long-Term Implications of the Project

Chapter 6.0 includes CEQA-mandated discussions on the following topics as required by Section 15126 of the *State CEQA Guidelines*: (1) significant irreversible environmental changes that would result from implementation of the proposed project; (2) significant adverse environmental impacts for which either no mitigation or only partial mitigation is feasible, and (3) growth-inducing impacts of the proposed project.

2.4.7 Chapter 7.0: Mitigation Monitoring and Reporting Program

Section 15097 of the *State CEQA Guidelines* and PRC, Section 21081.6, requires that agencies adopt a mitigation monitoring and reporting program for any project for which it had made findings pursuant to PRC Section 21081. Chapter 7.0 provides a list of all proposed project mitigation measures and applicable performance standards, defines the parties responsible for implementation and review/approval, and identifies the timing for implementation of each control measure.

2.4.8 Chapter 8.0: Significant Unavoidable Impacts

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

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

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

2.4.10 Chapter 11.0: References and Chapter 12.0: List of Acronyms

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

2.5 INCORPORATION BY REFERENCE

As permitted in Section 15150 of the *State CEQA Guidelines*, a Draft EIR may reference all or portions of another document that is a matter of public record or is generally available to the public. Informational details from the documents that have been incorporated by reference are summarized in the appropriate sections of this, along with descriptions regarding how the public may review these documents. These documents include:

- City of Long Beach General Plan Elements (as amended) (Website: http://www.lbds.info/planning/advance_planning/general_plan.asp)
- City of Long Beach Municipal Code and other titles referenced herein (Website: https://www.municode.com/library/ca/long_beach/codes/municipal_code?nodeId=16115)

- Proposed Long Beach General Plan Land Use and Urban Design Elements (August 2016) (Appendix F) and also available at:

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

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3.0 PROJECT DESCRIPTION

This Draft Environmental Impact Report (EIR) has been prepared to evaluate the environmental impacts that may result from implementation of the proposed General Plan Land Use and Urban Design Elements Project (proposed project). As Lead Agency, the City of Long Beach (City) has the authority for preparation of this Draft EIR and, after the comment/response process, certification of the Final EIR and approval of the proposed project as described in this Draft EIR. The City and Responsible Agencies have the authority to make decisions on discretionary actions related to the approval of the proposed project. This Draft EIR will serve as a Program EIR pursuant to the *State California Environmental Quality Act (CEQA) Guidelines,* Section 15168. A Program EIR is appropriate for a series of related actions that can be characterized as one large project. This Draft EIR is intended to serve as an informational document to be considered by the City and the Responsible Agencies during deliberations on the proposed project. This Draft EIR evaluates for a reasonable worst-case scenario of potential environmental impacts associated with the proposed project and provides mitigation where necessary. The analysis in this Draft EIR is based on the General Plan Land Use Element and the General Plan Urban Design Element (City of Long Beach, August 2016) (Appendix F).

3.1 PROJECT LOCATION AND SETTING

As illustrated by Figure 3.1, Project Location, the planning area includes the entire 50 square miles within the limits of the City of Long Beach (excluding the City of Signal Hill, which is completely surrounded by the City of Long Beach) in Los Angeles County (County), California. The City is bordered on the west by the Cities of Carson and Los Angeles (including Wilmington and the Port of Los Angeles); on the north by the Cities of Compton, Paramount, and Bellflower; and on the east by the Cities of Lakewood, Hawaiian Gardens, Cypress, Los Alamitos, and Seal Beach. The City is also bordered by the unincorporated communities of Rancho Dominguez to the north and Rossmoor to the east. The Pacific Ocean borders the southern portion of the City, and as such, portions of the City are located within the California Coastal Zone.

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

A variety of transit routes maintained by the Metropolitan Transportation Authority (Metro), the Long Beach Transit, and the Orange County Transportation Authority (OCTA) also provide both regional and local access to and within the City. The City is also served by a variety of bicycle lanes and paths

including regional connections along PCH (SR-1), the San Gabriel River pathway, and the Los Angeles River pathway.

3.2 COMMUNITY PROFILE

3.2.1 Historical Perspective

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

3.2.2 Long Beach Today

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

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

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

3.2.3 Long Beach's Vision for the Future

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

3.3 LONG BEACH GENERAL PLAN

The Long Beach General Plan represents a comprehensive approach for managing the community's future. The Long Beach General Plan also reflects the City's long-term strategy for directing physical, economic, and cultural development. The General Plan is a legally binding policy document intended to serve as a guide by City officials, developers, and the community when making decisions regarding future development and the management of land and natural resources.

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

3.3.1 State General Plan Requirements

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

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

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

3.3.2 General Plan Consistency

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

1. **Equal Status among General Plan Elements.** All elements of a General Plan have equal status and no one General Plan element takes precedence over any other. As such, the General Plan elements must be consistent in order to avoid potential conflicts between or among the elements.
2. **Consistency between Elements and within Individual Elements.** All General Plan elements must be consistent with each other. For example, policies and implementation strategies outlined in one element must not require or encourage an action that would be prohibited or discouraged by policies and implementation strategies in another General Plan element.
3. **General Plan Text, Diagram, and Map Consistency.** Text, diagrams, and maps must be consistent with one another and with goals and policies outlined in all elements of the General Plan.

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

3.3.3 Comprehensive Nature of the General Plan

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

3.4 PROJECT HISTORY

Over the last century, the City has evolved from a suburban town to a thriving metropolis. The City has continued to grow as a result of changes to the fiscal and natural environments. In order to allow for increased flexibility in responding to such changes, the City proposes to update and replace the existing 1989 Land Use Element with a new LUE. The decision to update and replace its LUE was made in part to guide physical development in the City based on the projected population increases through the year 2040; to allocate financial resources for necessary community services and infrastructure maintenance; to sustain a diverse and competitive local economy; to encourage sustainable development; to retain the character of existing residential neighborhoods; to provide a greater variety in housing, mobility, and lifestyle choices; to improve the health of City residents through urban planning approaches; and to respond to changing technologies.

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

3.4.1 Community Outreach

In addition to the public scoping meeting held at the Long Beach Gas & Oil Department at 2400 East Spring Street on Wednesday, May 27, 2015, three Planning Commission Study Sessions were held on May 27, 2015; June 4, 2015; July 2, 2015; and October 1, 2015, at the City Council Chambers. These meetings were open to the public for the opportunity to learn more about the City's vision for future land use and urban design in Long Beach. The public was invited to provide input on the proposed LUE and the UDE. No formal action was taken at these meetings. These study sessions included discussions regarding building heights and transitions between PlaceTypes, enhancing existing developments already underway in the City, and maximizing usable open space in new development projects. The public and the City's Planning Commission also discussed urban design topics, such as Crime Prevention Through Environmental Design (CDTED), water-efficient landscaping, and the creation of attractive and iconic entryways into the City.

3.5 PROPOSED PROJECT

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

3.5.1 Land Use Element

At the heart of the City's General Plan is the LUE, which serves as a roadmap directing the long-term physical development of the City. As required by Section 65302 of the California Government Code, the LUE is one of the primary required elements of a community's General Plan. The emphasis of the LUE is on the desired use of land within a community, including future development in the City.

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

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

The proposed updated LUE would introduce the concept of "PlaceTypes," which would replace the current approach in the existing LUE of segregating property within the City through traditional land uses designations and zoning classifications. Refer to Figure 3.2, General Plan Land Use Designations, for an illustration of the City's existing General Plan Land Use Map. The updated LUE would establish 14 primary PlaceTypes that would divide the City into distinct neighborhoods, thus allowing for greater flexibility and a mix of compatible land uses within these areas (refer to Figure 3.3, Proposed PlaceTypes). While the text of the LUE notes 11 PlaceTypes, this EIR and the

impact analyses contained therein refers to a total of 14 PlaceTypes in order to acknowledge the varying intensities (i.e., Low and Moderate) within certain PlaceTypes. Each PlaceType would be defined by unique land use, form, and character-defining goals, policies, and implementation strategies tailored specifically to the particular application of that PlaceType within the City. The proposed 14 PlaceTypes illustrated on Figure 3.3 are listed and briefly summarized below.

1. **Open Space.** The Open Space PlaceType aims to promote and conserve the physical health of the City's residents through the provision of natural environments, which include recreational open space; scenic, natural, or cultural features; and utilities and/or infrastructure with environmentally sensitive resources. Allowable uses within this PlaceType include parks, beaches, golf courses, marinas, flood control channels and basins, rivers, utility rights-of-way, oil islands, inland bodies of water, nature preserves, marine habitats, estuaries, wetlands, lagoons, and limited commercial recreation uses that support existing programs and facilities. By establishing this PlaceType, the City hopes to preserve land and water areas that are undeveloped for use as passive/active recreational uses, conservation purposes, historic or scenic purposes, or visual relief from areas characterized by urban development. The maximum height of support structures allowed under this PlaceType is 2 stories [28 feet (ft)].

2. **Founding and Contemporary Neighborhood.** The Founding and Contemporary Neighborhood PlaceType represents the City's low-density residential neighborhoods, from older street car urban neighborhoods (Founding Neighborhoods) to post-World War II suburban housing (Contemporary Neighborhoods), which are predominantly characterized by single-family uses separated by large commercial centers. The purpose of this PlaceType is to preserve older urban neighborhoods and historic districts within the City that contain a mix of land uses and housing types, while simultaneously promoting new infill development in the form of residential single- and multi-family uses and neighborhood-serving commercial uses. As such, the establishment of this PlaceType would create transition areas within the City between single-family neighborhoods, neighborhood edges, and key intersections. This PlaceType would also encourage neighborhood enhancements aimed at increasing mobility (e.g., bikeway and pedestrian connections), visual improvements (e.g., façade improvements), and sustainability improvements (e.g., transit improvements to reduce vehicular emissions). Allowable uses within this PlaceType include single-family low-density housing and neighborhood-serving commercial uses. The maximum density, intensity, and height allowed under this PlaceType are 7 to 18 dwelling units per acre (du/ac), 0.25 to 0.50 floor-to-area ratio (FAR), and 2 stories (28 ft) (varies by area), respectively.

3 & 4. **Multi-Family Residential—Low and Moderate.** The Multi-Family Residential PlaceType aims to provide a variety of housing options (i.e., condominium duplex, triplex, and garden apartment uses) adjacent to neighborhood-serving commercial uses to meet the range of lifestyles of the City's community members. This PlaceType would be scattered throughout the City and is intended to be utilized as a buffer use between less intense and more intense residential neighborhoods. The Multi-Family Residential PlaceTypes also are intended to be pedestrian-oriented and would mostly be located in areas with bus and light rail services. The maximum density, intensity, and height allowed under the Multi-Family Residential-Low PlaceType are as follows: 3 dwelling units per lot (du/lot) or the equivalent of 29 du/ac on lots equal to or larger than 120 ft; 0.25 to 0.50 FAR, and 2 to

3 stories (38 ft), respectively. The maximum density, intensity, and height allowed under the Multi-Family Residential-Moderate PlaceType are as follows: 3 du/lot or the equivalent of 48 du/ac on lots larger than or equal to 120 ft in width, or 62 du/ac on lots 120 to 180 ft in width; 0.50 to 0.75 FAR; and 2 to 6 stories (65 ft), respectively.

5. & 6. **Neighborhood-Serving Centers and Corridors—Low and Moderate.** Commercial corridors and centers are located throughout the City. As such, the Neighborhood-Serving Centers and Corridors PlaceType aims to locate low- to moderate- intensity mixed-uses (i.e., residential/retail) near these areas in an effort to provide goods and services near housing. The intention of this PlaceType is to strengthen the identity of those neighborhoods surrounding commercial corridors and centers, to enhance pedestrian and bicycle connections, and to provide community gathering places. Allowable uses within this PlaceType include low- and moderate- intensity residential and commercial uses. The maximum density, intensity, and height allowed under the Neighborhood-Serving Centers and Corridors-Low PlaceType are as follows: 6 du/lot or the equivalent of 44 du/ac, 0.50 to 1.00 FAR, and 3 stories (38 ft), respectively. The maximum density, intensity, and height allowed under the Neighborhood-Serving Centers and Corridors-Moderate PlaceType are as follows: 9 du/lot or the equivalent of 54 du/ac, 1.00 to 1.50 FAR, and 7 stories, respectively.

7. & 8. **Transit-Oriented Development-Low and Moderate.** The City is currently served by bus, shuttle, and other transit services. In particular, the Metro Blue Line light rail has a significant presence along Long Beach Boulevard and the City's Downtown area. As such, the Transit-Oriented Development PlaceType aims to provide multi-family residential uses near areas adjacent to the Metro Blue Line in an effort to establish regional transit connections and promote transit use in the City. The Transit-Oriented PlaceType would also encourage the continuation of mixed-uses (residential and community-serving commercial uses) at a higher intensity to promote a pedestrian-friendly, active streetscape. Although this PlaceType has specifically been concentrated near Metro Blue Line stations, this PlaceType could also be applicable to areas containing future transit systems in the City. Allowable uses within this PlaceType include moderate urban density apartment and condominium uses and moderate-intensity commercial uses. The maximum intensity and height allowed under the Transit Oriented Development- Low PlaceType is 1.50 to 3.00 FAR and 5 stories (65 ft) (consistent with Midtown Specific Plan), respectively. The maximum intensity allowed under the Transit Oriented Development-Moderate PlaceType is 2.00 to 4.00 FAR. There is no height limit under the Transit Oriented Development-Moderate PlaceType.

9. **Community Commercial.** Although the aforementioned PlaceTypes emphasize the City's transition to allow for more mixed-uses, the City is also aware of the community's need for auto-oriented goods and services. As such, the Community Commercial PlaceType emphasizes this need by allowing for auto-oriented commercial development along primary arterials in the City, with residential uses strictly prohibited. It is important to note that while this PlaceType would accommodate auto-oriented commercial uses, these areas would be designed to be consistent with any surrounding neighborhood developments and would also be served, where possible, by transit stops to encourage alternative modes of transportation. Allowable uses within this PlaceType include commercial uses that serve community-based needs for goods and services. The maximum intensity and height

allowed under the Community Commercial PlaceType is 2.00 to 4.00 FAR and 2 to 6 stories (65 ft), respectively.

10. **Industrial.** The Industrial PlaceType would allow for light industrial research parks, warehousing or storage activities, industrial manufacturing, and machining operations in areas generally separated from residential uses. The intention of this PlaceType is to preserve and protect industrial lands in the City and generally discourage the conversion of these lands to non-industrial uses. Allowable uses within this PlaceType include research and development activities, storage, industrial, and manufacturing activities, tank farms, and oil-drilling activities. Non-industrial uses, with the exception of on-site caretaker units and commercial accessory units required to serve the Industrial PlaceType, are strictly prohibited within this PlaceType. The maximum height allowed under Industrial PlaceType is 4 stories (65 ft).

11. **Neo-Industrial.** The Neo-Industrial PlaceType encourages light industrial activities, particularly those related to innovative start-up businesses and creative design offices in the arts, engineering, sciences, technology, media, education, and information industries. As permitted by the updated LUE, office uses may comprise 50 percent of the uses within this PlaceType. It should be noted that limited retail and live/work uses that support the Neo Industrial uses are also allowed within this PlaceType. It is the intent of the City that by establishing this PlaceType, innovative and small incubator businesses would co-locate and form symbiotic relationships with other small businesses in the area. Allowable uses within this PlaceType include light industrial, clean manufacturing, offices, commercial uses to support business endeavors, and repurposed buildings with live/work artist studios. Neo Industrial PlaceTypes would generally be located in areas above Market Street in North Long Beach, the Zafaria area on Anaheim Street and Obispo Avenue, and the Magnolia Industrial Group area located between Anaheim Street and PCH west of Magnolia Avenue. The maximum density, intensity, and height allowed under the Neo Industrial PlaceType is 6 du/lot or the equivalent of 36 du/ac, 0.50 to 1.00 FAR, and 3 stories (60 ft), respectively.

12. **Regional-Serving Facility.** Due to its size and location between the City of Los Angeles and the County of Orange, the City of Long Beach is home to a variety of regional-serving facilities that serve the sub-region and region. Primary examples of these facilities include, but are not limited to, the following: medical centers; the Port of Long Beach; Long Beach City College; the Long Beach Airport; California State University Long Beach; the Department of Motor Vehicles; the City's Health Department; and Ability First (provides programs for children and adults with disabilities or special needs). Allowable uses within this PlaceType include medical centers, higher education campuses, port services, airport uses, regional destination retail centers (i.e., Douglas Park) and recreation uses, public facilities, and the Southeast Area Development Improvement Plan (SEADIP) area. The SEADIP area, which is comprised of 1,500 acres and includes five commercial areas and the Marina Pacifica condominium complex, is targeted as an area with new opportunities for pedestrian-oriented development and the revitalization of the Los Cerritos Wetlands. The City is currently updating the SEADIP in an effort to encourage responsible growth while balancing resource preservation in this area of southeast Long Beach. These existing regional-serving facilities generally consist of large properties within the City and are generally disjointed from other regional-serving facilities within the City. As such, the Regional-Serving Facility PlaceType would increase connectivity between these other facilities to foster their growth and economic vitality. The height limitations vary by the

facility proposed for the Regional-Serving PlaceType designation. For example, the height limitations in areas near the Long Beach Airport are lower than in other areas due to height standards established by the Federal Aviation Administration [FAA]).

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

14. **Waterfront.** The Waterfront PlaceType includes three primary areas along the City's shoreline, including the Downtown Shoreline waterfront, Alamitos Bay Marina, and the Belmont Pier and Pool Complex area. Specifically, the Waterfront PlaceType would encourage high-intensity, compact, and diverse uses (e.g., housing, offices, hotels, and tourism attractions) in the Downtown Shoreline Area (e.g., the Queen Mary and the Long Beach Aquarium of the Pacific). The Belmont Pier and Pool Complex area is specifically targeted as an area with significant opportunities for improvements that would revitalize this area and improve recreational opportunities for residents and visitors to the City utilizing the Belmont Pool Complex.[1] It is the City's stated vision in the updated LUE that these Waterfront PlaceTypes should be characterized by mixed-uses, and because of the location of this PlaceType adjacent to waterways, the LUE calls for pedestrian-oriented development to decrease environmental impacts and the creation of recreation uses to allow visitors to access waterways within the Waterfront PlaceType. In addition, future development within both the Waterfront PlaceType and the California Coastal Zone would be subject to the goals, policies, and strategies established in the updated LUE and would be required to comply with the City's LCP, which regulates land use in areas within the California Coastal Zone. The height limitations proposed for this PlaceType designation vary by area. For example, in waterfront areas near the City's Downtown area, height limitations reach up to 600 ft, whereas in waterfront areas further east along the City's coastline, height limitations are set at 3 stories.

Overall, the proposed LUE would allow for a greater mix of land uses throughout the City. The proposed project would promote residential and mixed-use PlaceTypes within existing neighborhoods in the North Long Beach area; would consolidate commercial activities along major arterials, encourage infill housing, convert industrial activities to commercial uses, and create recreation and green areas in the Bixby Knolls area; would enhance the Westside and Wrigley area by consolidating commercial activities along major arterials, creating open space buffers between industrial activities and surrounding neighborhoods, creating green and open space areas along the Los Angeles River, and implementing a variety of mobility improvements (e.g., creating bicycle paths, pedestrian

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

bridges, and intersection improvements); and would encourage multi-family housing in areas served by public transit, improve streetscapes to improve walkability, create additional recreation and open space areas, and improve pedestrian and bicycle facilities to increase connectivity in the Eastside area of the City.

Table 3.A, PlaceType Densities, Intensities and Heights, summarizes the residential densities, non-residential intensities, and maximum building heights allowed within the proposed PlaceTypes. The allowable heights proposed for each PlaceType are also illustrated in Figure 3.4, PlaceType Height Limitations.

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

PlaceType	Residential Density (du/acre)	Non-Residential Intensity (FAR)[1]	Height
Open Space	N/A	See Open Space and Recreational Element of the General Plan	2 stories, 28 ft
Founding and Contemporary Neighborhood[2]	7–18	0.25 to 0.50	2 stories, 28 ft; varies by area
Multi-Family Residential:			
Low	3/du/lot; lots =>120 ft wide: 29 du/ac	0.25 to 0.50	3 stories, 38 ft
Moderate	3/du/lot; lots =>120 ft wide: 48 du/ac; Lots=>180 ft wide: 62 du/ac	0.50 to 0.75	6 stories, 65 ft
Neighborhood-Serving Centers and Corridors:			3 stories, 38 ft
Low	6 du/lot, 44 du/ac	0.50 to 1.00	
Moderate	9 du/lot, 54 du/ac	1.00 to 1.50	7 stories
Transit-Oriented Development Low	N/A	1.50 to 3.00	5 stories, 65 ft (consistent with Midtown Specific Plan)
Moderate	N/A	2.00 to 4.00	No height limit
Community Commercial	N/A	2.00 to 4.00	2 to 6 stories (65 ft)
Industrial	N/A	N/A	4 stories, 65 ft
Neo-Industrial	6 du/lot, 36 du/ac	0.50 to 1.00	3 stories, 60 ft
Regional-Serving Facility	N/A	N/A	Approx. 28 to 150 feet, See Figure 3.4, PlaceType Heights
Downtown (See Downtown Plan)	Regulated through FAR and height	Regulated through FAR and height	Approx. 38 to 240 ft, See Downtown Plan,
Waterfront	Varies by area; see descriptions.	Varies by area; see descriptions.	Approx. 35 to 600 feet, Varies by area

Source: Proposed Long Beach General Plan Land Use Element (August 2016) (Appendix F).
[1] FAR refers to the floor area of all principal and accessory buildings on a site to the total size of the land on which it is developed.
[2] Height may be increased to 3 stories consistent with the existing land use pattern. See Figure 3.4 (PlaceType Height Limitations) for maximum height.
du/ac = dwelling unit per acre
du/lot = dwelling unit per lot
FAR = floor-to-area ratio
ft = foot/feet
N/A = not applicable

Overview of the Land Use Element

The project proposes to update the current General Plan LUE with a new LUE that would reflect the current needs and opportunities within the City, update land uses and bring the General Plan into conformity with the City's recently adopted General Plan Mobility Element (October 2013), and provide for future development opportunities that would accommodate projected growth and housing needs established in the City's General Plan 2013–2021 Housing Element.

Major land use changes proposed as part of the LUE are identified as Major Areas of Change, and are illustrated on Figure 3.5, Major Areas of Change. As illustrated by this figure and described further below, there are eight primary areas where changes associated with the updated LUE would be focused.

- The first Major Area of Change involves the creation of more open space throughout the City. Areas targeted for the establishment of the Open Space PlaceType include small pockets of land along the Los Angeles River, two strips of land along State Route 103 (SR-103) and an abandoned railroad in the northern area of the City, a large portion of the SEADIP area, and pockets of land scattered throughout the City.
- The second Major Area of Change proposes to buffer industrial activities from existing neighborhoods by encouraging the conversion of some industrial uses to Neo Industrial uses. Areas targeted for the establishment of the Neo-Industrial PlaceType include existing industrial areas in the northern portion of the City and a larger industrial area along the Los Angeles River, just north of the City's Downtown.
- The third Major Area of Change aims to promote Regional-Serving Uses by maintaining existing regional-serving facilities throughout the City.
- The fourth Major Area of Change proposes to provide land use transitions from commercial to industrial uses in small areas in the northern portion of the City and in the area directly east of the Long Beach Airport.
- The fifth Major Area of Change aims to promote transit-oriented development along Long Beach Boulevard as part of a larger City-wide effort to reduce automobile dependence in the City.
- The sixth Major Area of Change aims to continue development in the Downtown area.
- The seventh Major Area of Change aims to promote infill and redevelopment to support transit along Redondo Avenue and Cherry Avenue and near the Traffic Circle.
- The eighth Major Area of Change aims to redevelop sites within the City to their "highest and best use." The sites targeted for redevelopment are located within the SEADIP area, in the southeastern portion of the City.

In total, the LUE proposes changes to approximately 13 percent of the land area (or the equivalent of 4,180 acres) in the City. The identification of these Major Areas of Change reflects the City's desire to address land use issues within these areas of the City.

In establishing PlaceTypes and focusing new development within the Major Areas of Change, the proposed LUE takes into account existing land use patterns in the City and the demand for new land uses and increased densities to accommodate the projected population growth (refer to Table 3.B, Project Buildout Summary, and Section 4.6, Population and Housing, for further information related

to population growth). The proposed LUE also considers the location of undeveloped or underutilized parcels that are best suited for future development and accounts for which types of land uses and infrastructure would be required to serve new development facilitated by the new PlaceType categories. It is important to note that while the proposed LUE would provide for new development opportunities, it would not cause development to occur. Rather, the proposed LUE recognizes that ultimately growth and development depend on the initiative of individual developers.

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

3.5.2 Urban Design Element

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

The UDE would define the physical aspects of the urban environment. Specifically, the UDE aims to further enhance the City's PlaceTypes established in the LUE by creating great places; improving the urban fabric, and public spaces; and defining edges, thoroughfares, and corridors (see Figures 3.6.a and 3.6.b, Urban Design Principles in Commercial and Residential Areas, respectively). It is the City's intention that creating great places would provide gathering spaces for community members to meet and provide a space for spontaneous activities to occur. By improving the urban fabric, the City would allow for new development that would complement the existing historical development while serving as a unique and distinctive feature of the City.

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

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

Overview of the Urban Design Element

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

General Plan Build Out

The build-out projections associated with approval of the proposed LUE (listed below) are used throughout this Draft EIR to estimate the maximum development that would occur following approval and implementation of the proposed project through horizon year 2040 compared to existing 2012 conditions. It should be noted that data for year 2012 was utilized to represent existing conditions as 2012 is the most current year for which SCAG and the Department of Finance (DOF) have information related to population, housing, and employment for the City of Long Beach.

As illustrated by Table 3.B, Project Buildout Summary, compared to existing conditions, the proposed LUE would allow for a population increase of 51,230 persons (SCAG projects an increase of 18,200 persons), an employment increase of 28,511 (SCAG projects an increase of 28,500 jobs), and a net increase of 11,744 units (SCAG projects an increase of 11,700 units) by the year 2040**.** More specifically, as illustrated by Tables 3.B through 3.D, the proposed project would allow for an increase in 664 and 11,080 single family and multi-family and an increase of 15,093,000 sf of non-residential uses. These projected increases in housing units, population, and employment are consistent with growth projections included in the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) developed by SCAG for the region. Refer to Section, 4.6, Population and Housing, for further details.

3.6 PROJECT CHARACTERISTICS

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

- Type of use and number of units/square footage
- Circulation plan and number of parking spaces

Table 3.B: Project Buildout Summary

PlaceTypes	Housing Units			Population			Employment		
	2012	2040	Δ	2012	2040	Δ	2012	2040	Δ
Open Space	0	0	0	0	0	0	11,993	14,454	2,461
Founding and Contemporary Neighborhood	104,019	110,834	6,815	302,902	313,465	39,863	39,075	47,460	8,385
Multi-Family – Low	7,326	7,818	492	17,734	18,487	753	288	433	145
Multi-Family – Moderate	12,124	13,305	1,181	32,132	33,966	4,924	0	0	0
Neighborhood Serving Centers and Corridors – Low	5,216	5,572	356	14,956	15,493	537	5,433	6,956	1,523
Neighborhood Serving Centers and Corridors – Moderate	9,538	10,251	713	25,711	26,832	1,121	6,149	7,297	1,148
Community Commercial	2,922	3,132	210	8,970	9,319	349	12,670	16,477	3,807
Transit-Oriented Development-Low	2,741	3,121	380	10,255	10,854	539	3,459	4,392	933
Transit-Oriented Development-Moderate	1,955	2,226	271	7,347	7,741	384	2,467	3,133	666
Neo-Industrial	1,384	1,460	76	5,060	5,198	188	2,580	2,848	268
Industrial	958	991	33	3,496	3,571	75	7,193	7,733	540
Downtown	11,768	12,585	817	27,112	28,363	1,331	16,660	19,971	3,311
Waterfront	2,843	3,133	290	4,821	5,288	467	8,390	9,109	719
Regional Serving Facility	1,000	1,110	110	5,759	5,908	699	36,797	41,402	4,605
TOTAL	**163,794**	**175,538**	**11,744**	**466,255**	**484,485**	**51,230**	**153,154**	**181,665**	**28,511**
SCAG Totals	**163,800**	**175,500**	**11,700**	**466,300**	**484,500**	**18,200**	**153,200**	**181,700**	**28,500**

Source: MIG (March 2016).
SCAG = Southern California Association of Governments

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

	Residential Units			Non-Residential Building Square Footage				
PlaceTypes	**Single Family**	**Multi-Family**	**Total**	**Commercial**	**Office**	**Industrial**	**Public Facilities/ Institutional**	**Total**
Open Space	-	-	-	678,900	37,300	1,101,000	3,137,900	4,955,100
Founding and Contemporary Neighborhood	60,524	43,495	104,019	4,803,100	709,900	653,900	8,780,700	14,947,600
Multi-Family – Low	611	6,715	7,326	42,800	2,100	-	63,500	108,400
Multi-Family – Moderate	411	11,713	12,124	-	-	-	-	-
Neighborhood Serving Centers and Corridors – Low	760	4,456	5,216	1,890,300	165,600	99,800	146,400	2,302,100
Neighborhood Serving Centers and Corridors – Moderate	486	9,052	9,538	2,121,500	262,700	169,600	87,000	2,640,800
Community Commercial	85	2,837	2,922	4,274,400	341,300	1,062,300	142,800	5,820,800
Transit-Oriented Development - Low	272	2,469	2,741	998,000	199,100	7,500	200,000	1,404,600
Transit-Oriented Development - Moderate	195	1,760	1,955	787,300	52,000	6,000	163,100	1,008,400
Neo-Industrial	88	1,296	1,384	383,900	14,200	1,311,900	19,100	1,729,100
Industrial	145	813	958	319,800	368,700	4,066,800	196,500	4,951,800
Downtown	345	11,423	11,768	1,954,200	3,899,300	49,400	600,800	6,503,700
Waterfront	6	2,837	2,843	2,086,900	772,200	-	501,700	3,360,800
Regional Serving Facility	6	994	1,000	674,500	1,160,000	9,042,800	7,434,500	18,311,800
2012 Total	**63,934**	**99,860**	**163,794**	**21,015,600**	**7,984,400**	**17,571,000**	**21,474,000**	**68,045,000**

Table 3.D: Housing Units and Non-Residential Square Footage: General Plan Buildout v. Existing (2012) Conditions

	Residential Units			Non-Residential Building Square Footage				
PlaceTypes	**Single Family**	**Multi-Family**	**Total**	**Commercial**	**Office**	**Industrial**	**Public Facilities/ Institutional**	**Total**
Open Space	-	-	-	782,200	29,300	144,000	4,325,400	5,280,900
Founding and Contemporary Neighborhood	59,898	50,936	110,834	5,388,800	902,900	407,100	11,158,100	17,856,900
Multi-Family – Low	719	7,099	7,818	60,300	2,800	-	99,200	162,300
Multi-Family – Moderate	856	12,449	13,305	-	-	-	-	-
Neighborhood Serving Centers and Corridors – Low	836	4,736	5,572	2,413,300	198,400	199,600	175,300	2,986,600
Neighborhood Serving Centers and Corridors – Moderate	711	9,540	10,251	2,435,700	290,100	368,900	120,000	3,214,700
Community Commercial	113	3,019	3,132	5,360,900	427,000	1,702,400	229,100	7,719,400
Transit-Oriented Development - Low	321	2,800	3,121	1,247,200	238,800	10,000	283,200	1,779,200
Transit-Oriented Development - Moderate	401	1,825	2,226	993,500	64,800	8,800	212,900	1,280,000
Neo-Industrial	54	1,406	1,460	364,700	14,200	1,575,200	17,700	1,971,800
Industrial	145	846	991	291,200	325,600	4,789,700	143,700	5,550,200
Downtown	530	12,055	12,585	2,439,400	4,564,400	89,100	729,000	7,821,900
Waterfront	7	3,126	3,133	2,125,200	898,000	-	605,700	3,628,900
Regional Serving Facility	6	1,104	1,110	581,700	1,021,200	15,945,800	6,336,500	23,885,200
2040 Total	**64,598**	**110,940**	**175,538**	**24,484,100**	**8,977,500**	**25,240,600**	**24,435,800**	**83,138,000**
2012 Total	**63,934**	**99,860**	**163,794**	**21,015,600**	**7,984,400**	**17,571,000**	**21,474,000**	**68,045,000**
Δ	**664**	**11,080**	**11,744**	**3,468,500**	**993,100**	**7,669,600**	**2,961,800**	**15,093,000**

Source: MIG (December 2015).

- Building design and finalized site plan
- Lighting and landscaping
- Project design features
- Conservation and sustainability features
- Phasing and construction information

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

3.7 PROJECT DESIGN FEATURES

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

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

- **Year 1:** Within the first 12 months following project approval, all Land Use Element/zoning inconsistencies shall be identified and mapped. The City shall evaluate these inconsistencies and prioritize areas needing intervention.
- **Year 2:** Following the identification and mapping of any zoning inconsistencies, the City shall, within 24 months following project approval, begin processing zone changes and zone text amendments, in batches, as required to ensure that the zoning code is consistent with the adopted LUE.
- **Year 3:** The City shall, within 36 months following project approval, begin drafting new zones, or begin preparation of a

comprehensive zoning code update, to better reflect the PlaceTypes identified in the adopted LUE.

- All zoning inconsistencies shall be resolved through mapping and zone text amendments by the end of the fifth year following project approval.

3.8 PROJECT OBJECTIVES

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

1. Promote livability, including environmental quality, community health and safety, the quality of the built environment, and economic vitality.
2. Accommodate strategic growth in the Downtown area, around regional-serving facilities, along major corridors, and in transit-oriented development areas; create and preserve open space; accommodate economic development by converting industrial areas to neo-industrial uses in appropriate locations, promote regional-serving uses, convert industrial uses to commercial uses in locations more suitable for commercial character, and revitalize the Waterfront areas.
3. Implement sustainable planning and development practices by creating compact new developments and walkable neighborhoods to minimize the City's contribution to greenhouse gas emissions (GHGs) and energy usage.
4. Create job growth allowing for new businesses while also maintaining and preserving existing employment opportunities at the City's regional facilities and employment centers. Promote increased employment opportunities for Long Beach residents at differing levels of educational and skill attainment.
5. Promote changes in land use and development that reflect changes in the regional economy. Promote land uses that transform now-vacant former employment centers into new sources of employment.
6. Meet the City's housing needs by diversifying housing opportunities through the provision of a variety of housing types and the provision of market-rate and affordable housing units.
7. Provide high-quality housing in a variety of forms, sizes, and densities to serve the diverse population of the City.
8. Preserve low-density neighborhoods while improving pedestrian, bicycle, and transit access in these areas.
9. Ensure fair and equitable land use by making planning decisions that would ensure the fair and equitable distribution of services, amenities, and investments throughout the City.
10. Provide reliable public facilities and infrastructure by expanding and maintaining the current infrastructure to serve new and existing developments in the City.
11. Increase access to green and open space through the creation of urban open spaces and greenscapes and providing for clean beaches, waterways, preserves, and parklands.

12. Restore and reconnect with local natural reserves through the utilization of clean energy, best management practices (BMPs), and current technologies.
13. Create "Great Places" places by improving the connectivity, the visual appearance of and development of public spaces; promote sustainable design practices; encourage design techniques that foster economic development; preserve historic districts and the unique character of each neighborhood; provide for public art; and expand the unified sign program to increase wayfinding within neighborhoods and PlaceTypes.
14. Improve the urban fabric by creating complete neighborhoods and community blocks, properly place and design new development to prevent visual and land use conflicts; promote compact urban and infill development, clearly define boundaries between natural and urbanized areas, preserve iconic buildings; and provide pedestrian furniture and wide sidewalks to create walkable blocks.
15. Preserve the City's natural features, open space, and parks throughout the City, while also providing new public spaces throughout the community, parks, and plazas at infill sites, and parklets along sidewalks.
16. Encourage building form and design to improve the interface between buildings and streets; develop areas along public sidewalks that promote streets as "public rooms;" design parking lots and access points to be pedestrian-friendly; provide buffers along streetscapes to buffer parking areas and promote walkability; provide bicycle infrastructure; establish safe transit infrastructure; and design streetscapes utilizing sustainable streetscape strategies.
17. Promote high-quality design of the built environment. Enhance visual interest, improve functionality and inspire pride through thoughtful design, high-quality materials and a diversity of architectural styles throughout neighborhoods and the entire City.

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

3.9 DISCRETIONARY ACTIONS, PERMITS, AND OTHER APPROVALS

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

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

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

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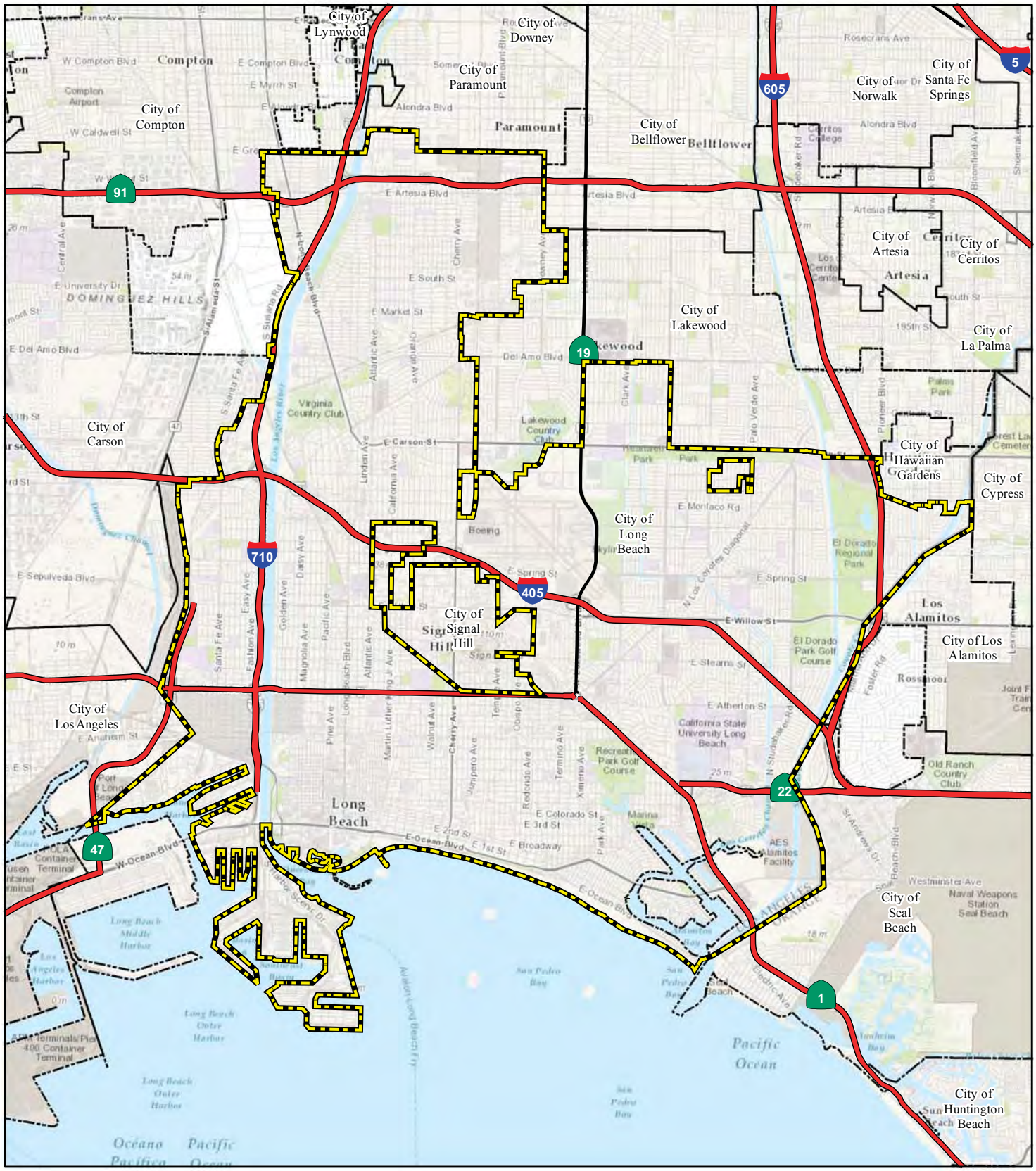

LSA

LEGEND

Project Area (City of Long Beach)

FIGURE 3.1

0 1 2
MILES

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

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Long Beach General Plan
Land Use and Urban Design Elements

Project Location

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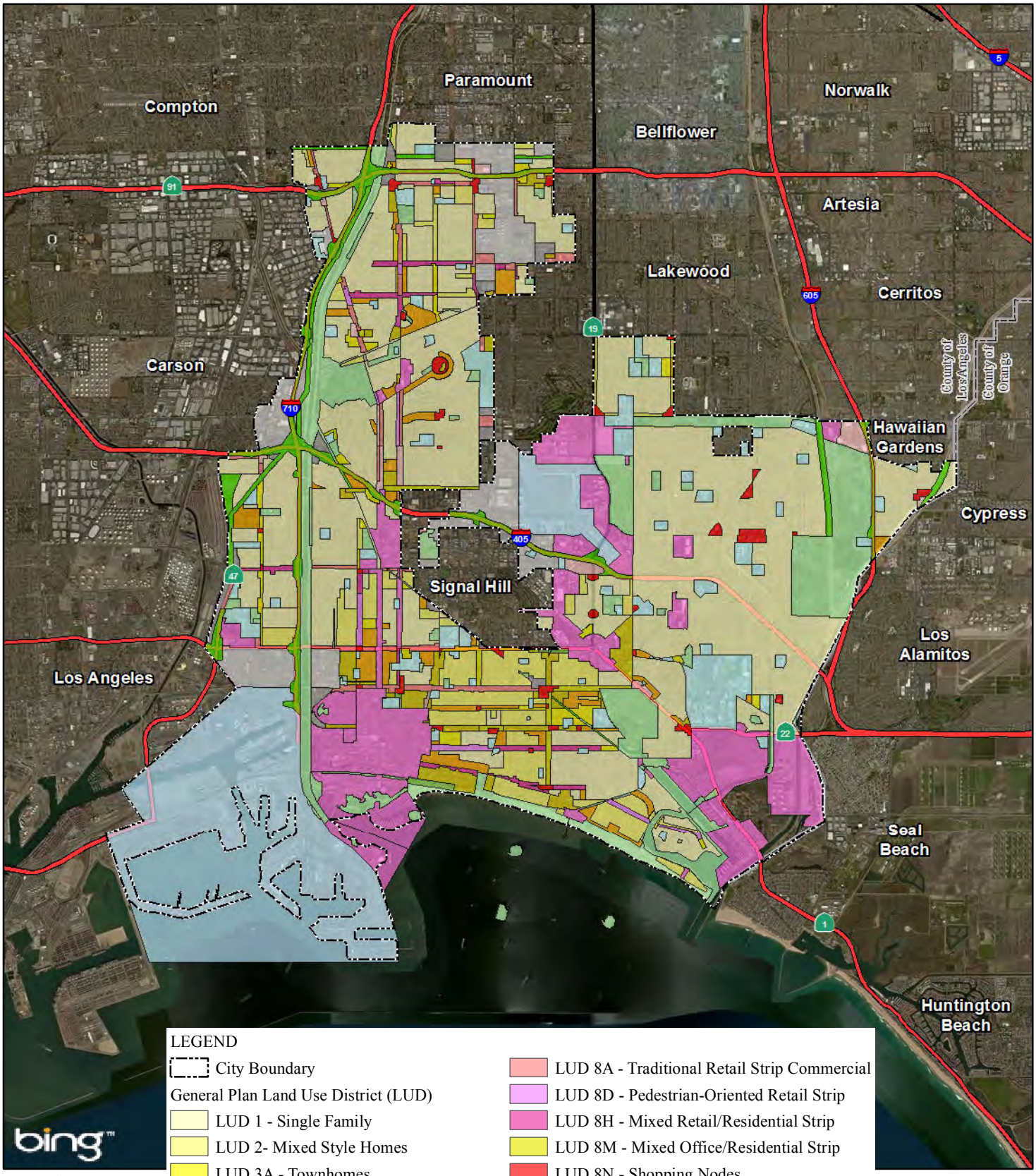

LEGEND

City Boundary

General Plan Land Use District (LUD)

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

LSA

FIGURE 3.2

N

0 4500 9000
FEET

Long Beach General Plan
Land Use and Urban Design Elements

General Plan Land Use Designations

SOURCE: Bing Maps (2013); City of Long Beach (2012)

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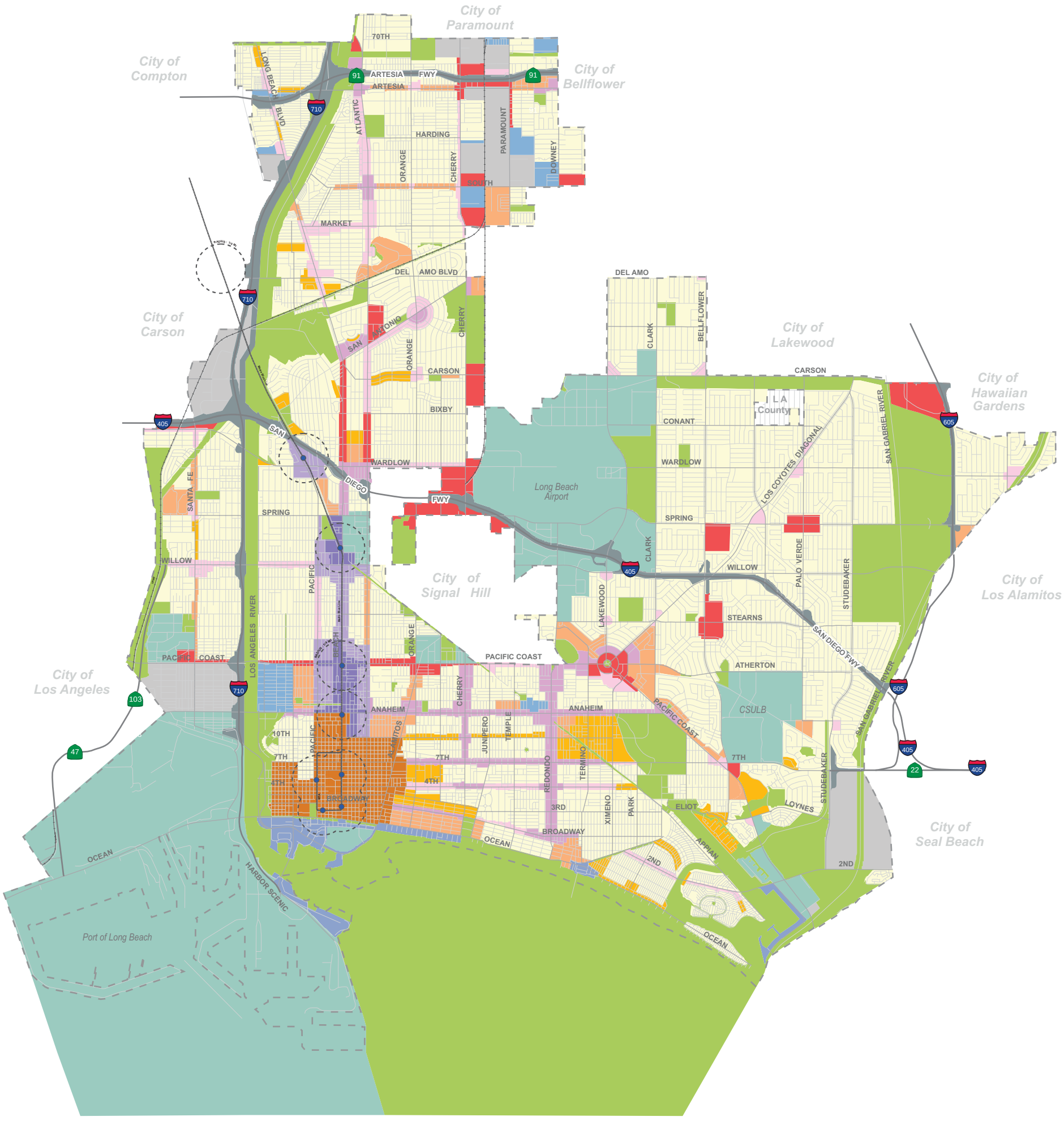

Legend

PlaceTypes

- OS - Open Space

Neighborhoods

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

Mixed Use

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

Employment

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

Unique

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

Light Rail Transit

- Metro Blue Line Station and 1/4 Mile Radius

LSA

FIGURE 3.3

N

0 .5 1
MILE

SOURCE: 2015 Long Beach General Plan Land Use Element

Long Beach General Plan
Land Use and Urban Design Elements

Proposed PlaceTypes Map

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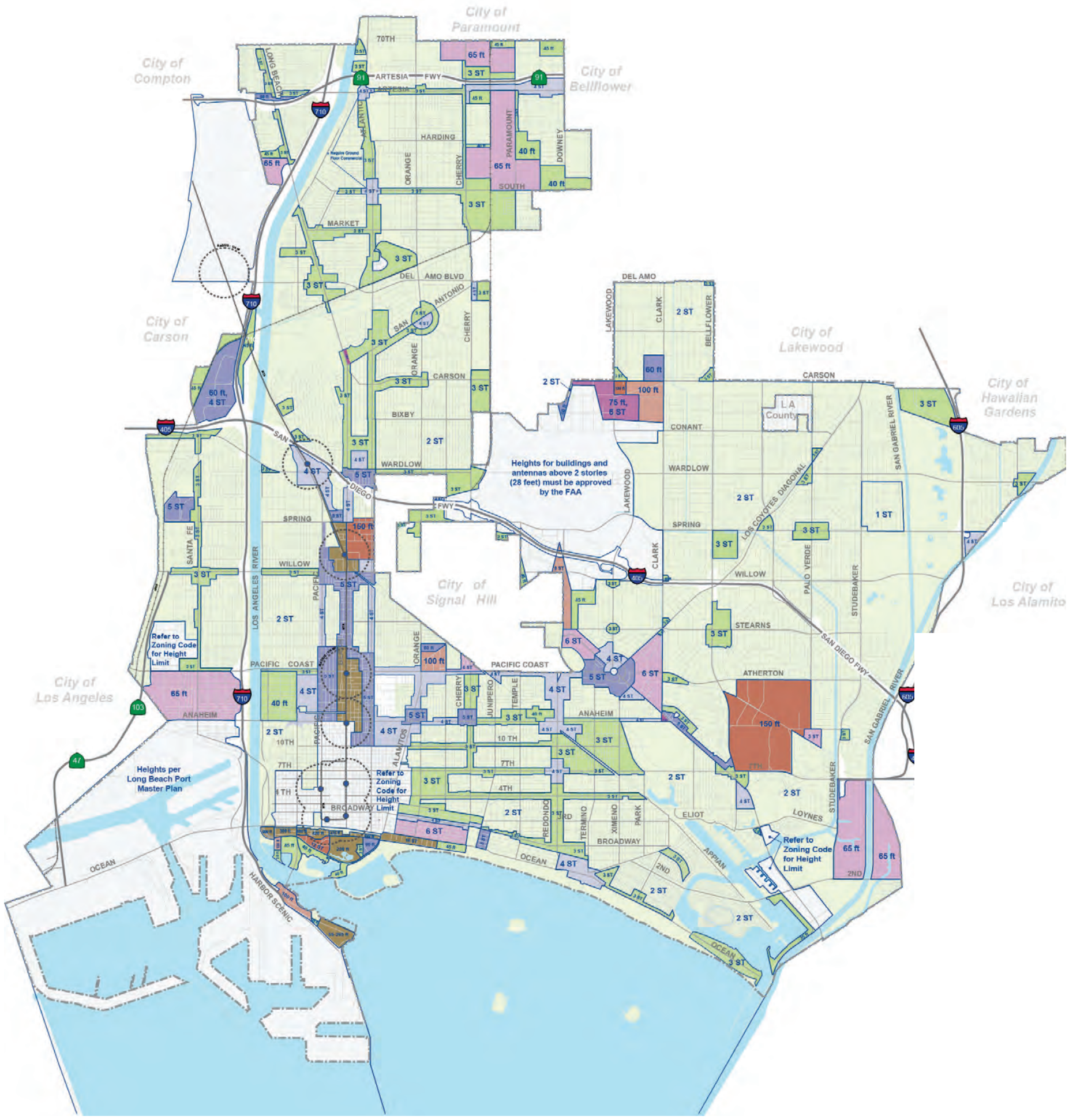

Legend

Building Heights

- 2 Stories
- 3 Stories
- 4 Stories
- 5 Stories
- 6 Stories
- 7 Stories
- 80 - 100 Feet
- 135 - 150 Feet
- 240 Feet and Over

Light Rail Transit

Metro Blue Line Station and 1/4 Mile Radius

LSA

FIGURE 3.4

N

0 .5 1
MILE

SOURCE: Proposed Land Use Element, City of Long Beach, June 2015

Long Beach General Plan
Land Use and Urban Design Elements

PlaceType Height Limitations

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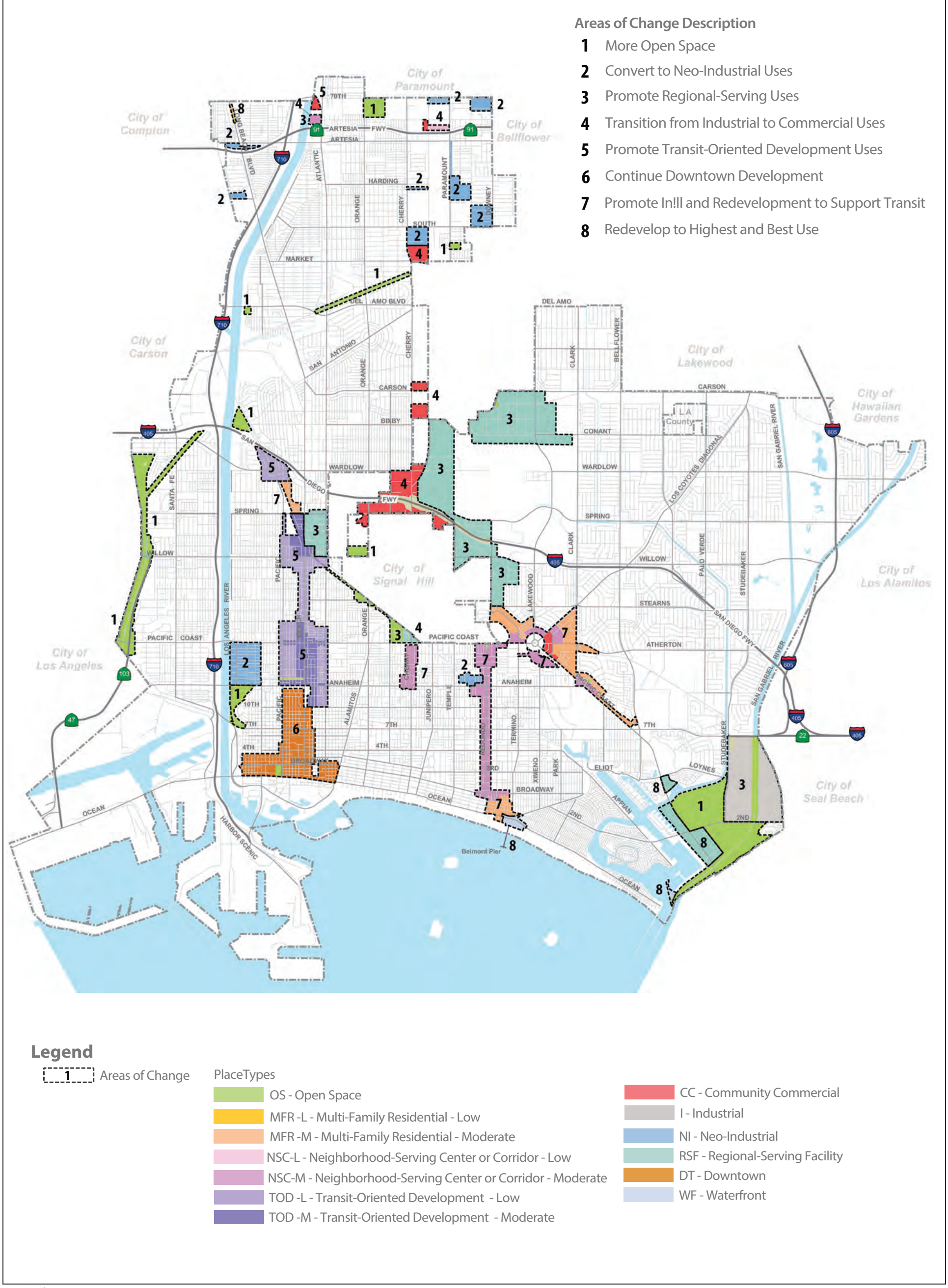

LSA

FIGURE 3.5

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MILE

SOURCE: Proposed Land Use Element, City of Long Beach, June 2015

Long Beach General Plan
Land Use and Urban Design Elements
Major Areas of Change

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

Bicycle and pedestrian facilities along waterfront areas.

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

LSA

FIGURE 3.6a

N

NOT TO SCALE

SOURCE: Proposed Urban Design Element, City of Long Beach, June2015

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Long Beach General Plan
Land Use and Urban Design Elements

Urban Design Principles in Commercial Areas

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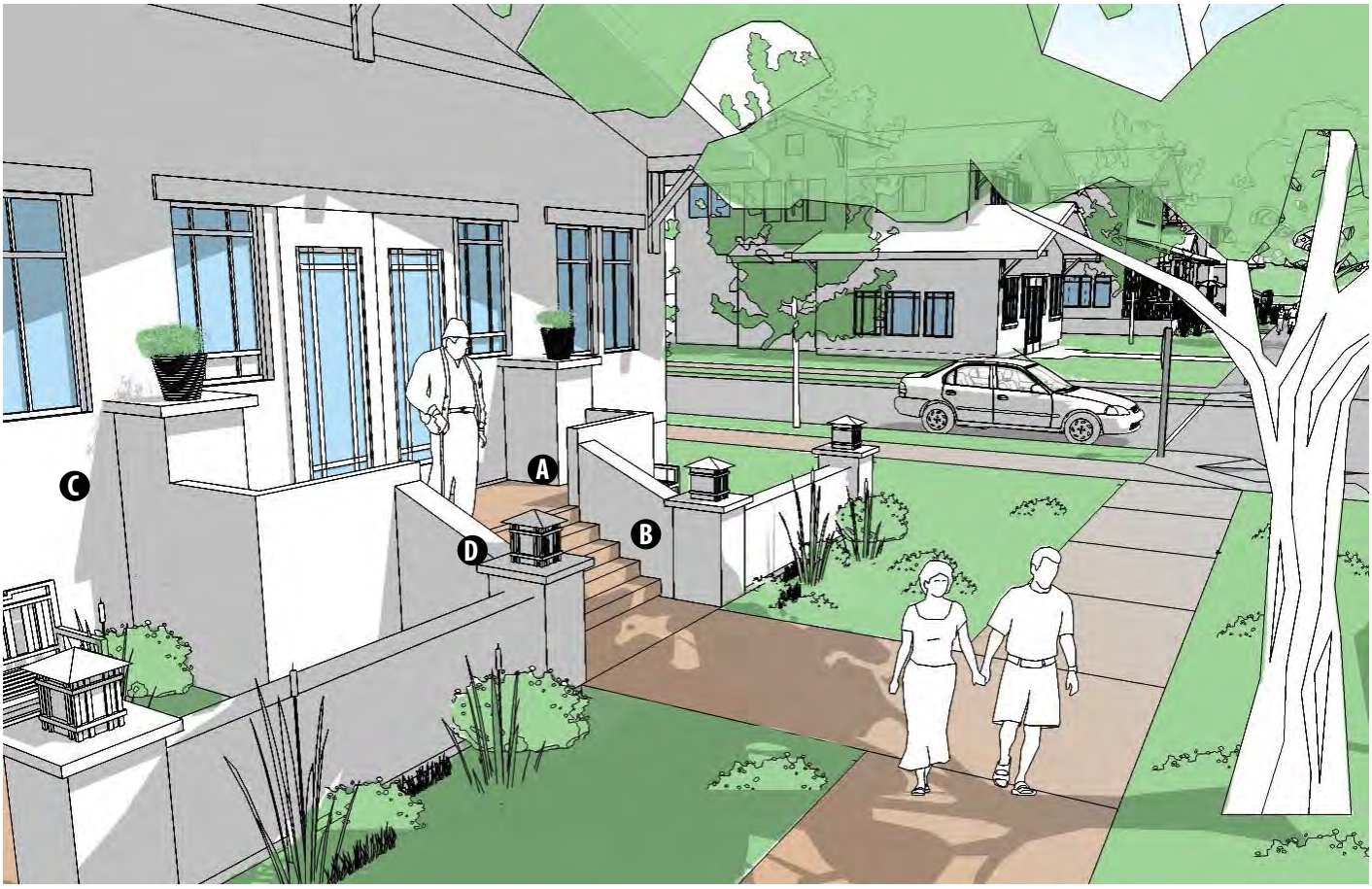

Example of stoop in residential area to promote transparency and vibrancy.

RECOMMENDATIONS FOR STOOPS

A Stoops are elevated entry porches and stairs are usually placed much closer to the property line than a porch.

B Stoops have an elevation change from the sidewalk to the ground floor that helps create transition and privacy.

C Stoops may be seen on single-family or attached housing product, and may or may not be covered by a roof.

D Stoops generally do not have livable extensions from the home, as porches do, and are rather platforms at a building's entrance.

LSA

FIGURE 3.6b
(Page 1 of 2)

N

NOT TO SCALE

SOURCE: Proposed Urban Design Element, City of Long Beach, June 2015

Long Beach General Plan
Land Use and Urban Design Elements
Urban Design Principles in Residential Areas

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Example of streets in residential area to promote safety, walkability, and improved character.

RECOMMENDATIONS

- **A** Provide bulbouts at intersections to keep crossing distances as short as possible, to increase landscape areas, and to slow traffic at intersections.
- **B** Incorporate bike route information on bike-friendly streets designated as Class III Bike Routes.
- **C** Revitalize landscape parkways with appropriate landscaping.
- **D** Flow-through planters in bulbouts treat stormwater run-off. Use bulbouts to help reduce traffic speed provide planters for additional street trees.
- **E** Incorporate pinchpoints where curb extensions may be applied mid-block to slow traffic.
- **F** Enhance the street corridor with consistent street tree planting.

LSA

FIGURE 3.6b
(Page 2 of 2)

N

NOT TO SCALE

SOURCE: Proposed Urban Design Element, City of Long Beach, June 2015

Long Beach General Plan
Land Use and Urban Design Elements
Urban Design Principles in Residential Areas

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

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

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

Each of the 11 sections is organized into subsections, as follows:

- **Introduction** briefly describes the topics and issues covered in the section.
- **Methodology** describes the approach and methods employed to complete the environmental analysis for the issue under investigation.
- **Existing Environmental Setting** describes the physical conditions that exist at the present time that may influence or affect the issue under investigation. This section focuses on physical site characteristics that are relevant to the environmental topic being analyzed.
- **Regulatory Setting** lists and discusses the laws, ordinances, regulations, and policies that relate to the specific environmental topic and how they apply to the proposed project.
- **Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies** lists the proposed strategies, policies, and implementation measures are applicable to the analysis of each topical section of the Draft EIR.
- **Thresholds of Significance** provides the thresholds that are the basis of the conclusions of significance, which are primarily the criteria in Appendix G of the *State CEQA Guidelines*.
- **Standard Conditions and Project Design Features:** Standard Conditions (SCs) are specific standards imposed by the approving agency and are required of the proposed project to reduce its potential environmental effects. Because these features are standard, they do not constitute mitigation measures.

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

- **Project Impacts** describes the potential environmental changes to the existing physical conditions that may occur if the proposed project is implemented. Evidence is presented to show the cause-and-effect relationship between the proposed project and potential changes in the environment. The exact magnitude, duration, extent, frequency, and range or other parameters of a potential impact are ascertained to the extent feasible to determine whether impacts may be significant. In accordance with CEQA, potential project impacts, if any, are classified as follows for each of the environmental topics discussed in this Draft EIR.
    - **Significant Adverse Impact.** Significant adverse impacts are those that cannot be fully mitigated or avoided. If the project is approved, decision makers are required to adopt a statement of overriding considerations pursuant to *State CEQA Guidelines* Section 15093 explaining why the project benefits outweigh the unavoidable adverse environmental effects caused by these significant adverse environmental impacts.
    - **Less than Significant Impact with Mitigation Incorporated.** This classification refers to significant environmental impacts that can be feasibly mitigated or avoided. If the project is approved, decision makers are required to make findings pursuant to *State CEQA Guidelines* Section 15091 that adverse significant impacts have been mitigated to the maximum extent feasible through implementation of mitigation measures.
    - **Less than Significant Impact.** Less than significant impacts are environmental impacts that have been identified but are not significant. No mitigation is required for less than significant impacts.
    - **No Impact.** A "no impact" determination is made when the proposed project is found to have no environmental impact.
- **Mitigation Measures** are project-specific measures that would be required for the project to avoid, minimize, rectify, reduce, eliminate, or compensate for a potentially significant adverse impact.
- **Cumulative Impacts** refers to potential environmental changes to the existing physical conditions that may occur as a result of project implementation together with all other reasonably foreseeable, planned, and approved future projects producing related impacts. Section 15355 of the *State CEQA Guidelines* defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts may result from individually minor but collectively significant projects taking place over a period of time. For each of the environmental topics considered in this Draft EIR, the geographic scope of the cumulative analysis is defined. For example, the geographic scope of the cumulative analysis for potential cumulative land use and public service and utility impacts is the same, while the relevant cumulative area with respect to hydrology and water quality impacts includes all projected changes in areas within the watershed.

  The project is the adoption and implementation of the proposed General Plan Land Use and Urban Design Elements. The proposed Land Use Element and Urban Design Element will guide the overall physical development of the entire City through the horizon year 2040. Therefore, the

cumulative impact discussion in each section of this Draft EIR presents a broader examination of impacts considering future development throughout the City through the year 2040.

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

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4.1 AESTHETICS

4.1.1 Introduction

This section provides a discussion of the existing visual and aesthetic resources in the planning area and in the surrounding area, as well as an analysis of potential impacts that could result from implementation of the proposed General Plan Land Use and Urban Design Elements project (proposed project) with regard to visual quality, views, and light and glare. Information presented in this section is based on photographs of the planning area during field surveys and site visits, PlaceTypes designated in the proposed Land Use Element (LUE) (August 2016) (Appendix F), design guidelines outlined in the proposed Urban Design Element (UDE) (August 2016) (Appendix F), and the City of Long Beach (City) General Plan Open Space and Recreation (2002), Conservation (1973), and Scenic Routes (1975) Elements.

The analysis of aesthetics addresses the proposed project's visual relationship with existing and future known land uses in the surrounding area. The analysis of views focuses on the extent to which the proposed project may interfere with visual access to aesthetic features from nearby vantage points or corridors. As mentioned above, this section also assesses potential impacts associated with light and glare on locations in the vicinity of the proposed project.

Photographs of the existing visual setting of the planning area are included in this section for the purpose of developing an informed assessment of the potential impacts of the proposed project on visual and aesthetic resources.

4.1.2 Methodology

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

- **Aesthetic Resource:** An aesthetic resource is any element, or group of elements, that embodies a sense of beauty. A community's aesthetic resources include its natural setting, the architectural quality of its buildings, the vitality of its landscaping, the spatial relationships they create, and the views afforded by each. The degree to which these resources are present in a community is clearly subject to personal and cultural interpretation. However, it is possible to qualify certain resources as having aesthetic characteristics and establish general guidelines for assessing the aesthetic impacts of new development.
- **Glare:** A continuous or periodic intense light that may cause eye discomfort or be temporarily blinding to humans.
- **Light Source:** A device that produces illumination, including incandescent bulbs, fluorescent and neon tubes, halogen and other vapor lamps, and reflecting surfaces or refractors incorporated into a lighting fixture. Any translucent enclosure of a light source is considered to be part of the light source.
- **Scenic Resource:** An element that contributes to an area's scenic value. Scenic resources include landforms, vegetation, water, or adjacent scenery and may include a cultural modification to the natural environment.
- **Scenic Vista:** A scenic vista is the view of an area that is visually or aesthetically pleasing from a certain vantage point. It is usually viewed from some distance away. Aesthetic components of a

scenic vista include (1) scenic quality, (2) sensitivity level, and (3) view access. A scenic vista can be impacted in two ways: a development project can have visual impacts by either directly diminishing the scenic quality of the vista or by blocking the view corridors or "vista" of the scenic resource. Important factors in determining whether a proposed project would block scenic vistas include the project's proposed height, mass, and location relative to surrounding land uses and travel corridors.

- **Sensitive View:** Sensitive views are generally those associated with designated vantage points and public recreational uses, but the term can be more broadly applied to encompass any valued public vantage point. Sensitivity level has to do with the (1) intensity of use of a visual resource; (2) visibility of a visual resource; and (3) importance of the visual resource to users.
- **Vantage Point:** A particular point of observation.
- **Viewshed:** The surface area that is visible from a given vantage point or series of vantage points. It is also the area from which that vantage point or series of vantage points may be seen. The viewshed aids in identifying the views that could be affected by the proposed action.
- **Visual Character and Quality:** The visual aesthetic character or quality of a streetscape, building, group of buildings, or other man-made or natural feature that creates an overall impression of an area within an urban context. For example, a scenic vista along the boundary of a community, a pleasing streetscape with trees, and well-kept residences and yards are scenic resources that create a pleasing impression of an area. In general, concepts of visual character and quality can be organized around four basic elements: (1) site utilization, (2) buildings and structures, (3) landscaping, and (4) signage. Adverse visual quality effects can include the loss of aesthetic features or the introduction of contrasting features that could contribute to a decline in overall visual character. In addition, the degree of access to a visual resource contributes to the value of that resource so that an adverse visual quality effect can also occur if access to a visual resource is restricted.

The analysis of visual impacts focuses on changes in the visual character of the planning area that may result subsequent to the approval of the proposed project. This would include the visual compatibility of on-site and adjacent uses, changes in vistas and viewsheds where visual changes would be evident, changes to scenic resources along designated scenic roads, and the introduction of new sources of light and glare. Impacts to the existing environment in and around the planning area are identified by the contrast between the visual setting of the planning area before and after implementation of the proposed project. In this analysis, emphasis has been placed on the transformation of the proposed "Major Areas of Change" (refer to Chapter 3.0, Project Description for further detail related to these areas) and areas where the proposed project would result in the conversion of existing undeveloped areas into more urbanized uses. Although few standards exist to singularly define perceptions of aesthetic value, the degree of visual change can be described in terms of visual contrast. The visual contrast of pattern elements[1] within visual environments can be described based on four aspects of pattern character[2]: dominance, scale, diversity, and continuity. The enjoyment or interpretation of the visual experience is the visual quality. The degree of visual character and quality is evaluated around three descriptive elements: vividness, intactness, and unity. None of these descriptive elements alone is equivalent to visual quality; all three must be high to substantiate high visual quality.

[1] Pattern elements are primary attributes of a landscape and include form, line, color, and texture.
[2] Pattern character refers to the visual relationships of pattern elements.

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

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

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

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

Light and Glare. The analysis of light and glare identifies the location of light-sensitive land uses and describes the existing ambient conditions on and in the vicinity of the planning area. The analysis describes the proposed project's light and glare sources and the extent to which project lighting, including any potential illuminated signage, would spill off the planning area onto adjacent light-sensitive areas. The analysis also describes the affected street frontages, the direction in which the light would be focused, and the extent to which the proposed project would illuminate sensitive land

uses. The analysis also considers the potential for sunlight to reflect off of windows and building surfaces (glare) and the extent to which such glare would interfere with the operation of motor vehicles, aviation, or other activities. Glare can also be produced during evening and night-time hours by artificial light sources, such as illuminated signage and vehicle headlights. Glare-sensitive uses generally include residences and transportation corridors (i.e., roadways).

As stated previously, this section analyzes the aesthetic compatibility of the proposed project with the surrounding area and potential impacts to any public views and/or sensitive viewers that may exist in the project vicinity. The assessment of aesthetic impacts is subjective by nature. This analysis attempts to identify and objectively examine factors that contribute to the perception of aesthetic impacts that would be caused by the proposed project. The potential aesthetic impacts of the proposed project were assessed based on consideration of several factors, including scale, mass, and proportion. Edge conditions and viewshed alterations are also considered in the context of these factors to the extent such information is known.

The City has not adopted defined standards for analyzing aesthetic impacts. Because the proposed project under evaluation in this Environmental Impact Report (EIR) includes both the proposed Land Use and Urban Design Elements of the City's General Plan, and because specific design plans for new development occurring as a result of project approval would be prepared subsequent to this General Plan update, the visual effects of the proposed project are evaluated based on the project's consistency with goals and policies established in the Open Space and Recreation (2002), Conservation (1973), and Scenic Routes (1975) Elements of the City's General Plan and whether or not land use and visual changes resulting from the project would be compatible with the surrounding area.

As previously stated, the potential visual effects of the proposed project were estimated by comparing the existing visual setting of the planning area with land use and visual changes associated with the proposed project. Because the proposed project targets eight Major Areas of Change within the planning area, a particular emphasis has been placed on these areas when analyzing project-related impacts to aesthetics. As such, 13 key views from within the Major Areas of Change were selected to demonstrate the visual character and approximate massing of existing uses and development within these areas targeted for change.

4.1.3 Existing Environmental Setting

Regional Visual Character. The planning area includes the entire 50 square miles within the limits of the City. The City lies within the southwestern area of the Los Angeles Basin, which consists of a low alluvial floodplain. The floodplain is punctuated by a line of elongated low hills, folds, and faults along the northwest-trending Newport-Inglewood Structural Zone. Floodplain deposits from the Los Angeles River and the San Gabriel River have contributed to the formation of the coastal plain on which the City is located. Views of regional visual resources from the planning area include the Pacific Ocean, Port of Long Beach, San Gabriel Mountains, San Bernardino Mountains, and Santa Ana Mountains.

Views of the San Gabriel Mountains can be seen from various points throughout the City, with the most predominant views being from the northern areas of the City and higher elevations. Distant views of the San Bernardino and Santa Ana Mountains can be seen from higher elevations in the City.

Views of the Pacific Ocean, including Alamitos Bay, Rainbow Harbor, and the Port of Long Beach, can be seen along the City's shoreline and from higher elevations in the City.

Visual Character of the Planning Area. As noted above, the planning area encompasses the entirety of the City and is representative of a fully built out urban area containing a mix of residential, commercial, industrial, recreational, and institutional uses. The City is relatively flat with slight slopes in the Reservoir Hill, Bixby Knolls, and Signal Hill areas.

The City's existing General Plan Scenic Routes Element designates the following four types of scenic routes located throughout the City: Recreational Scenic Routes, Historical-Cultural Scenic Routes, Industrial-Educational Scenic Routes, and Bicycle Scenic Routes. The City has designated these four Scenic Route classifications in an effort to preserve scenic views afforded to pedestrians, motorists, and bicyclists traveling throughout the City.

Existing vegetation in the City includes a combination of native and non-native ornamental vegetation located along roadways, within parkland and open spaces areas, and surrounding development projects throughout the City. While ornamental vegetation is scattered throughout the City, the Los Cerritos Wetlands, located in the Southeast Area Development and Improvement Plan (SEADIP) planning area, are the most prominent form of native vegetation featured in the City.

In addition to native vegetation, it is important to note that due to the City's location adjacent to the Pacific Ocean, beaches and marinas located along the City's coastline also serve as prominent natural features in the City. Examples of beaches and marinas in the City include, but are not limited to, Alamitos Beach, Alamitos Bay-Long Beach Marina, Belmont Shore Beach, Colorado Lagoon Park and Beach, Granada Beach and Rosie's Dog Beach, Long Beach City Beach, Mother's Beach, and Rainbow Harbor and Marina.

The concentration of high-rise buildings in the Downtown area serves as a visual focal point for inland and coastal areas of the City. The entertainment activities at Rainbow Harbor combine with the visual landscapes of the Downtown and Port of Long Beach areas to provide a central visual point of interest for viewers. Views of neighborhoods surrounding the Downtown areas are typical of those in suburban areas with auto-oriented commercial centers.

The majority of the City is characterized by areas of low- to moderate-scale buildings and structures. Single-family dwellings are typically limited to 1- to 2-stories throughout the City. Outside of the Downtown area, multi-family residential uses vary from low- to moderate-scale buildings. While the visual interest and aesthetic value of these low-density residential areas are visually diverse, the continuity of scale between neighborhoods creates a visual condition that exhibits harmonious form. Shoreline areas in the City provide visual continuity where views of urban development follow the curvature of the Pacific Ocean (Rainbow Harbor, Alamitos Bay, and Long Beach Shoreline Marina) and Port of Long Beach. Encroaching features throughout the City include vertical line elements (i.e., overhead lines and street lights) that are visible along roadways.

Neighborhood Visual Character. As previously stated, the visual character of the planning area is variable depending on the viewer's location within the City. For planning purposes, the City is divided into the following nine primary community plan areas (refer to Figure 4.1.1, Community

Plan Areas): North Long Beach, Bixby Knolls, Westside and Wrigley, Eastside, Central, Traffic Circle, Downtown, Midshore, and Southeast. The neighborhood visual character of each of these community plan areas is described in the proposed LUE and UDE and is briefly summarized below.

1. **North Long Beach.** The North Long Beach area is located west of the Interstate 710 (I-710) and includes the areas located west of Downey Avenue and north of the Union Pacific Railroad (UPRR). This area is predominately characterized by low-scale development largely consisting of residential, commercial, industrial, and institutional uses. The residential uses in this area are typically 1- and 2-story single family dwellings and multi-family dwellings not in excess of 4-stories. Commercial uses along major corridors, such as Long Beach Boulevard and Atlantic Avenue, maintain varied setbacks. Newer commercial/retail buildings along these corridors typically have larger setbacks for parking areas to buffer the building from the roadway, while older buildings are typically situated at the right-of-way limits with no setbacks. The areas in the vicinity of Paramount Boulevard and South Street consist of low-density industrial uses and associated equipment storage areas.

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

3. **Westside and Wrigley.** The Westside neighborhood is located on the west side of the I-710 and includes the Westside and Arlington neighborhoods. This neighborhood is characterized by low-density development comprised of 1- and 2-story residential and commercial buildings. The majority of the housing units in this area are single-family detached homes, with many of these homes having been constructed in the 1920s and 1940s. The residential and commercial structures in this area maintain remnants of the architecture and styles of the era, but the intactness of their historic value is highly variable. The Villages at Cabrillo development is located north of Pacific Coast Highway (PCH) and east of State Route 103 (SR-103) Terminal Island Freeway. This multi-family development includes buildings that are approximately four stories designed in a modern style of architecture, which is a variation from the traditional architectural style in this area.

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

4. **Eastside.** The Eastside area is the largest community plan area in the City and is bound by the Cities of Los Alamitos and Hawaiian Gardens to the east, the City of Lakewood to the north, and PCH and 7th Street to the south. Predominant uses in this area include low-density housing, shopping centers, schools, religious institutions, and parks. The Eastside area also contains the 800-acre El Dorado Regional Park and the California State University, Long Beach campus. The residential neighborhoods in this area are characterized by low-density (1- and 2-story) post-World War II suburban developments with mature tree-lined parkways. Auto-oriented commercial centers are located along major corridors (i.e., Bellflower Boulevard and Spring Street) to serve the surrounding homes and businesses within the Eastside area. The low-density scale and post-WWII architecture of the residential dwellings is largely consistent throughout Eastside. The commercial centers in the Eastside area are diverse in their architectural styles; however, the concentration of similarly scaled commercial developments along major corridors provides a pattern of development that maintains consistency in this neighborhood.

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

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

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

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

8. **Midshore.** The Midshore area is comprised of Alamitos Beach, Rose Park, Franklin School, Bluff Heights, and Bluff Park. Midshore contains a mix of low-density historic residential districts (bungalows developed in the 1920s); however, many of these homes were replaced with newer high-density residential units between the 1960s and 1980s. Additional high-rise multi-family developments are located along Ocean Boulevard. While these developments have been developed to significantly greater heights than surrounding residential uses, these buildings are generally lower in height and scale than similar uses in the adjacent Downtown area. Commercial uses in this area are concentrated along east-west corridors (e.g., Broadway, 3rd Street, 4th Street, and 7th Street). These commercial areas contain a mix of historic and contemporary architecture. The overall height of buildings within the area ranges from 1- to 2-stories, with a general increase in building heights on the south side of Ocean Boulevard.

9. **Southeast.** The Southeast area is comprised of Alamitos Heights, Belmont Heights, Belmont Shore, Belmont Park, Naples, Peninsula, Recreation Park, University Park Estates, and the SEADIP neighborhoods. The Southeast area is characterized by residential, commercial, and maritime uses. The Alamitos Bay and supporting uses are largely concentrated in the southern portion of this area and maintain a mix of commercial uses among other establishments to support the maritime activities in the bay. The Belmont Shore area is comprised of low-density commercial and residential uses, with scattered entertainment and office uses. The corridor along 2nd Street serves as a popular designation as it contains a variety of retail and restaurant uses within a pedestrian-oriented streetscape. In addition to development along 2nd Street, the Naples neighborhood is unique within the Southeast area as it is comprised of residential uses and three artificial islands connected by high-arching bridges. Due to the proximity of the homes within this neighborhood to the water, boat docks and maritime uses also serve to characterize the visual character of the Naples neighborhood. The Southeast area is also characterized by large open space and recreational uses, predominately along 7th Street and PCH, and the SEADIP neighborhood. The SEADIP area is generally comprised of low-density, auto-dominated commercial areas, the Los Cerritos Wetlands, the Alamitos Bay Marina, and the Alamitos Bay Landing. As evidenced above, development in the Southeast community Plan area varies by type and architectural style, but largely remains at a 1- or 2-story scale.

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

Key Views. The following discussion describes several key views taken from within the following eight Major Areas of Change (refer to Figure 3.5, Major Areas of Change): (Area of Change 1) More Open Space; (Area of Change 2) Convert to Neo-Industrial Uses; (Area of Change 3) Promote Regional-Serving Uses; (Area of Change 4) Transition from Industrial Uses to Commercial Uses; (Area of Change 5) Promote Transit-Oriented Development Uses; (Area of Change 6) Continue Downtown Development; (Area of Change 7) Promote Infill and Redevelopment to Support Transit; and (Area of Change 8) Redevelop to Highest and Best Use.

Key views within the Major Areas of Change were taken from public roadways within these areas; key views from private properties were not selected because views from private property are not considered protected visual resources. It is important to note that as an observer's speed increases, the sharpness of lateral vision declines and the observer tends to focus along the line of travel. Thus, the physical location and the duration of its view would affect the viewer exposure from the selected key views. Although the proposed project is the implementation of documents, photographs were taken to depict existing views that would potentially be affected by new development envisioned by the proposed project. A site photo location map (Figure 4.1.2 Key View Map) illustrates the vantage point from which each key view photograph was taken and illustrates the representative view from that location.

Figures 4.1.3 through 4.1.10 contain 13 key view photographs, as referenced in the following discussion, and are provided at the end of the section.

Area of Change 1: More Open Space

- **Key View 1: View from Studebaker Road:** Key View 1 shows a view looking southwest from Studebaker Road in the southeast portion of the City. This vantage point was chosen because it shows existing open space in the SEADIP area.

  As illustrated in Figure 4.1.3, Key View 1 consists of sidewalk, bridge, chain link fencing, and ruderal vegetation in the foreground; the Los Cerritos Channel, open space, and sparse vegetation in the middleground; and distance buildings, vegetation, and the sky in the background.

Area of Change 2: Convert to Neo-Industrial Uses

- **Key View 2: View from Paramount Boulevard:** Key View 2 shows a view looking north from Paramount Boulevard. This vantage point was chosen because it shows the scale of existing development and the industrial uses present in this area south of State Route 91 (SR-91) and north of South Street.

  As illustrated in Figure 4.1.4, Key View 2 consists of roadway and vehicles in the foreground; roadway, utility lines, vehicles, sidewalk, and industrial uses in the middleground; and the distant San Gabriel Mountains and sky in the background.

- **Key View 3: View from Westbound Victoria Street:** Key View 3 shows a view looking west from Victoria Street, west of its intersection with Long Beach Boulevard. This vantage point was chosen because it shows the scale of existing development and uses in the area west of I-710 and

Long Beach Boulevard, in an area that is proposed for the conversion of industrial uses to neighborhood-serving uses.

As illustrated in Figure 4.1.4, Key View 3 consists of roadway, sidewalk, vehicles, and a landscaped setback in the foreground; roadway, street lights, surface parking lots, vehicles, and industrial and office uses in the middleground; and the sky in the background.

Area of Change 3: Promote Regional Serving Uses

- **Key View 4: View from intersection of Lakewood Boulevard and Cover Street:** Key View 4 shows a view looking west from the intersection of Lakewood Boulevard and Cover Street. This vantage point was chosen because it shows the scale of new development adjacent to vacant land in the vicinity of the Long Beach Airport and Lakewood Boulevard.

  As illustrated in Figure 4.1.5, Key View 4 consists of roadway and a landscaped median in the foreground; roadway, street lights, street trees (i.e., mature palms), vehicles, and commercial/retail uses in the middleground; and industrial and office uses, street trees, and the sky in the background.

Area of Change 4: Transition from Industrial Uses to Neighborhood-Serving Uses

- **Key View 5: View from Northbound Cherry Avenue:** Key View 5 shows a view from the northbound lanes on Cherry Avenue, just north of its intersection with I-405. This vantage point was chosen because it represents a view of the industrial uses near the Long Beach Airport for motorists in an area proposed for the conversion of industrial uses to neo-industrial uses.

  As illustrated in Figure 4.1.6, Key View 5 consists of roadway, sidewalks, and utility boxes in the foreground; roadway, utility lines, and industrial uses in the middleground; and utility lines, industrial uses, the sky, and the (now closed) Boeing facility in the background.

Area of Change 5: Promote Transit-Oriented Development Uses

- **Key View 6: View from intersection of Long Beach Boulevard and PCH:** Key View 6 shows a view looking south from the intersection of PCH and Long Beach Boulevard. This vantage point was chosen because it shows the scale of existing development adjacent to the existing Metro Blue Line stations along the Long Beach Boulevard corridor, which is targeted for an increase in transit-oriented development.

  As illustrated in Figure 4.1.7, Key View 6 consists of roadway, vehicles, and a light rail line in the foreground; roadway, street lights, vehicles, pedestrians, mature trees (i.e., palms), utility lines, the Metro Blue Line PCH station, and commercial/retail uses in the middleground; and street lights, street trees, utility lines, mature trees, a multi-family residential, commercial uses, and the sky in the background.

Area of Change 6: Continue Downtown Development

- **Key View 7: View from Eastbound Ocean Boulevard:** Key View 7 shows a view facing east from Ocean Boulevard at Linden Avenue. This vantage point was selected because it represents the view for motorists traveling east on Ocean Boulevard in the Downtown area.

  As shown in Figure 4.1.8, Key View 7 depicts the roadway in the foreground; mature palms, street parking, roadway, street lights, utility boxes, and vehicles in the middleground; and high-rise buildings (including the of 15-story Villa Riviera), construction cranes, mature palms, and the sky in the background. This view was selected to illustrate the scale of existing buildings on Ocean Boulevard from the pedestrian vantage point and because it illustrates an area proposed for increased Downtown development.

- **Key View 8: View from Southbound Long Beach Boulevard:** Key View 8 shows a southwestern view of Downtown buildings from Long Beach Boulevard. As shown, there is variation of height between many of the residential and office buildings in Downtown. This view shows the varied articulation in building heights in the Downtown area north of Ocean Boulevard. This view was also selected because it illustrates the scale of potential future projects in the Downtown area from the pedestrian vantage point.

  As illustrated in Figure 4.1.8, Key View 8 consists of a parking lot in the foreground; ornamental trees and a 5-story multi-family residential building in the middleground; and multi-family residential buildings, an office building, and the sky in the background.

- **Key View 9: View from Southbound Long Beach Boulevard:** Key View 9 shows a view of the transit facilities on 1st Street facing west from Long Beach Boulevard. This vantage point was selected because it depicts the views of the existing transit hub along 1st Street and because it is at an area proposed for Downtown development. As illustrated by Figure 4.1.9, street trees along 1st Street currently provide a vegetative accent along the developed corridor.

  As illustrated in Figure 4.1.8, Key View 9 consists of the roadway in the foreground; the roadway, sidewalk; bus and light rail transit stops, buses, vehicles, roadway, and mature palm trees in the middleground; and buildings, the Long Beach Civic Center, and the sky in the background.

Area of Change 7: Promote Infill and Redevelopment to Support Transit

- **Key View 10: View from Northbound Pacific Coast Highway:** Key View 10 shows a view of the Traffic Circle area from the northbound lanes on PCH, just north of its intersection at Ximeno Avenue. This vantage point was chosen because it represents a view of an area proposed for infill development to support transit, as well as a view for motorists from an Eligible State-Designated Scenic Highway.

  As illustrated in Figure 4.1.9, Key View 10 consists of roadway and sidewalk in the foreground; roadway, street lights, mature trees, and commercial buildings in the middleground; and street lights, mature trees, the sky, and the Traffic Circle in the background.

- **Key View 11: View from Southbound Redondo Avenue:** Key View 11 shows a view of the intersection of Redondo Avenue and Anaheim Street. This vantage point was chosen because it shows the scale of existing development and types of existing land uses along Redondo Avenue, in an area targeted for infill development to support transit.

  As illustrated in Figure 4.1.9, Key View 11 consists of vehicles and roadway in the foreground; roadway, street lights, raised signage, vehicles, and automotive and commercial uses in the middleground; and street lights, mature trees, and the sky in the background.

Area of Change 8: Redevelop to Highest and Best Use

- **Key View 12: View from East Ocean Boulevard:** Key View 12 shows a view of the looking northwest from Ocean Boulevard, west of its intersection with Bennett Avenue. This vantage point was chosen because it shows the scale of existing development and types of existing land uses along Ocean Boulevard in the Belmont area, which is targeted for revitalization.

  As illustrated in Figure 4.1.10, Key View 12 consists of roadway and sidewalk in the foreground; roadway, street lights, mature trees within a landscaped median, street parking, and commercial uses in the middleground; and street lights, mature trees, raised signage, commercial and residential uses and the sky in the background.

- **Key View 13: View southeast from intersection of 2nd Street and PCH:** Key View 13 shows a view looking southeast from the intersection of PCH and 2nd Street. This vantage point was chosen because it shows the scale of existing development and types of existing land uses along PCH in the SEADIP area, which is targeted for revitalization.

  As illustrated in Figure 4.1.10, Key View 13 consists of roadway and sidewalk in the foreground; roadway, street lights, vehicles, a vacant parcel, wood fencing, and a hotel in the middleground; and street lights, street trees and the sky in the background.

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

4.1.4 Regulatory Setting

Federal Policies and Regulations. No federal policies or regulations pertaining to aesthetics are applicable to the proposed project.

State Policies and Regulations. As described further below (Threshold 4.1.1), the planning area is not located along a State Scenic Highway. There are no additional State policies or regulations pertaining to aesthetics that would be applicable to the proposed project.

Local Policies and Regulations.

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

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

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

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

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

> **GOAL:** Preserve and enhance natural and man-made aesthetic resources within and visible from scenic corridors.
>
> > **Policy 1:** Develop land use regulations and apply standards to control and enhance the quality of new and existing development within the scenic corridors of designated routes.
> >
> > **Policy 2:** Remove or screen visual pollution from designated scenic route corridors.

Policy 3: Require the development and use of aesthetic design considerations in any necessary modification of roadways and appurtenances for the enhancement of all designated scenic routes.

GOAL: Strengthen the City's image, and thereby, the well-being of all its citizens.

Policy 1: Increase the visibility of aesthetic features, natural and man-made, to develop a better awareness of the observer's location within the City and a better understanding of the City's function and meaning.

Policy 2: Develop standards of design articulation and continuity in sequential form and graphic representation that will unify and define the scenic route system.

Policy 3: Promote the awareness and use of the amenities of scenic routes for all segments of the population.

GOAL: Link and enhance recreational, cultural, and educational opportunities through a network of scenic corridors.

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

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

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

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

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

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

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

the General Plan as part of street character change in the recently adopted Mobility Element (October 2013) and as part of the Street Design Manual.

With implementation of the proposed UDE, the existing designated scenic route of Ocean Boulevard and Livingston Drive would continue to be a City designated scenic route. The proposed UDE also includes Policy UD 18-10, which calls for sustaining the policy and design principles of the former scenic highways element.

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

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

Landscaping Design Guidelines. Chapter 21.42, Landscaping Standards, of the City's Zoning Code establishes landscape guidelines for development projects. As described in this section, the City requires that landscaping be composed of a minimum of 90 percent drought tolerant and native plant materials in the interest of promoting water conservation. If the proposed planted area contains less than 90 percent of land covered with very low to low water use planting, a Landscape Document Package showing the Estimated Total Water Usage (ETWU) of all proposed plantings is required for City review and approval. The landscaping standards would be applicable to all projects requiring site plan review.

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

The following proposed Goals, Strategies, and Policies are applicable to the analysis of Aesthetics:

Land Use Element

STRATEGY No. 6: Implement the major areas of change identified in this Land Use Plan (Map LU-19).

LU Policy 6-4: Encourage degraded and abandoned buildings and properties to transition to more productive uses through adaptive reuse or new development.

LU Policy 6-12: Develop and implement a plan for SEADIP that establishes the area as an important gateway, builds on residential neighborhoods that are complemented by businesses and commercial services, protects wetlands and local coastal habitat, and creates attractive streetscapes with buildings designed with appropriate scale and form.

STRATEGY 8: Protect and enhance established neighborhoods.

LU Policy 8-1: Protect neighborhoods from the encroachment of incompatible activities or land uses that may have negative impacts on residential living environments.

LU Policy 8-2: Enhance and improve neighborhoods through maintenance strategies and code enforcement.

Urban Design Element

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

Policy UD 1-4: Focus on building flexible design on ground floors to allow for active building frontages along corridors and at the same level.

Policy UD 1-5: Prioritize and revitalize streetscapes in existing neighborhoods and targeted areas of change to provide well-lit streets, continuous sidewalks, consistent paving treatment and improved crosswalks at intersections.

Policy UD 1-6: Identify streets that can be reconfigured to accommodate a variety of improvements, such as wider sidewalks with trees, bike paths, dedicated transit lanes, and landscape medians or curb extensions that make the streets more attractive and usable, consistent with Complete Streets principles.

Policy UD 1-7: Employ timeless and durable materials in streetscape designed amenities.

STRATEGY No. 2: Beautify and improve efficiency of corridors, gateways, and private and public spaces.

Policy UD 2-1: Encourage a mix of building forms that embrace key historic resources of a neighborhood, encouraging architectural preservation and allowing for innovative renovations to older structures that will contribute to neighborhood character.

Policy UD 2-2: Remove or screen visual pollution, including amortizing blighting conditions.

Policy UD 2-3: Promote enhancement of the built environment through façade improvements, quality and context-sensitive infill development, and landscaping.

Policy UD 2-4: Incorporate aesthetic elements such as pedestrian lighting, gateway landscape treatment, and ornamental landscaping throughout the City.

Policy UD 2-5: Building elements and landscaping should screen items such as above-ground wires, communication boxes, back-flow preventers, and electric transformers that create visual distractions.

Policy UD 2-6: Prioritize aesthetic considerations in the refinement of development standards to enhance the quality of new and existing developments within scenic areas and iconic sites.

Policy UD 2-7: Identify, protect, and enhance designated scenic routes and iconic sites described in Public Spaces in this chapter.

Policy UD 2-8: Minimize visual clutter that detracts from an overall positive experience of a pedestrian. This would include regulating signage and the use of electronic signs and billboards (which may be appropriate in certain urban locations more than others).

Policy UD 2-9: Encourage the use of aesthetically designed common trash enclosures in alleys for multiple businesses to create more attractive and walkable environments.

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

Policy UD 5-4: Preserve, rehabilitate, and integrate existing buildings into new development projects wherever feasible to encourage adaptive reuse, reduce waste, and maintain local character.

STRATEGY No. 9: Protect and enhance historic resources, distinguishing architecture and other features that contribute to the unique character and identity of each neighborhood.

Policy UD 9-3: Identify, preserve, and enhance scenic areas and iconic sites. See Map UD-1, Historic Sites.

STRATEGY NO. 10: Celebrate diverse and unique cultural influences through architectural style, public art, public spaces, markets, fairs, and streetscape furnishings.

Policy UD 10-2: Collaborate with regional artists, residents, and community members during the design process to infuse public art and cultural amenities into a project.

STRATEGY No. 11: Integrate public art into the urban fabric of the City.

Policy UD 11-1: Incorporate public art and cultural amenities as community landmarks, encouraging public gathering and wayfinding, large and small.

Policy UD 11-2: Utilize public art to enhance pedestrian environments, such as sidewalks, paseos, plazas, and alleys.

Policy UD 11-3: Incorporate public art either as stand- alone installations or integrated into the design of other urban improvements, such as bridges, on-ramps, public building murals, paving, benches, and street lights.

Policy UD 11-4: Encourage the integration of localized art that add to the interest and nuance of the City's neighborhoods and showcase local identity and history.

STRATEGY No. 12: Expand the unified sign program, within the Areas of Change identified in the Land Use Element, to help orient visitors throughout the community. Include freeway identification, gateways, directional signs, and informational signs.

Policy UD 12-1: Focus investment on improving the appearance of entrances to the City on major boulevards so that wayfinding, landscape, and lighting are integrated into a cohesive design.

Policy UD 12-2: Develop a comprehensive approach to wayfinding for visitors and tourists who will enter the City at these gateways, including neighborhood entry signs and murals.

Policy UD 12-4: Emphasize gateways into Long Beach at freeways and important transportation hubs, such as the Long Beach Airport, Blue Line stations, and the Long Beach Cruise Terminal, and at arrival points of distinct neighborhoods and districts, through landscaping, architecture, street furniture, and appropriate signage.

STRATEGY No. 13: Create and maintain complete neighborhoods.

Policy UD 13-1: Incentivize neighborhood improvements to increase walkable/bikeable access to daily needs, goods/services, and healthy foods, reduce blight, and create safe places to play and congregate.

Policy UD 13-4: Implement streetscape improvements along the major cross-town corridors using a comprehensive approach to the corridor's sidewalks, landscaping, lighting, and amenities that reflect the individual neighborhoods along the corridor

STRATEGY No. 14: Building types and forms should contribute to the PlaceType they are sited within and should address potential conflicts between neighboring PlaceTypes by implementing buffering measures and thoughtful development patterns.

Policy UD 14-1: Properly scale a building's form (i.e., height and massing) to the primary street it fronts on (i.e., taller buildings on larger boulevards, smaller buildings on narrower streets).

Policy UD 14-2: Acknowledge transitions between commercial and residential uses by transitioning in height, scale, and intensity in a thoughtful way to provide a buffer to lower density residential development and transition from higher to lower intensity.

Policy UD 14-3: Allow new development projects to respond to their particular context and experiment with alternative development patterns while complementing their PlaceTypes.

Policy UD 14-7: Utilize building form and development strategies in conjunction with PlaceTypes and the interface between buildings and the streets (Strategy 34-35) to create a comprehensive urban fabric.

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

Policy UD 15-2: Promote infill projects that support the designated PlaceType and be appropriate in their use, scale, compactness of development, and design character with adjacent sites and nearby existing development.

STRATEGY No. 17: Define boundaries between natural areas, parks, and built areas.

Policy UD 17-2: Enhance linkages and access points with lighting and signage.

STRATEGY No. 18: Improve and preserve the unique and fine qualities of Long Beach to strengthen the City's image and eliminate undesirable or harmful visual elements.

Policy UD 18-1: Carefully consider the development of iconic sites with visual corridors or structures of the highest visual and architectural quality.

Policy UD 18-2: Expand the existing network of scenic routes and expand to include additional routes, corridors, and sites.

Policy UD 18-3: Establish guidelines and zoning overlays, as appropriate, to regulate development within scenic areas and for iconic sites.

Policy UD 18-4: Prioritize aesthetics to enhance the quality of new and existing developments within scenic areas and iconic sites.

Policy UD 18-5: Include aesthetic design considerations for all roadway and appurtenances within scenic areas.

Policy UD 18-6: Remove or screen visual pollution, including amortizing blighting conditions.

Policy UD 18-7: Increase the visibility and awareness of visual resources through promotional materials to all segments of the population.

Policy UD 18-8: Increase governmental commitment to the designation of scenic routes and the protection of scenic resources, and create and maintain a system of scenic routes through joint public and private responsibility.

Policy UD 18-9: Link and enhance significant recreational, cultural, and educational opportunities through a network of scenic corridors.

Policy UD 18-10: Follow the principles of the former scenic highways element, now incorporated into the General Plan as part of street character change (Mobility Element, Page 89, Map 16), and as part of the Street Design Manual, implementation measure MOP IM-1, Page 122.

STRATEGY No. 19: Protect and enhance established Founding and Contemporary Neighborhood PlaceType.

Policy UD 19-3: Support new development that is designed to respect the height, massing, and open space characteristics of the existing neighborhood while creating the appearance of single-family units for multifamily buildings to allow for better integration.

Policy UD 19-4: Promote the uniqueness of each neighborhood through preservation of mature trees, historic structures, fine-grained architectural detail, appropriate building scale, and cultural amenities that are key to the neighborhood's identity and help create a uniform streetscape.

Policy UD 19-5: Provide shade trees to match the existing species to reinforce neighborhood identity, to add greenscape for texture, shade and overall visual character, and to create a uniform streetscape. Maintain consistent wall and fence treatment along the street edge.

STRATEGY No. 20: Protect and enhance established Multi- Family Residential - Low and Moderate PlaceTypes.

Policy UD 20-1: Integrate Multi-Family Residential – Low and Moderate PlaceType neighborhoods with surrounding uses to encourage appropriate transitions in height and massing.

Policy UD 20-2: Encourage the design of multi-family buildings to relate to and reflect the surrounding context, whether it is historic or of a recognizable design era.

Policy UD 20-4: Encourage all development to exhibit a high standard of design and materials, to maintain privacy standards, and to provide public frontages that contribute to the larger street and block character.

Policy UD 20-5: Preserve the existing urban fabric through preservation of mature trees, historic structures, and cultural amenities.

STRATEGY No. 21: Protect and enhance established Neighborhood-Serving Centers and Corridors – Low and Moderate PlaceTypes.

Policy UD 21-1: Promote the concentration of mixed uses and higher building intensity nearest the center of the PlaceType and adjacent to transit stations, with housing or lower scale buildings at the periphery.

Policy UD 21-2: Encourage gateway elements that help define neighborhood edges and provide transitions into center development along lengthy corridors.

Policy UD 21-3: Promote pedestrian activity by establishing well-designed streetscapes, active ground floor uses, and tree-canopied sidewalks that are unique to the individual neighborhood and transit stations.

Policy UD 21-4: Ensure signage, lighting, and other potential nuisances are selected with sensitivity to existing residential neighbors.

STRATEGY No. 22: Protect and enhance established Transit-Oriented Development – Low and Moderate PlaceTypes.

Policy UD 22-1: Encourage the massing of buildings and setbacks behind the Long Beach Boulevard light rail corridor to transition from moderate to low, in order to gracefully handle the transition from more intense to less intense development.

Policy UD 22-2: Establish tree-lined sidewalks to provide a shade canopy and human-scale along primary corridors and adjacent to transit centers.

Policy UD 22-4: Incorporate amenities such as benches, bike racks, banners, way-finding signage and public art within Transit-Oriented Development to foster a pleasant experience and convey the unique identity of each district.

Policy UD 22-7: Develop iconic architecture, plazas, and major entrances oriented towards the transit station.

STRATEGY No. 23: Protect and enhance established Community Commercial PlaceType.

Policy UD 23-1: Provide adequate setbacks, along with visual and noise buffers, to separate automobile- oriented developments from adjacent residential neighborhoods.

Policy UD 23-2: Develop single-family attached units or multifamily residential uses as a transition in scale between the automobile-oriented corridor and the adjacent neighborhood.

Policy UD 23-3: Encourage new developments to provide alley and streetscape improvements that enhance the experience of the pedestrian and transit rider, such as low walls screening parking lots, substantial landscaping, street trees, and pedestrian- scaled lighting.

Policy UD 23-4: Provide clear and controlled signage that is not allowed to proliferate along the corridor or within a center in order to minimize visual clutter.

Policy UD 23-6: Provide low walls or hedges to buffer pedestrians from surface parking lots and provide well-marked pedestrian paths from sidewalks and parking lots to commercial entrances.

STRATEGY No. 24: Protect and enhance established Industrial PlaceType.

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

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

Policy UD 25-2: Establish visual screens, whenever possible, between live-work units and existing heavy or unenclosed industrial operations.

Policy UD 25-3: Encourage buildings that step down to match permitted residential building heights where new development is adjacent to residential uses.

Policy UD 25-4: Encourage development intensity that is graduated, from lower intensity near residential neighbors, to moderate intensity near wholly industrial uses.

Policy UD 25-5: Encourage Neo-Industrial PlaceTypes to have improved walkability with on-site, sidewalk and streetscape landscaping, signage, and other enhancements.

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

Policy UD 25-1: Enhance the edges, both within and adjacent to, the regional serving facility to avoid abrupt transitions between large institutional facilities and their neighbors.

Policy UD 23-3: Incorporate shade trees and pedestrian amenities along main streets, with pedestrian entrances oriented toward the sidewalk, not just internalized to the campus or facility.

Policy UD 26-4: Incorporate design features that provide for thematic elements to link adjacent areas with regional serving facilities, reinforcing community connections to these places.

STRATEGY No. 27: Protect and enhance established Downtown PlaceType.

Policy UD 27-3: Establish sustainable streetscape design as a norm for this PlaceType.

Policy UD 27-4: Enhance streetscapes and building elements to promote significant pedestrian activity by providing well-articulated building facades with quality building materials and workmanship, and featuring high-quality street furnishings and design.

Policy UD 27-5: Establish a bustling urban environment that will allow pedestrians to feel comfortable and welcome.

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

Policy UD 28-4: Develop attractive gateway elements to invite visitors in to explore the unique offerings found in each of the Waterfront PlaceTypes.

Policy UD 28-5: Promote and preserve street design characteristics unique to each Waterfront PlaceType.

Policy UD 28-8: Establish signage that is clear and controlled.

Policy UD 28-10: Encourage pedestrian-scaled building details featuring well-articulated building facades with quality building materials and workmanship.

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

Policy UD 31-3: Encourage plazas and public spaces in locations that take advantage of views and viewsheds.

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

Policy UD 35-2: Buildings should be constructed of high quality and durable materials, especially at the ground floor, which is experienced most by pedestrians.

Policy UD 35-6: Maintain a minimum street wall height to ensure the "public room of the street" (as shaped by buildings on both sides) is consistent. This is intended to eliminate parcels being underdeveloped along the edges, thus not contributing to the creation of good streets.

Policy UD 35-7: Monolithic structures that appear as a massive wall, block views, or overshadow the surrounding neighborhood, should be avoided.

Policy UD 35-8: Where parking structures are planned, the street wall should be composed of active uses that screen podium parking, parking structures, and other uses that do not contribute to a vibrant pedestrian environment.

STRATEGY No. 36: Develop a specific role and identity for a street, so that it contributes to the neighborhood's character while supporting specific, functional requirements.

Policy UD 36-1: Improve the frontage zone of buildings as extensions of the building, by enhancing entryways and doors, incorporating sidewalk cafes, and enhancing the space adjacent to the building as part of the pedestrian experience.

Policy UD 36-2: Develop streetscape strategies and concepts that establish a street as a public room, and incorporate opportunities for dining and display, walking, landscaping, and street furniture.

Policy UD 36-3: Identify zones along both sides of the street that define the building edge, dining and display areas, walking zone, planting and street furniture zones, and parking zones to enhance the character of the "public room."

STRATEGY No. 37: Frontages shall have well-designed street walls, contributing to making an inviting transition between public and private space.

Policy UD 37-1: Unify streets within each district with consistent frontage character types.

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

Policy UD 38-4: Buffer and screen parking areas with landscaping, berms, or low screens.

Policy UD 38-5: Provide special paving treatment or striping at crosswalks and intersections.

Policy UD 38-7: Create a clear frontage zone along the sidewalk with clear visibility of the structure and façade, as well as the space adjacent to the building.

STRATEGY No. 39: Beautify the City with trees and landscaping while being conscious of water resources and using sustainable practices.

Policy UD 39-1: Accommodate large canopy street trees that contribute to the City's urban forest, enhance street character and neighborhood identity, and provide shade for pedestrians and parked cars and bikes.

STRATEGY No. 40: Design parking lots, structures, driveways, and access points to promote walkability, reduced trips, and promote sustainability.

Policy UD 40-1: Minimize the visual impact of parking structures by encouraging the first floor to be wrapped with pedestrian-friendly uses and by urban design and landscaping features along pedestrian-oriented street frontages.

Policy UD 40-3: Beautify and screen parking lots located adjacent to a street edge with landscaping, shade trees, and decorative paving treatments.

Policy UD 40-4: Use planter beds, decorative paving materials, and safe pedestrian paths to break up large areas dedicated to parking.

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

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

Policy UD 41-6: Encourage the use of specialty paving or artistic ground treatment, such as painted concrete, where alleys intersect to enhance pedestrian activity.

Policy UD 41-7: Provide wayfinding signs, pedestrian lighting for safety and security, benches, and public art along alleys, paseos, paths, and trails to enhance neighborhood character and walkability.

4.1.6 Thresholds of Significance

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

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

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

Threshold 4.1.3: Substantially degrade the existing visual character or quality of the site and its surroundings; or

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

The analysis in the Initial Study (Appendix A) determined that the proposed project would not result in impacts with respect to substantial damage to scenic routes within a State scenic highway (Threshold 4.1.2) due to the fact that there are no State-designated scenic highways in the City. It should be noted that while there are several State highways within and adjacent to the City and while PCH is considered to be an Eligible State Scenic Highway, there are no officially designated State Scenic Highways in the City. Therefore, impacts related to the substantial damage of scenic resources within a State-designated highway are not discussed further in this Draft EIR.

4.1.7 Standard Conditions and Project Design Features

The proposed project would not be required to adhere to any standard conditions and would not include any project design features related to aesthetics.

4.1.8 Project Impacts

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

Less than Significant Impact. A scenic vista can be categorized as containing either a panoramic view or a focal view. Panoramic views are typically associated with vantage points that provide a sweeping geographic orientation not commonly available (e.g., skylines, valleys, mountain ranges, or large bodies of water). Focal views are typically associated with views of natural landforms, public art/signs, and visually important structures, such as historic buildings.

The proposed UDE notes important vistas from public roadways within the City such as views along Alamitos Avenue south to Villa Riviera; El Dorado Park; 3rd Street to the Port of Long Beach cranes; Ocean Boulevard; Bluff Park to the Pacific Ocean and Belmont Pier; Queensway Bay and Shoreline Park to the Queen Mary and cruise ships; the Downtown skyline; beaches and marinas; and Los Coyotes Diagonal to the distant San Gabriel Mountains. Additional visual resources afforded to the City include distant views of the San Gabriel and Santa Ana Mountains. Existing areas of open space,

such as the Los Cerritos Wetlands, are also considered visual resources because they provide visual relief from urbanized areas and provide views for motorists, pedestrians, and residents. There are no City-designated scenic vistas identified in the City's General Plan.

As previously described, the visual setting of the planning area is primarily characterized by areas of low- to moderate-scale buildings and structures. While the majority of the planning area consists of single-family dwelling units 1- to 2-stories in height, the Downtown area is characterized by high-rise buildings that are greater in density and scale than other surrounding areas. Given the City's rich history, the architectural style and character of development throughout the City varies by neighborhood; however, the visual character of development within each neighborhood is generally consistent. Ornamental vegetation lines roadways, is present within open space and park areas, and surrounds buildings and residential uses throughout the City. Similarly, open space and recreation uses are scattered throughout the City; however, the Los Cerritos Wetlands in the SEADIP area are the most prominent form of native vegetation in the City. While the proposed project is the adoption of two General Plan Elements and does not include any physical improvements that would result in the development of any new buildings or structures, project approval would facilitate the future development of sites throughout the City with structures and uses permitted by the proposed 14 PlaceTypes.

In addition to new development permitted by the proposed project, the proposed LUE and UDE establishes height limitations for each PlaceType (refer to Table 4.1.A, PlaceType Heights). The proposed PlaceTypes with the maximum height limitations are the Regional-Serving Facility PlaceType (28 to 150 ft), the Downtown PlaceType (38 to 240 ft) and Waterfront PlaceTypes (35 to 600 ft). The proposed uses in these areas, particularly the Downtown area, would have views of the Port of Long Beach, the Pacific Ocean, Rainbow Harbor, the Los Angeles River and open space uses. Views of the proposed uses within these PlaceTypes from other areas within the City would consist of skyline development silhouettes from public vantage points. While views of scenic resources afforded to the City may be partially obstructed following future building development as allowed by the proposed project, it is important to note that existing development in the City currently inhibit views of scenic vistas as the City is almost entirely developed and consists of urbanized development along the coastline.

As previously stated, there are no City-designated scenic viewpoints or scenic corridors in the City. However, the City's existing Open Space Element requires protection of scenic features in the City, including beaches, bluffs, wetlands, and water bodies. Because the planning area includes the entire City, views of the Pacific Ocean, Port of Long Beach, San Gabriel Mountains, and Santa Ana Mountains from within the City limits are considered to be scenic vistas.

Implementation of the proposed project (adoption of land use policy documents) would not result in the physical development of any buildings or structures that would result in the permanent obstruction of the scenic vistas identified above; however, project approval would facilitate future development that could result in the obstruction of these scenic vistas. Due to the prominence of existing urban and industrial developments adjacent to the Pacific Ocean and the Port of Long Beach, views of these resources would not be significantly altered by development envisioned under the proposed project. Further, future development facilitated by project approval would be designed according to the development strategies, policies, and standards in the proposed UDE, as described below.

Table 4.1.A: PlaceType Heights

PlaceType	Height
Open Space	2 stories, 28 ft
Founding and Contemporary Neighborhood[1]	2 stories, 28 ft, varies by area
Multi-Family Residential:	
Low	3 stories, 38 ft
Moderate	6 stories, 65 ft
Neighborhood-Serving Centers and Corridors:	
Low	3 stories, 38 ft
Moderate	2 to 7 stories
Transit-Oriented Development	
Low	5 stories, 65 ft (consistent with Midtown Specific Plan)
Moderate	No height limit
Community Commercial	2 to 6 stories, 65 ft
Industrial	4 stories, 65 ft
Neo-Industrial	3 stories, 60 ft
Regional-Serving Facility	Approx. 28 to 150 ft, See Figure 3.4, PlaceType Heights
Downtown (See Downtown Plan)	Approx. 38 to 240 ft, See Downtown Plan,
Waterfront	Approx. 35 to 600 ft, Varies by area

Source: Proposed Long Beach General Plan Land Use Element (August 2016) (Appendix F).
[1] Height may be increased to 3 stories consistent with the existing land use pattern. See Figure 3.4 (PlaceType Height Limitations) for maximum height.
ft = foot/feet

The proposed UDE includes development strategies and policies that consider the context of existing scenic vistas and neighborhoods when designing and implementing projects. These identified strategies include, but are not limited to, the beautification and improvement of the efficiency of corridors, gateways, and private and public spaces (Strategy No. 2); the protection and enhancement of historic resources, distinguishing architecture and other features that contribute to the unique character and identity of each neighborhood (Strategy No. 9); the celebration of diverse and unique cultural influences through architectural style, public art, public spaces, markets, fairs, and streetscape furnishings (Strategy No. 10); the provision of building types and forms that contribute to the PlaceType they are sited within, including the implementation of buffering measures and thoughtful development patterns (Strategy No. 14); the improvement and preservation of the unique and fine qualities of Long Beach to strengthen the City's image and eliminate undesirable or harmful visual elements (Strategy No. 18); the development of a specific role and identity for a street, so that it contributes to the neighborhood's character while supporting specific, functional requirements (Strategy No. 35); and the design of frontages with street walls, contributing to making an inviting transition between public and private space (Strategy No. 36).

In addition, the proposed UDE project would retain and provide open space areas and would include goals and policies regulating the provision of on-site landscaping along roadways and within future project sites, which would serve to frame the City's scenic corridors and would enhance views of future developments. Therefore, while future development facilitated by project approval would

modify views to and from areas throughout the City, potential impacts of the proposed project on scenic vistas would be less than significant, and no mitigation is required.

Threshold 4.1.3: Substantially degrade the existing visual character or quality of the site and its surroundings.

Less than Significant Impact.

The development of the proposed project would allow for future development throughout the City. The City is currently characterized as a built-out urban environment and would continue to be characterized as such because the proposed project would allow for the continued development and redevelopment of sites throughout the City.

The proposed project includes approval of both the Land Use and Urban Design Elements of the City's General Plan. As part of project approval, the LUE would target land use changes that could affect the existing visual character and quality of each area targeted for change. For example, the proposed project would alter the visual character within the eight Major Areas of Change by encouraging the provision of more open space, conversion of industrial uses to neo-industrial uses, conversion of industrial uses to commercial uses, promoting regional-serving uses, promoting transit-oriented development, promoting development within the Downtown area, promoting infill and redevelopment to support transit, and revitalizing areas along the waterfront. Impacts to the visual character of the planning area (e.g., higher-density development in designated locations) and the visual compatibility between proposed PlaceTypes and adjacent land uses could occur. The significance of visual impacts is inherently subjective because individuals respond differently to changes in the visual characteristics of an area. The City is almost entirely urbanized and is surrounded by urban development on all sides, with the exception of the southern portion of the City, which is bounded by the Pacific Ocean. The proposed project would allow for future development projects that would be consistent with the existing urbanized setting of the City. As discussed further below, although future development of the planning area would be consistent with the urbanized setting of the City, the future development of the planning area as proposed would, nonetheless, result in changes to the visual character of the City.

Visual Illustrations. While the proposed project would allow for development throughout the City, the majority of land use changes would occur within the eight Major Areas of Change. Therefore, the following is a discussion of the visual changes that would occur at the identified public vantage points, with a particular emphasis on impacts to the visual character within the Major Areas of Change.

Area of Change 1: More Open Space

- **Key View 1: View from Studebaker Road.** Key View 1 shows a view from Studebaker Road looking southwest. This view is intended to display the Los Cerritos Channel and associated open space areas in the SEADIP area. Implementation of the proposed project would encourage the restoration and preservation of open space in this area; however, in some cases the proposed LUE would permit the construction of commercial recreation uses in this area. Examples of the viewscapes envisioned for this area are shown on Figure 4.1.11. The maximum building heights

in this PlaceType area would be limited to approximately 2 stories or 28 ft, which would allow for the preservation of existing scenic views of the Los Cerritos Channel and associated open space areas. Further, buildings constructed at the maximum height allowed under the proposed LUE would be situated in a manner that is consistent with the open space function and character of the area. Therefore, the proposed project would maintain public views of the open space areas, including the Los Cerritos Channel and SEADIP areas. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.

Major Area of Change 2: Convert to Neo-Industrial Uses

- **Key View 2: View from Paramount Boulevard.** Key View 2 depicts a view of the North Long Beach area along Paramount Boulevard. This view was selected because it depicts existing industrial uses in an area targeted for the conversion of industrial uses to Neo-Industrial uses. Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.12. The maximum building heights established in the proposed LUE would be 40 ft for the area within this key view, which would be slightly higher than the building heights of the existing structures. The area adjacent to this key view on the east side of Paramount Boulevard, not pictured, would be classified under the Industrial PlaceType and have a height limit of 65 ft. Distant views of the San Gabriel Mountains would potentially be blocked by buildings constructed at the maximum height allowed under the proposed LUE. However, future projects allowed by the proposed LUE and UDE would enhance the overall visual quality of existing industrial areas as new developments would encourage the provision of visual screens between live-work units and existing industrial uses (Policy UD 24-2) and the enhancement of on-site sidewalk streetscape landscaping, signage, and other enhancements (Policy UD 24-5). With implementation of these features, the overall visual quality of industrial areas would be improved with implementation of the proposed project. Therefore, although future development may impede some distant views of the San Gabriel Mountains (depending on the location of such development), the overall visual quality within this Area of Change would be improved through the streetscape and landscape features described above. Therefore, overall impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.
- **Key View 3: View from Westbound Victoria Street.** Key View 3 shows a view from the westbound lanes on Victoria Street, just west of its intersection with Long Beach Boulevard. This view is intended to display the current industrial and office uses and building heights in this area. Implementation of the proposed project would promote the transition of these uses to neo-industrial uses with maximum building heights at a maximum of 45 ft, which would be similar in scale to the existing 2-story buildings shown in Key View 3. Examples of the viewscapes and scale of development envisioned for potential views in this area are shown on Figure 4.1.12. The Neo-Industrial PlaceType encourages light industrial activities associated with innovative start-up businesses and creative design offices, and also permits limited retail and live/work housing opportunities. Future projects would promote cohesion between existing and proposed uses. For example, low-intensity uses would be adjacent to low-density residential uses and medium-intensity uses would be adjacent to industrial uses. While the conversion of industrial uses to neo-industrial uses would not result in a significant change in the scale of existing industrial areas proposed for this transition, the inclusion of new Neo-Industrial uses would change the overall visual character of existing industrial areas. However, as proposed in the LUE and UDE, new neo-industrial uses developed in existing industrial areas would be designed in a manner that would preserve and enhance the streetscape character through the provision of visual screens

between live-work units and existing industrial uses (Policy UD 24-2) and the enhancement of on-site sidewalk and streetscape landscaping, signage, and other enhancements (Policy UD 24-5). Therefore, the overall visual quality of existing industrial uses would be improved with implementation of new neo-industrial uses as proposed by the project. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.

Major Area of Change 3: Promote Regional-Serving Uses

- **Key View 4: View from intersection of Lakewood Boulevard and Cover Street.** Key View 4 shows a view looking west from the intersection of Lakewood Boulevard and Cover Street. Due to the proximity to the Long Beach Airport, the existing height and scale of development in this area remains relatively low, as required by the Federal Aviation Administration (FAA). The developed area shown in the foreground of Key View 4 would have a maximum building height of 28 ft, or the equivalent of 2 stories. Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.13. The proposed project would not aim to significantly change these existing height and scale of development within this area, but rather would continue to promote regional-serving uses at maximum building heights determined by the FAA and the proposed LUE. The recently constructed commercial and office buildings shown in this key view serve as current examples of the scale and overall visual character of new development proposed as part of the Regional-Serving PlaceType. Similar to new development proposed in the area surrounding the Long Beach Airport, new development allowed under the proposed Regional-Serving PlaceType elsewhere in the City would be developed at a similar height and scale as existing development in these areas (including those areas designated as "Major Areas of Change" near Long Beach Memorial, Miller Children's Hospital, AES Los Alamitos, and the Haynes Generating Station). While future development facilitated by the proposed LUE and UDE would not result in significant changes to the height and scale of uses in areas designated as the Regional-Serving PlaceType, the proposed project would aim to improve the overall visual character of development in these areas. For example, the project proposes to improve the transition between regional-serving facilities and neighboring uses by incorporating enhanced edges, landscaping buffers and thematic design elements linking adjacent areas with regional-serving uses (Policies UD 25-1, UD 25-3, and UD 25-4). Additionally, the proposed project would encourage the provision of courtyards, paseos, and plazas to integrate open space with existing buildings and parking areas to improve the walkability of these areas and to provide better pedestrian connections in the Regional-Serving PlaceType. Therefore, the overall visual quality of existing regional-serving uses would be improved with implementation of the proposed project. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.

Area of Change 4: Transition from Industrial Uses to Commercial Uses

- **Key View 5: View from Northbound Cherry Avenue.** Key View 5 shows a view from the northbound lanes on Cherry Avenue, just north of its intersection with I-405. This view is intended to display the current industrial land uses and building heights in this area. Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.14. Implementation of the proposed project would promote the conversion of industrial uses to commercial uses with maximum building heights at approximately 2 stories or as required by the FAA. The area in the foreground and background (Boeing facility) of this key view are subject to

height limitations regulated by the FAA. Future buildings in the middle ground and background of this key view, near the Cherry Avenue and Wardlow Road intersection, would be limited to building heights at 3 stories, as indicated in the proposed LUE and UDE. These building heights in the middle ground and background along Cherry Avenue would be substantially higher than existing industrial buildings in this area and in industrial areas proposed for major changes. As such, future development may obstruct distant views of the San Gabriel Mountains from public vantage points and could result in changes to the visual character of existing industrial areas. While the proposed height limits under the proposed LUE would result in a substantial change of the existing visual character shown in Key View 5, the transition to new uses proposed within these areas would include sidewalk improvements, ornamental landscaping, and streetscape furnishings and amenities to improve the visual character of this area. In addition, new commercial uses in these areas would be developed to provide adequate visual transitions from commercial uses to adjacent residential uses (Policy UD 22-1). For example, new commercial uses would include low walls or hedges and streetscape improvements to screen parking lots and enhance the overall visual character of these areas (Policies UD 22-3, UD 22-4, and UD 22-6). Therefore, the overall visual quality of this area would be improved with implementation of the proposed project. Therefore, although future development may impede some distant views of the San Gabriel Mountains (depending on the location of such development), the overall visual quality within this Area of Change would be improved through the streetscape and landscape features described above. Therefore, impacts to the visual character and quality of this area would be less than significant, and no mitigation would be required.

Area of Change 5: Promote Transit-Oriented Development Uses

- **Key View 6: View from intersection of Long Beach Boulevard and PCH.** Key View 6 includes a view from the southbound lanes of Long Beach Boulevard at its intersection with PCH. This view is intended to display the current land uses and building heights in the vicinity of the Metro Blue Line PCH Station. Implementation of the proposed project would promote infill and redevelopment to support transit-oriented development uses with maximum building intensity of 1.00 to 4.00 floor-area-ratio (FAR) (Refer to Table 3.A in Chapter 3.0, Project Description). The Transit Oriented Development-Moderate PlaceType would be the proposed PlaceType visible in Key View 6. While the land use table in the LUE does not establish a height limit for buildings in the Transit Oriented Development-Moderate PlaceType, the height limit along Long Beach Boulevard in this view would be 16 stories and over (240 ft and over) (Refer to Figure 3.4, PlaceType Height Limits). Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.15. As shown in Key View 6, the existing building heights of development in this area range from approximately 1- to 4-stories. As such, buildings constructed at the maximum building height and intensity allowed under the proposed project would be substantially higher than the existing uses along Long Beach Boulevard. The proposed UDE would promote the concentration of mixed uses and higher building intensity nearest the center of the PlaceType and adjacent to transit stations (Policy UD 21-2) and encourage the massing of buildings and setbacks along the Long Beach Boulevard light rail corridor to transition from moderate to low, in order to gracefully handle the transition from more intense to less intense development (Policy UD 21-3). While future development would be at an increased scale in comparison to the existing setting, the proposed project would include the provision of streetscape improvements (Policy UD 21-6) and plazas near bus and major transit stations (Policy UD 21-4) to further enhance the visual character of new development in areas proposed for

development with transit-oriented uses and to provide adequate transitions from these areas to surrounding neighborhoods. The proposed UDE would guide the architectural style of future development to ensure compatibility with the surrounding visual setting. Therefore, the overall visual character would be improved with implementation of the proposed project. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.

Area of Change 6: Continue Downtown Development

- **Key View 7: View from Eastbound Ocean Boulevard.** Key View 7 depicts a view of the Downtown area east from Ocean Boulevard. Implementation of the proposed project would continue the development pattern currently implemented in the Downtown area. Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.16. The maximum building heights established in this area under the proposed LUE would be approximately 240 ft, which is slightly greater than the height of existing buildings in the Downtown area. Although new development proposed within the Downtown area would be at slightly greater heights than existing development, these buildings would generally be consistent with the overall urban character of the City's downtown. Views of future development would be enhanced by streetscape improvements (i.e., ornamental landscaping and street furnishings) and well-articulated building facades featuring high-quality building materials, as proposed in the UDE (Policy UD 26-4). Furthermore, structures proposed in the Downtown area, such as those proposed at a maximum height of 240 ft on the south side of Ocean Boulevard, would be consistent with the height and scale of the nearby multi-family residential dwellings. Therefore, because existing buildings in the Downtown area typically have higher building heights than other portions of the City and because the proposed project would include aesthetic improvements within the Downtown area, the overall visual character of the City's Downtown would be improved with implementation of the proposed project. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.
- **Key View 8: View from Southbound Long Beach Boulevard.** Key View 8 depicts a southwestern view of Downtown buildings in from Long Beach Boulevard. Implementation of the proposed project would encourage high-density and mixed-use development in the Downtown area. Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.16. Future projects would be located near transit stops and existing neighborhood serving uses. The maximum building heights established in this area under the proposed LUE would be approximately 240 ft, which could result in structures that are substantially higher than the existing buildings in the key view but would be consistent with the urban character of the Downtown area. Furthermore, views of future development would be enhanced by streetscape improvements (i.e., ornamental landscaping and street furnishings) and well-articulated building facades featuring high-quality building materials, as proposed in the UDE (Policy UD 26-4). Therefore, the overall visual character of the Downtown area would be improved with implementation of the proposed project. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.
- **Key View 9: View from Southbound Long Beach Boulevard.** Key View 9 depicts a view of transit facilities on 1st Street facing west from Long Beach Boulevard. 1st street is a one-way street that functions as a key location for transit in the Downtown area. Due to its proximity to the confluence of multiple forms of public transportation, this area is targeted for both Downtown

and transit-oriented development. Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.16. The proposed project would continue to encourage development in the Downtown area with a particular emphasis on transit-oriented development. The maximum building heights established in this area under the proposed LUE would be approximately 240 ft, which would be greater than most existing uses in the Downtown area. However, as previously noted, the proposed maximum building heights would be consistent with the urban character of the Downtown area and. Furthermore, views of future development would be enhanced by streetscape improvements (i.e., ornamental landscaping and street furnishings) and well-articulated building facades featuring high-quality building materials, as proposed in the UDE (Policy UD 26-4). Therefore, the overall visual character of the Downtown area would be improved with implementation of the proposed project. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.

Area of Change 7: Promote Infill and Redevelopment to Support Transit

- **Key View 10: View from Northbound Pacific Coast Highway.** Key View 10 shows a view of the Traffic Circle area from the northbound lanes on PCH. Implementation of the proposed project would promote infill development to support transit. Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.17. The maximum allowable building heights in this area would be approximately 5 stories, which would be visibly taller than the existing development ranging from 1-to 2-stories in height (with the exception of a nearby existing office building that is 4 stories on the western side of PCH). However, the visual quality of this area would be enhanced by streetscape improvements (Policy UD 22-3) and the development of new buildings with a transition in scale between the automobile-oriented corridor and the adjacent neighborhood (Policy UD 22-2) that would improve existing blighted and/or underutilized parcels within the Traffic Circle area. Therefore, the overall visual character of this area would be improved with implementation of the proposed project. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.
- **Key View 11: View from Southbound Redondo Avenue.** Key View 11 shows a view southbound from the intersection of Redondo Avenue and Anaheim Street. The existing scale of development in this area varies, but generally consists of low- to moderate- building densities. Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.17. The proposed project would promote infill development to support transit along the Redondo Avenue corridor. The Neighborhood-Serving Center or Corridor-Moderate PlaceType would be the proposed PlaceType visible in this key view and along the Redondo Avenue corridor. Future development would be permitted to be at approximately 4 stories at major intersections and 3 stories along the remainder of the Redondo Avenue corridor. Given the relatively low to moderate building heights and density in this area, future buildings constructed at the maximum building heights along Redondo Avenue would be visibly taller than the existing commercial/retail and residential structures. Building heights at corridor intersections would represent the tallest permitted buildings along this portion of the corridor, with maximum building heights decreasing between intersections (Policy UD 21-1). This gradual increase of building heights would enable continuity in form and a pattern of building articulation. Further, the visual quality of this area would be enhanced by streetscape improvements (Policy UD 21-6) and the gateway elements that help define neighborhood edges and provide transitions into center development along lengthy corridors (Policy UD 21-5). The development of new buildings and streetscape improvements would improve existing blighted and/or underutilized parcels in this

area. Therefore, the overall visual character of this area would be improved with implementation of the proposed project. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.

Area of Change 8: Redevelop to the Highest and Best Use

- **Key View 12: View from East Ocean Boulevard.** Key View 12 shows a view looking northwest from Ocean Boulevard, west of its intersection with Bennett Avenue in the Belmont Pool area. This view displays the existing scale of development, which currently maintains a 35-foot height limit for buildings. However, it should be noted that the Belmont Pool Facility was approximately 60 ft in height[1]. Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.18. The proposed project would allow development of buildings in this Key View area at 4 stories in the Waterfront PlaceType and approximately 3 stories in the Multi-Family-Low PlaceType, which would be similar to the existing 1- and 2-story structures in the area. However, plans for the proposed Belmont Pool Replacement Facility include a structure that will be similar in scale but at a greater height than the previous building, which was approximately 60 ft in height. New development in this area would develop attractive gateway elements (Policy UD 27-4), promote and preserve street design characteristics unique to each Waterfront PlaceType (Policy UD 27-5), and encourage pedestrian-scaled building details (Policy UD 27-10), which would encourage the establishment of new uses on blighted or underutilized parcels to promote the revitalization of the Belmont Pier area. Furthermore, the proposed project would aim to improve the visual quality of this area through the provision of pedestrian amenities and streetscape improvements. Therefore, the overall visual character of this area would be improved with implementation of the proposed project. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.
- **Key View 13: View southeast from intersection of 2nd Street and PCH.** Key View 13 shows a view looking southeast from the intersection of 2nd Street and PCH in the Southeast area. This view displays the existing scale of development in SEADIP area near the Alamitos Bay Marina. Examples of the viewscapes and scale of development envisioned for this area are shown on Figure 4.1.18. The proposed project notes that the City's Zoning Code (SEADIP would be applicable) would determine the maximum height limits of buildings shown in this key view, 30 ft for residential uses and 35 ft for non-residential uses, which would be similar to the existing buildings and structures in this area. Although the height limits under the proposed project would result in a minor change in the existing visual character, new development in this area would include attractive gateway elements (Policy UD 27-4), promote and preserve street design characteristics unique to each Waterfront PlaceType (Policy UD 27-5), and encourage of pedestrian-scaled building details (Policy UD 27-10). The proposed project would encourage the establishment of new uses on blighted or underutilized parcels to promote the revitalization of the SEADIP area. New development in this area would also be required to adhere to the development standards set forth in the SEADIP policy document. A new SEADIP policy document was in preparation at the time of analysis within this EIR. The proposed LUE and UDE would incorporate by reference the policies adopted in the new SEADIP, and, therefore, would be consistent with the SEADIP. Therefore, the overall visual character of this area would be

[1] The Belmont Pool Building was demolished in February 2015 due to seismic safety concerns. Plans for the new replacement facility are ongoing at this time.

improved with implementation of the proposed project. Impacts to the visual character and quality of this area would be less than significant, and no mitigation is required.

Long Term Impacts. As previously stated, there are no City-designated scenic viewpoints on the planning area, nor are there designated scenic resources for which the City requires view protection. However, scenic resources afforded to the City include the Pacific Ocean, Port of Long Beach, the Long Beach Marinas, San Gabriel Mountains, and Santa Ana Mountains. Because these scenic resources are visible from several areas within the City, views from the planning area are considered to contain scenic vistas.

Approval of the proposed project would allow for future development that could permanently alter the existing visual character of the City and may result in the potential isolated obstruction of the scenic vistas identified above. However, views of these natural landforms would not be permanently obstructed by the development envisioned under the proposed project. Despite being less visible from vantage points within the City, no substantial adverse effects related to the obstruction of views of the San Gabriel and Santa Ana Mountains would occur as a result of development envisioned by the proposed project. For example, higher-density development that could obstruct views of these resources would primarily occur within the Major Areas of Change and would not occur throughout the City, thereby limiting the vantage points within the City from which views of these resources would be obstructed.

In addition, the proposed project also includes the continued preservation of existing open space areas within the City, which would preserve the existing character of these portions of the planning area. Project approval would also encourage the creation of new neighborhood parks and parklets in more urban areas that would serve as public areas for all community members to enjoy scenic views from the planning area. These areas would preserve opportunities to observe distant views of the Pacific Ocean, Port of Long Beach, San Gabriel Mountains, and Santa Ana Mountains.

While the visual character of the City would be altered as a result of development envisioned as part of the proposed project, the proposed UDE establishes goals, policies, strategies, and development standards to guide the quality and aesthetic value of future development in the City. All future proposed projects within the City will require submittal and approval of detailed plans and project-specific environmental review. Approval of project-specific site plans would ensure that all future development within the City would be consistent with the City's design requirements, including those outlined in the proposed UDE, and would ensure consistency with the visual character of existing development within the City. Further, the proposed project would incorporate goals, policies, strategies, and recommendations intended to avoid, reduce, offset, or otherwise minimize potential adverse impacts to the overall visual character associated with new development followed by project approval. Therefore, the proposed project would not substantially degrade the visual character of the City, and no mitigation would be required.

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

Less than Significant Impact. As stated previously, existing sources of light in the project vicinity include headlights on nearby roadways; building facade and interior lighting; pole-mounted lighting

in the parking areas; and lighting associated with regional serving uses such as the Port of Long Beach, Long Beach Airport, and entertainment activities at the Pike at Shoreline Village. Adjacent residential areas, public facility uses (including roadways and highways), commercial uses, and industrial uses also currently emit light and glare. Lighting from existing distant development within the region and surrounding cities also contributes to the background lighting within the City.

While the proposed project itself would not result in direct sources of light or glare, future development facilitated by the proposed project would introduce new sources of light to the City that are typical of development projects. Lighting proposed as part of future projects would vary by development type; examples of light sources include street lights along roadways and sidewalks, accent lighting, and night-time security lighting. All building and landscape lighting would be consistent with the design standards established in the proposed UDE and the City's Municipal Code. All parking area and structure lighting would be designed with lights directed and shielded to prevent light and glare from intruding onto adjacent sites and as outlined in Section 21.41.259, Parking areas—Lighting, of the Zoning Code. On-site landscaping proposed as part of new development projects would reduce glare and would serve to screen light sources to reduce the visual impact of lighting from buildings and parking lots. Although future development would introduce new sources of light that would contribute to the light visible in the night sky and surrounding area, the planning area is located within a highly urbanized area that is currently characterized by significant nighttime lighting. As such, the proposed project's impact related to light and glare would be less than significant as future allowable uses proposed as part of the project are similar to existing uses currently emitting light and glare.

The proposed project envisions future development of buildings and structures with a variety of materials, which may include reflective materials. Each future development project would be subject to project-level CEQA review at the time such project is under consideration by the City. The City would review site plans and architectural renderings for the presence of reflective materials, assess potential impacts related to light and glare, and propose mitigation, if necessary. Potential mitigation measures could require the project applicant to prepare a lighting plan, a photometric study for review and approval, or undergo a lighting inspection. These measures are intended to minimize the impacts of new sources of light and glare on adjacent land uses, limit lighting to that necessary for security, and ensure that lighting is shielded to reduce glare and spill lighting effects to residential areas. The proposed project, which is a policy document, is not expected to result in a substantial increase in the amount of light and glare in the project area. Impacts are, therefore, considered less than significant.

4.1.9 Mitigation Measures

The proposed project would not result in any significant adverse impacts related to aesthetics. No mitigation is required.

4.1.10 Cumulative Impacts

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

proposed project is a City-wide policy action that would facilitate future development throughout the entire City, the proposed project itself is cumulative in nature.

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

As described previously, future development facilitated by the proposed project would change the visual character of the planning area, specifically within the Major Areas of Change, as compared to existing conditions. While the existing character of the planning area would be substantially changed compared to existing conditions, the site design, landscaping, and architectural design of future projects would be required to be consistent with goals, policies, strategies, and development standards established by the proposed UDE, which are intended to avoid, reduce, offset, or otherwise minimized identified potential adverse impacts of the proposed project or provide significant benefits to the community and/or to the physical environment. Future projects would also be required to go through the environmental, architectural, and site plan review and approval process. Furthermore, development envisioned by the proposed project within the 14 PlaceTypes is intended to improve the overall visual character of the City through new development projects that would shape the urban environment of the City, while preserving existing development that define its unique aesthetic character. Therefore, future projects envisioned by the proposed project would result in less than significant impacts related to the degradation of the overall visual character of the City.

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

4.1.11 Level of Significance after Mitigation

The proposed project would not result in significant unavoidable adverse impacts related to aesthetics or visual resources.

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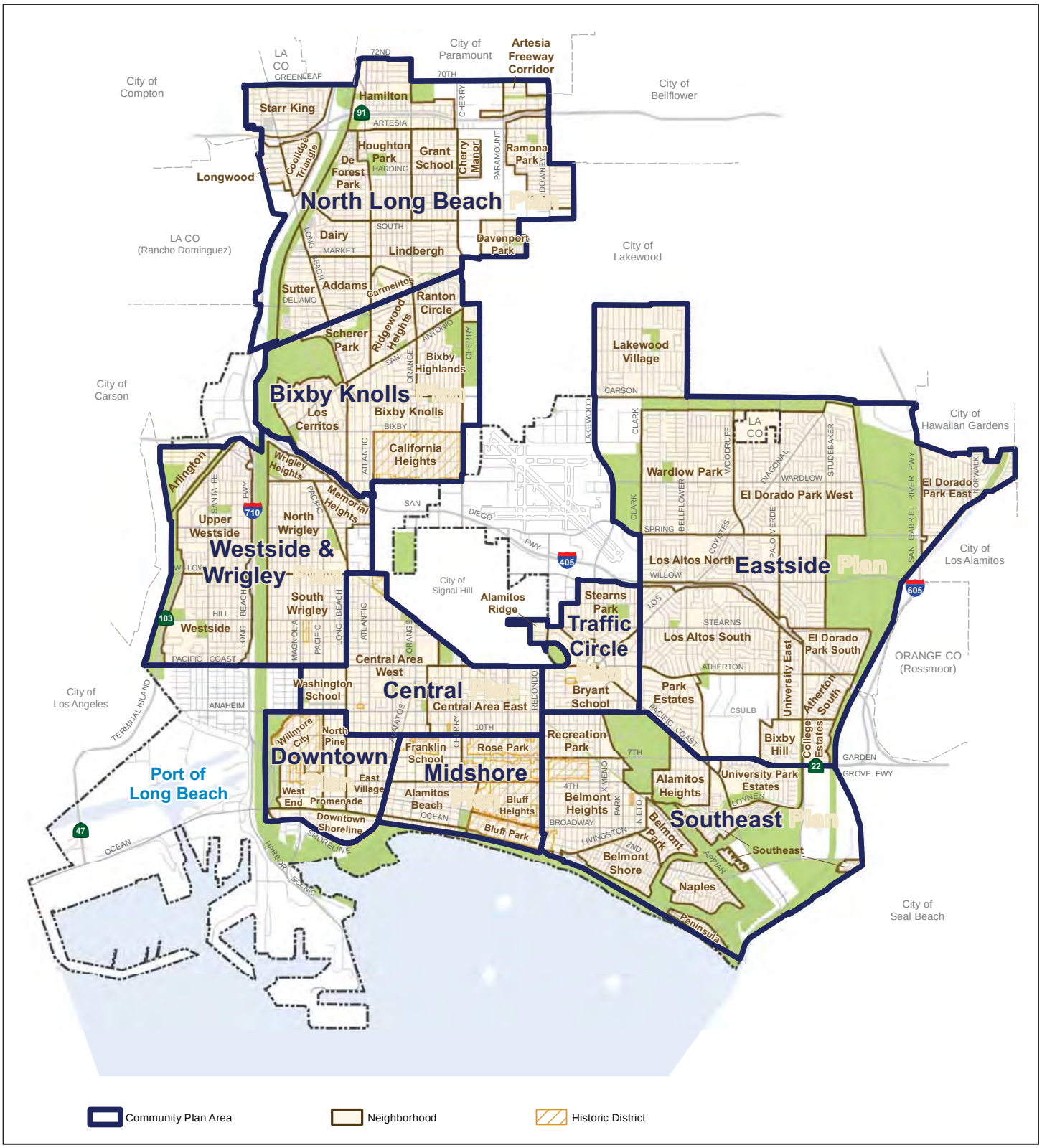

LSA

FIGURE 4.1.1

N

0 0.75 1.5
MILES

SOURCE: Proposed Land Use Element, City of Long Beach, June 2015

Long Beach General Plan
Land Use and Urban Design Elements
Community Plan Areas

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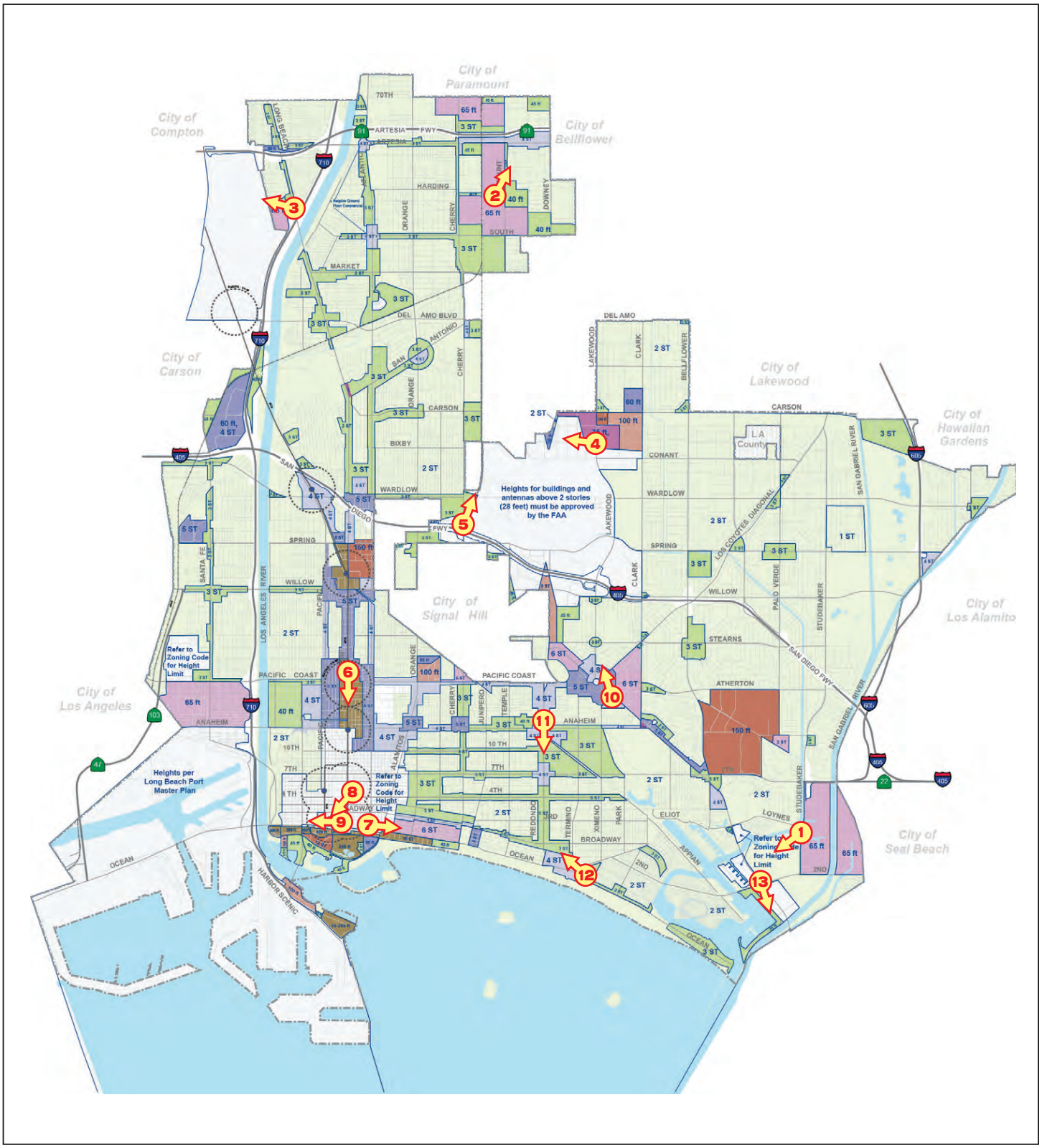

LSA

FIGURE 4.1.2

- Key View Location

N

0 .75 1.5
MILE

SOURCE: Proposed Land Use Element, City of Long Beach, June 2015

Long Beach General Plan
Land Use and Urban Design Elements
Key View Map

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Major Area of Change 1: More Open Space

Key View 1: View from Studebaker Road

LSA

FIGURE 4.1.3

Long Beach General Plan
Land Use and Urban Design Elements

Key Views of Major Areas of Change

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Major Area of Change 2: Convert to Neo-Industrial Uses

Key View 2: View from Paramount Boulevard

Key View 3: View from Westbound Victoria Street

LSA

FIGURE 4.1.4

Long Beach General Plan
Land Use and Urban Design Elements

Key Views of Major Areas of Change

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Major Area of Change 3: Promote Regional-Serving Uses

Key View 4: View from intersection of Lakewood Boulevard and Cover Street

LSA

FIGURE 4.1.5

Long Beach General Plan
Land Use and Urban Design Elements

Key Views of Major Areas of Change

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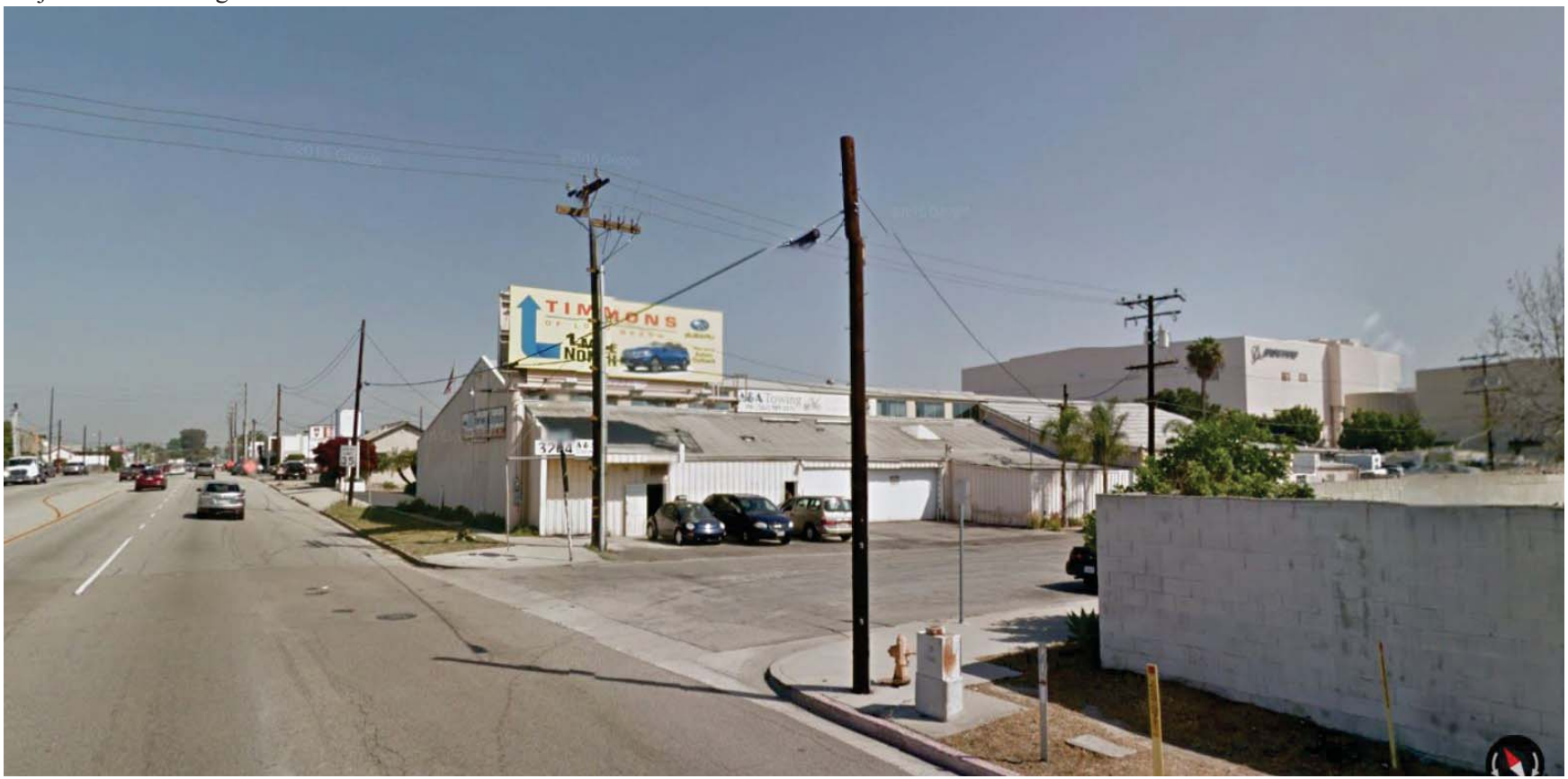
Major Area of Change 4: Transition from Industrial Uses to Commercial Uses



Key View 5: View from Northbound Cherry Avenue

LSA

FIGURE 4.1.6

Long Beach General Plan
Land Use and Urban Design Elements
Key Views of Major Areas of Change

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Major Area of Change 5: Promote Transit-Oriented Development Uses

Key View 6: View from intersection of Long Beach Boulevard and PCH

LSA

FIGURE 4.1.7

Long Beach General Plan
Land Use and Urban Design Elements

Key Views of Major Areas of Change

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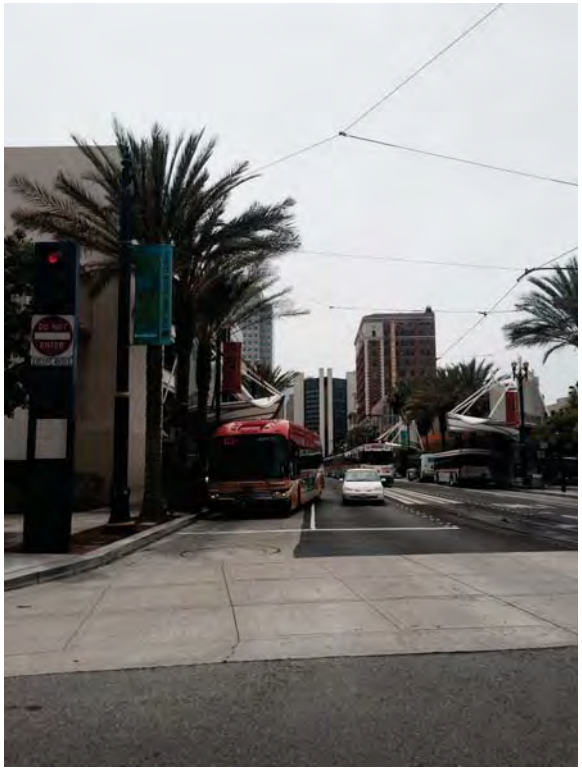
Major Area of Change 6: Continue Downtown Development

Key View 7: View from Eastbound Ocean Boulevard

Key View 8: View from Southbound Long Beach Boulevard



Key View 9: View from Southbound Long Beach Boulevard

LSA

FIGURE 4.1.8

Long Beach General Plan
Land Use and Urban Design Elements

Key Views of Major Areas of Change

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Major Area of Change 7: Promote Infill Development to Support Transit

Key View 10: View from Northbound Pacific Coast Highway

Key View 11: View from Southbound Redondo Avenue

LSA

FIGURE 4.1.9

Long Beach General Plan
Land Use and Urban Design Elements

Key Views of Major Areas of Change

I:\CLB1505\G\Key Views 10&11.cdr (1/29/16)

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Major Area of Change 8: Redevelop to Highest and Best Use

Key View 12: View from East Ocean Boulevard

Key View 13: View southeast from intersection of 2nd Street and PCH

LSA

FIGURE 4.1.10

Long Beach General Plan
Land Use and Urban Design Elements

Key Views of Major Areas of Change

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El Dorado Park Nature Center.

Rotary Centennial Park.

Heartwell Park baseball fields.

Marina Vista Park includes shade trees, gentle hills and room for organized sports, including tennis, soccer and baseball.

Los Angeles River and River Trail.

El Dorado Park Nature Center grounds.

LSA

FIGURE 4.1.11

Long Beach General Plan
Land Use and Urban Design Elements
Example of Views from Major Areas of Change:
More Open Space

SOURCE: City of Long Beach - Land Use Element 2015, Urban Design Element 2015

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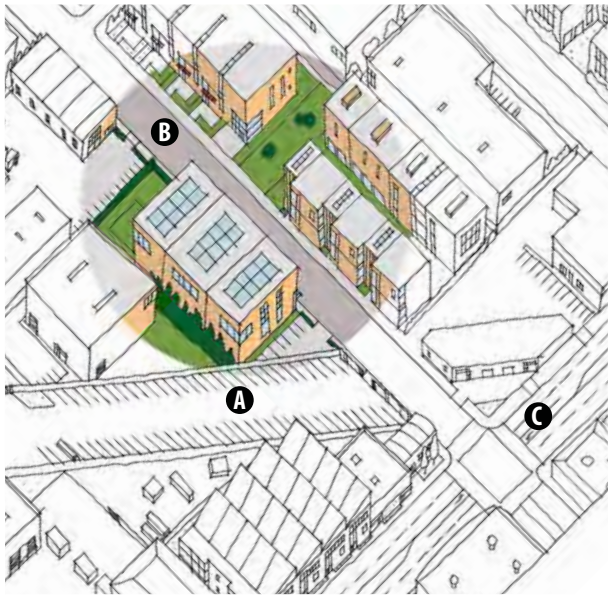


Neo-Industrial Bird's-Eye View

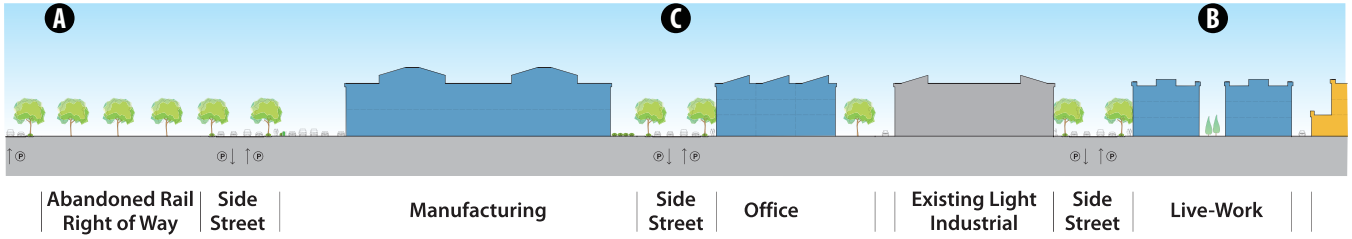
Innovative start-up businesses and creative design offices.

A ***Incorporate buffers between industrial and residential uses.***

B ***Provide better connections by improving bikeways and pedestrian pass-throughs along shared use alleys.***

C ***Enhance and encourage streetscape furnishings and amenities, street trees, medians, and parkways.***

Neo-Industrial Cross Section



LSA

FIGURE 4.1.12

Long Beach General Plan
Land Use and Urban Design Elements

Example of Views from Major Areas of Change:
Convert to Neo-Industrial Uses

SOURCE: City of Long Beach - Urban Design Element 2015

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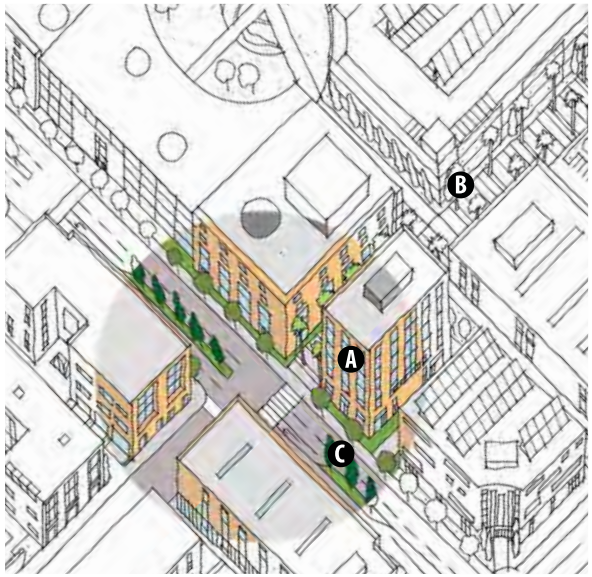


Regional-Serving Facility Bird's-Eye View

- **A** *Create campus identity through streetscape enhancement and architectural treatment.*
- **B** *Provide better connections by improving bikeways and pedestrian pass-throughs along shared use alleys.*
- **C** *Enhance and encourage streetscape furnishings and amenities, street trees, medians, and parkways.*

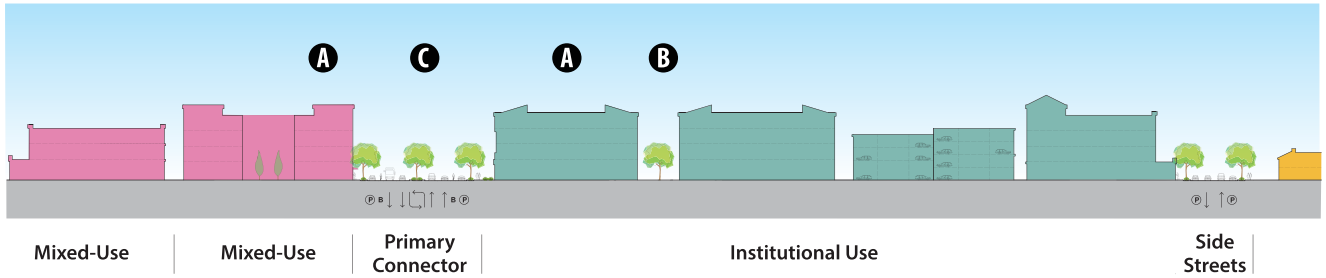
Miller Children's Hospital Long Beach.

Long Beach City College Liberal Arts Campus.

Long Beach Airport.

CSULB Student Recreation & Wellness Center.

Regional-Serving Facility Cross Section



LSA

FIGURE 4.1.13

Long Beach General Plan
Land Use and Urban Design Elements

Example of Views from Major Areas of Change:
Promote Regional-Serving Uses

SOURCE: City of Long Beach - Urban Design Element 2015

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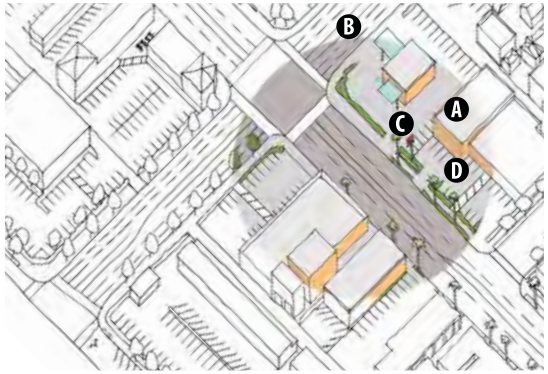
Located at Carson Street and the I-605 freeway, the Long Beach Towne Center offers a mix of retail, dining and entertainment uses.

The street wall encompasses the dynamic relationship amongst the building, building façade, sidewalk zone, and the street.

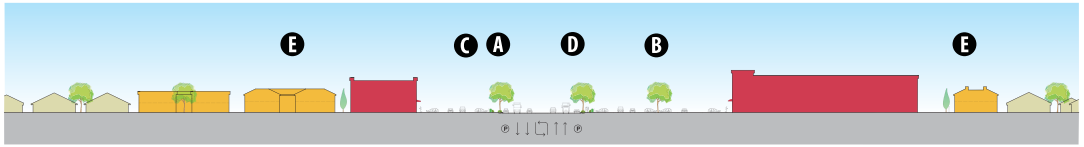
Auto-oriented development.



Community Commercial Centers and Corridors Bird's-Eye View

- **A** ***Improve sidewalk widths with future setbacks at new development.***
- **B** ***Provide landscaping as buffer from surface parking lots.***
- **C** ***Minimize curb cuts to increase pedestrian safety.***
- **D** ***Encourage streetscape furnishings and amenities.***
- **E** ***Transition from commercial to multifamily and single-family residential adjacent to neighborhoods.***

Community Centers and Corridors Cross Section



LSA

FIGURE 4.1.14

Long Beach General Plan
Land Use and Urban Design Elements

Example of Views from Major Areas of Change:
Transition from Industrial Uses to Commercial Uses

SOURCE: City of Long Beach - Land Use Element 2015, Urban Design Element 2015

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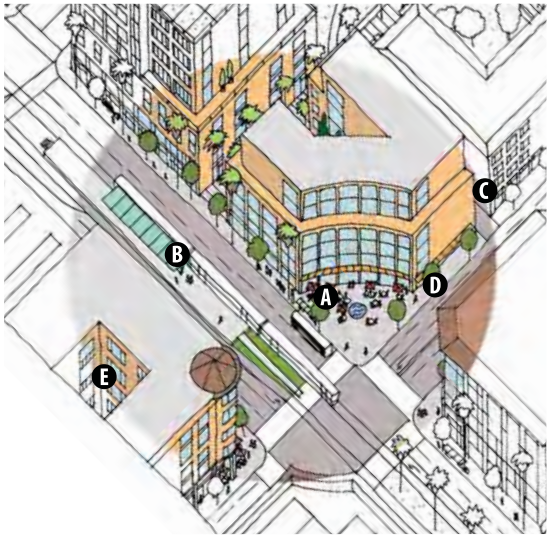
Olive Court condominiums are within a short walking distance to the Pacific Coast Highway Metro Blue Line Station.

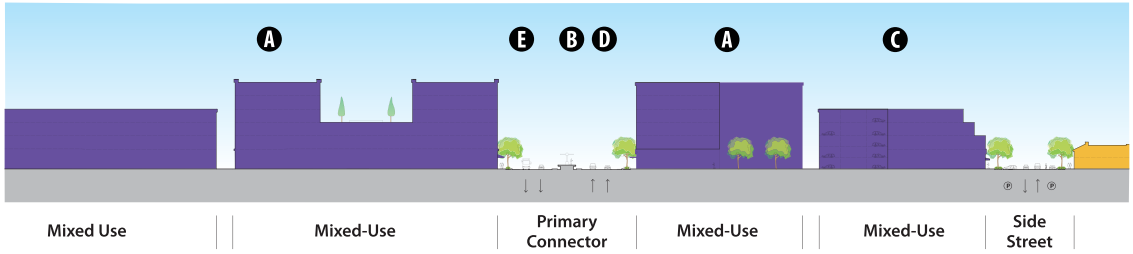
Transit-oriented development along transit lines.



Transit-Oriented Development Bird's-Eye

- **A** ***Ensure neighborhood amenities are within walkable proximity (i.e., parks, public facilities, commercial, transit).***
- **B** ***Develop entry to transit station.***
- **C** ***Provide off-street parking to alleviate on-street parking demands. Provide bicycle parking facilities to encourage bicycle use.***
- **D** ***Encourage streetscape furnishings and amenities.***
- **E** ***Provide courtyards, paseos, and public plazas.***

Transit-Oriented Development Cross Section



LSA

FIGURE 4.1.15

Long Beach General Plan
Land Use and Urban Design Elements

Example of Views from Major Areas of Change:
Promote Transit-Oriented Development Uses

SOURCE: City of Long Beach - Land Use Element 2015, Urban Design Element 2015

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1st Street Transit Gallery.

Urban residential apartments.

Pedestrian-friendly streetscape with enhanced paving.

LSA

FIGURE 4.1.16

Long Beach General Plan
Land Use and Urban Design Elements

Example of Views from Major Areas of Change:
Continue Downtown Development

SOURCE: City of Long Beach - Urban Design Element 2015

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The Long Beach Senior Arts Colony is within a block of the Anaheim Street Metro Blue Line Station.

Burnett Apartments is an example of infill development on Long Beach Boulevard, providing housing in close proximity to public transit.

LSA

FIGURE 4.1.17

Long Beach General Plan
Land Use and Urban Design Elements

Example of Views from Major Areas of Change:
Promote Infill and Redevelopment to Support Transit

SOURCE: City of Long Beach - Urban Design Element 2015

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Belmont Shore.

Jack Nichol Park.

Belmont Shore Pier.

LSA

FIGURE 4.1.18

Long Beach General Plan
Land Use and Urban Design Elements

Example of Views from Major Areas of Change:
Redevelop to Highest and Best Use

SOURCE: City of Long Beach - Land Use Element 2015, Urban Design Element 2015

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4.2 AIR QUALITY

4.2.1 Introduction

This section evaluates the potential air quality impacts associated with the construction and operation of potential development that would be allowed under the proposed General Plan Land Use Element and Urban Design Element (LUE/UDE) (proposed project). This analysis evaluates potential project-specific air quality effects by identifying potential air quality impacts that may occur within the planning area by assessing the effectiveness of mitigation measures incorporated as part of the design of the proposed project. This section is based on information provided in the Air Quality Element (1996) of the City of Long Beach's (City) General Plan, and the *Air Quality Impact Analysis* (LSA, June 2016) (Appendix B).

4.2.2 Methodology

Evaluation of air quality impacts associated with the proposed project includes the following:

- Determination of the proposed project's consistency with the South Coast Air Quality Management District's (SCAQMD) Air Quality Management Plan (AQMP);
- Determination whether the project-related emissions would violate State air quality standards or contribute to an existing air quality violation within the South Coast Air Basin (Basin); and,
- Determination of whether or not the proposed project would have an impact on proximate sensitive receptors.

4.2.3 Existing Environmental Setting

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

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

The planning area is currently developed and consists of a mix of residential, commercial, medical, institutional, and open space and recreation uses. These uses currently generate criteria air pollutants

from natural gas use for energy, heating and cooking, vehicle trips associated with each land use, and area sources such as landscaping equipment and consumer cleaning products.

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

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

The annual average temperature varies throughout the Basin, ranging from the low- to middle-60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas (including the City of Long Beach) show less variability in annual minimum and maximum temperatures than inland areas. The monthly average maximum temperature in Long Beach ranges from 65.2°F in January to 80.7°F in August. The monthly average minimum temperature ranges from 44.8°F in January to 62.1°F in August.[1] January is typically the coldest month, and July and August are typically the warmest months in this area of the Basin.

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

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

Winds in Long Beach blow predominantly from the west–northwest, with relatively low velocities.[2] Wind speeds in Long Beach average between 7 miles per hour (mph) and 4 mph. Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the Basin.

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1 Western Regional Climate Center, 2015.
2 Ibid.

Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months and disperse air contaminants. The Santa Ana conditions tend to last for several days at a time.[1]

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

Regional Air Quality. Both the State and Federal governments have established health-based ambient air quality standards (AAQS) for six criteria air pollutants:[2] carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Long-term exposure to elevated levels of criteria pollutants may result in adverse health effects. However, emission thresholds established by an air district are used to manage total regional emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations and could adversely affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the Basin-wide context of individual project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_X) and reactive organic gases (ROG).

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

---

1 Western Regional Climate Center, 2015.

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

Toxic Air Contaminants. In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated by the United States Environmental Protection Agency (EPA) and the California Air Resources Board (ARB). Some examples of TACs include benzene, butadiene, formaldehyde, and hydrogen sulfide. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants.

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

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

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.[2] The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and Federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. The ARB anticipates that by 2020, average statewide diesel particulate matter concentrations will decrease by 85 percent from 2000 levels with full implementation of the ARB's Diesel Risk Reduction Plan,[3] meaning that the statewide health risk from diesel particulate matter is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000.

Table 4.2.A summarizes the sources and health effects of criteria air pollutants mentioned above. Table 4.2.B presents a summary of State and Federal AAQS.

---

1 California Air Resources Board, 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

2 Ibid.

3 Ibid.

Table 4.2.A: Sources and Health Effects of Criteria Air Pollutants

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

Source: California Air Resources Board (ARB) (2015).

Table 4.2.B: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
Ozone[h] (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10})[i]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		–		
Fine Particulate Matter ($PM_{2.5}$)[i]	24-Hour	No separate State standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	–	Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–	–	
Nitrogen Dioxide (NO_2)[j]	1-Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	–	Gas Phase Chemilumi-nescence
	Annual Arithmetic Mean	0.03 ppm (57 µg/m^3)		53 ppb (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[k]	1-Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	–	Ultraviolet Fluorescence; Spectrophoto-metry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1300 µg/m^3)	
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[i]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[i]	–	
Lead (Pb)[l, m]	30-Day Average	1.5 µg/m^3	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m^3 (for certain areas)[k]	Same as Primary Standard	
	Rolling 3-Month Average[i]	–		0.15 µg/m^3		
Visibility-Reducing Particles[n]	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[j]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: California Air Resources Board (October 1, 2015).
Table notes are provided on the following page.

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

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

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

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

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

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

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

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

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

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

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

[l] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[m] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of ppb. California standards are in units of ppm. To directly compare the 1-hour national standards to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

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

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

The ARB is required to designate areas of the State as attainment, nonattainment, or unclassified for all State standards. An *attainment* designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A *nonattainment* designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An *unclassified* designation signifies that data do not support either an attainment or nonattainment status. The California Clean Air Act (CCAA) divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for O_3, CO, and NO_2 as not meeting the primary standards, or cannot be classified, or better than national standards. For SO_2, areas are designated as not meeting the primary standards, not meeting the secondary standards, cannot be classified, or better than national standards. Table 4.2.C provides a summary of the attainment status for the Basin with respect to Federal and State AAQS.

Table 4.2.C: Attainment Status of Criteria Pollutants in the South Coast Air Basin

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

Source: California Air Resources Board (2014).
[1] Except in Los Angeles County.
ARB = California Air Resources Board
CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SO_2 = sulfur dioxide

Local Air Quality. Air quality monitoring stations are located throughout the nation and are maintained by the local air pollution control district and State air quality regulating agencies. The SCAQMD, together with the ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the monitoring station in Long Beach located at 2425 Webster Street. The air quality data from this station are used to represent the ambient air quality in Long Beach.

Pollutant monitoring results for the years 2012 to 2014 at the 2425 Webster Street ambient air quality monitoring station in Long Beach are shown in Table 4.2.D. As indicated in the monitoring data, no violations of the State and Federal PM_{10} standard occurred during the 3-year period. $PM_{2.5}$ levels exceeded the Federal standard twice in 2014, twice in 2013, and four times in 2012. Neither State nor

Table 4.2.D: Ambient Air Quality Monitored at the Long Beach–2425 Webster Street Station

Pollutant	Standard	2012	2013	2014
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		4.2	4.1	3.7
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		2.6	2.6	2.6
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.080	0.090	0.087
Number of days exceeded:	State: > 0.09 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.067	0.070	0.072
Number of days exceeded:	State: > 0.070 ppm	0	0	1
	Federal: > 0.075 ppm	0	0	0
Coarse Particulates (PM_{10})				
Maximum 24-hour concentration ($\mu g/m^3$)		45.0[1]	37.0[1]	84.0
Number of days exceeded:	State: > 50 $\mu g/m^3$	0	0	ND
	Federal: > 150 $\mu g/m^3$	0	0	0
Annual arithmetic average concentration ($\mu g/m^3$)		23.2[1]	24[1]	ND
Exceeded for the year:	State: > 20 $\mu g/m^3$	Yes	Yes	ND
	Federal: > 50 $\mu g/m^3$	No	No	ND
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration ($\mu g/m^3$)		58.6[1]	51.7[1]	51.5[1]
Number of days exceeded:	Federal: > 35 $\mu g/m^3$	4	2	2
Annual arithmetic average concentration ($\mu g/m^3$)		10.4[1]	11.3[1]	11.4[1]
Exceeded for the year:	State: > 12 $\mu g/m^3$	No	No	No
	Federal: > 15 $\mu g/m^3$	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.098	0.081	0.136
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.025	0.021	0.020
Exceeded for the year:	Federal/State: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)				
Maximum 24-hour concentration (ppm)		0.004	0.004	ND
Number of days exceeded:	State: > 0.04 ppm	0	0	ND
	Federal: > 0.14 ppm	0	0	ND
Annual arithmetic average concentration (ppm)		ND	ND	ND
Exceeded for the year:	Federal: > 0.030 ppm	ND	ND	ND

Source: ARB (2015) and EPA (2015).
[1] Data from the 3648 Long Beach Boulevard monitoring site.
ND = No data. There was insufficient (or no) data to determine the value.
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
ARB = California Air Resources Board
EPA = United States Environmental Protection Agency

Federal 1-hour ozone standards were exceeded in the 3-year period. The State 8-hour ozone standard was exceeded in 2014, but not in 2013 or 2012. The State and Federal CO, SO_2, and NO_2 standards were also not exceeded in this area during the 3-year period.

Existing City of Long Beach Criteria Air Pollutant Emissions Inventory. Table 4.2.E identifies the existing criteria air pollutant emissions inventory of the City of Long Beach using emission rates for year 2012 (existing conditions) and year 2040 (future conditions without the proposed project). The inventories are based on existing land uses that occur within the proposed LUE/UDE Areas of Change. The year 2012 inventory represents the estimated emissions generated by the existing land uses using the baseline year 2012 emission factors for on-road vehicles. The year 2040 inventory represents the projected emissions that the existing land uses would generate in the future utilizing year 2040 emission factors for on-road vehicles.

Table 4.2.E: Existing City of Long Beach Regional Criteria Air Pollutant Emissions Inventory

Sector	Criteria Air Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Existing Condition Year 2012						
Transportation (2012 emission factors)[1]	4,265.95	9,090.11	36,209.28	52.23	188.98	179.54
Energy, Residential (natural gas use)	0.12	10.48	4.46	0.07	0.85	0.85
Energy, Commercial + Industrial (natural gas use)	1.05	9.59	8.06	0.06	0.73	0.73
Area, Landscaping/Consumer Products[2]	0.51	0.31	8.08	0.00	0.04	0.04
Existing Land Uses Total	4,267.64	9,110.50	36,229.88	52.36	190.60	181.16
Existing General Plan Year 2040						
Transportation (2040 emission factors)[1]	932.54	1,707.34	6,564.44	33.75	16.03	14.91
Energy, Residential (natural gas use)	1.54	13.19	5.61	0.08	1.07	1.07
Energy, Commercial + Industrial (natural gas use)	1.06	9.65	8.11	0.06	0.73	0.73
Area, Landscaping/Consumer Products[2]	0.55	0.36	8.82	0.00	0.04	0.04
Existing General Plan Year 2040 Emission Total	935.69	1,730.53	6,586.98	33.89	17.87	16.75

Source:
1 EMFAC2014 based on daily vehicle miles traveled (VMT) provided by LSA. Transportation sector includes the full trip length for internal-internal trips and 50 percent trip length for external-internal/internal-external trips. VMT per year based on a conversion of VMT × 347 days per year to account for less travel on weekend, consistent with ARB statewide GHG emissions inventory methodology (ARB 2008).
2 Electricity and natural gas usage data provided by Southern California Edison and City of Long Beach Oil and Gas, respectively.
3 NONROAD emissions estimated based on population for landscaping emissions and employment estimates for light commercial equipment. Estimates were based on population and employment data calculated using a percentage reflective of the City of Long Beach included in the Los Angeles County data included in the SCAG 2016 RTP/SCS. Excludes fugitive emissions from paved and unpaved surfaces and wood-burning fireplaces. Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the Land Use Element would require permitting and would be subject to further study pursuant to SCAQMD Regulation XIII, New Source Review. Because the nature of those emissions cannot be determined at this time because they are subject to further regulation and permitting, they are not considered for purposes of this analysis.
ARB = California Air Resources Board
CO = carbon monoxide
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
SCAG = Southern California Association of Governments
SO_X = oxides of sulfur
VOC = volatile organic compounds

Criteria air pollutant emissions generated within the proposed LUE/UDE Areas of Change were estimated using EMFAC2014, NONROAD, and data provided by Southern California Gas Company (SoCal Gas) for natural gas use. Emissions within the City of Long Beach come from the following sources:

- **Transportation:** Based on the Traffic Impact Analysis (TIA) (LSA 2016) prepared for the proposed project, the existing 2012 vehicle traffic within the identified Areas of Change is approximately 321,662 average daily trips (ADT). These trips are associated with the existing residential development, commercial facilities, and industrial facilities within the Areas of Change. Based on the information in the existing General Plan and 2012 Southern California Association of Governments' (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) transportation forecast, the traffic is estimated to increase to a total of 345,672 ADTs in year 2040 (i.e., without the proposed project).
- **Area Sources:** Emissions from lawn and garden equipment use, and commercial equipment use.
- **Energy:** Emissions generated from natural gas consumption used for cooking and heating in the City.

4.2.4 Regulatory Setting

Federal Regulations.

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

State Regulations.

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

California Air Resources Board Handbook. The California ARB has developed an *Air Quality and Land Use Handbook* (Handbook) (2005), which is intended to serve as a general reference

guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. According to the ARB Handbook, recent air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high-traffic roadways. Other studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California. The ARB Handbook recommends that planning agencies strongly consider proximity to these sources when finding new locations for "sensitive" land uses such as homes, medical facilities, daycare centers, schools, and playgrounds.

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

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

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

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

Local and Regional Policies and Regulations.

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

regulations, establishes permitting requirements, inspects emissions sources, and enforces such measures though educational programs or fines, when necessary.

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

- **Regulation IV – Prohibitions:** This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air pollutant emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events.
    - **Rule 402 – Nuisance:** This rule restricts the discharge of any contaminant in quantities that cause or have a natural ability to cause injury, damage, nuisance, or annoyance to businesses, property, or the public. The proposed project does not plan on discharging any contaminants in quantities that would cause injury to the public or property. Future development resulting from approval of the project will comply with Rule 402.
    - **Rule 403 – Fugitive Dust:** This rule requires the prevention, reduction, or mitigation fugitive dust emissions from a project site. Rule 403 restricts visible fugitive dust to a project property line, restricts the net PM_{10} emissions to less than 50 micrograms per cubic meter ($\mu g/m^3$) and restricts the tracking out of bulk materials onto public roads. Additionally, Rule 403 requires an applicant to utilize one or more of the best available control measures (identified in the tables within the rule). Mitigation measures may include adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers, and/or ceasing all activities. Finally, Rule 403 requires that a contingency plan be prepared if so determined by the EPA. Future development resulting from approval of the project will comply with Rule 403.
- **Regulation XI – Source Specific Standards:** Regulation XI sets emissions standards for different sources.
    - **Rule 1113 – Architectural Coatings:** This rule limits the amount of volatile organic compounds (VOCs) from architectural coatings and solvents, which lowers the emissions of odorous compounds.

The SCAQMD is responsible for demonstrating regional compliance with ambient air quality standards but has limited indirect involvement in reducing emissions from fugitive, mobile, and natural sources. To that end, the SCAQMD works cooperatively with the ARB, the SCAG, County transportation commissions, local governments, and other Federal and State government agencies. It has responded to this requirement by preparing a series of AQMPs to meet the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). The SCAQMD and the SCAG are responsible for formulating and implementing the AQMP, which has a 20-year horizon for the Basin. The SCAQMD and SCAG must update the AQMP every 3 years. The current regional air quality plan is the Final 2012 AQMP adopted by the SCAQMD on December 7, 2012.

The AQMP is the region's Clean Air Plan, which guides the region's air quality planning efforts to attain the CAAQS. The SCAQMD's 2012 AQMP contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_X), particulate matter, and greenhouse gas (GHG) emissions. At the end of the 2012 AQMP process, the SCAQMD initiated the 2016 AQMP shortly after the adoption of the 2012 AQMP. The SCAQMD has developed the 2016 AQMP (SCAQMD 2016), which incorporates the latest scientific and technological information

and planning assumptions, including the 2016 RTP/SCS, and updated emission inventory methodologies for various source categories.

The upcoming 2016 AQMP will develop integrated strategies and measures to meet the following NAAQS:

- 8-hour Ozone (O_3) (75 parts per billion [ppb]) by 2032;
- Annual $PM_{2.5}$ (12 µg/m3) by 2021–2025;
- 8-hour O_3 (80 ppb) by 2024 (updated from the 2007 and 2012 AQMPs);
- 1-hour O_3 (120 ppb) by 2023 (updated from the 2012 AQMP); and
- 24-hour $PM_{2.5}$ (35 µg/m^3) by 2019 (updated from the 2012 AQMP).

The 2016 AQMP will also take an initial look at the new 2015 Federal 8-hour ozone standard (70 ppb), as well as incorporate energy, climate, transportation, goods movement, infrastructure, and other planning efforts that affect future air quality. The most significant air quality challenge in the Basin is to reduce NO_X emissions sufficiently to meet the upcoming ozone standard deadlines. Based on preliminary analyses, the approximately 580 tons per day (tpd) of total Basin NO_X emissions are projected to drop to approximately 300 tpd and 250 tpd in the attainment years of 2023 and 2031 respectively, due to continued implementation of already adopted control measures.

The primary challenge is that mobile sources currently contribute about 88 percent of the region's total NO_X emissions, and SCAQMD has limited authority to regulate mobile sources. SCAQMD is working closely with the California ARB and EPA, which have primary authority over mobile sources to ensure mobile sources do their fair share of pollution reduction.

Since NO_X emissions also lead to the formation of $PM_{2.5}$, the NO_X reductions needed to meet the ozone standards will lead to significant improvements in $PM_{2.5}$ levels. The 2016 AQMP will include $PM_{2.5}$ control strategies as needed to ensure that the $PM_{2.5}$ NAAQS will also be met on time.

The SCAQMD adopted land use planning guidelines in the May 2005 *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning* which, like the Handbook, also consider impacts to sensitive receptors from facilities that emit TACs. The SCAQMD's distance recommendations are the same as those provided by the ARB (e.g., the same siting criteria for distribution centers and dry cleaning facilities). The SCAQMD's document introduces land use-related policies that rely on design and distance parameters to manage potential health risk. These guidelines are voluntary initiatives recommended for consideration by local planning agencies.

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

Although SCAG is not an air quality management agency, it is responsible for developing transportation, land use, and energy conservation measures that affect air quality. SCAG's Regional Comprehensive Plan (RCP) provides growth forecasts that are used in the development of air quality–related land use and transportation control strategies by the SCAQMD. The RCP is a framework for decision-making for local governments, assisting them in meeting Federal and State mandates for growth management, mobility, and environmental standards, while maintaining consistency with regional goals regarding growth and changes through the year 2015, and beyond. Policies within the RCP include consideration of air quality, land use, transportation, and economic relationships by all levels of government.

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

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

4.2.5 City of Long Beach General Plan

City of Long Beach General Plan Air Quality Element. The adopted City of Long Beach General Plan addresses air quality in the Air Quality Element[1] and contains goals and policies and actions in relation to government organization roles and responsibilities, ground transportation, air transportation, land use, particulate emissions, energy conservation, and education.

City of Long Beach General Plan Mobility Element. The Mobility Element[2] of the City of Long Beach General Plan aims at creating a safe, efficient, balanced and multimodal mobility network, maintaining and enhancing air, ground, and water transportation capacity, and leading the region by example with innovative and experimental practices, and includes goals, policies and actions that help reduce air pollutants and GHG emissions through more efficient transportation.

The goals and policies of the City's Air Quality Element and Mobility Element organized by topic that are applicable to the proposed project are identified below in Table 4.2.F.

City of Long Beach Sustainable City Action Plan. The City of Long Beach's Sustainable City Action Plan (SCAP) was adopted in February 2010.[3] The SCAP is intended to guide operational, policy, and financial decisions to create a more sustainable Long Beach. The SCAP includes initiatives, goals and actions that will move Long Beach toward becoming a sustainable city. These goals and actions included in the SCAP relate to the following:

- Buildings & Neighborhoods
- Energy
- Green Economy & Lifestyle
- Transportation
- Urban Nature
- Waste Reduction
- Water

4.2.6 Proposed Land Use Element Strategies and Policies

The following proposed Goals, Strategies, and Policies are applicable to the analysis of Air Quality:

Land Use Element.

- **Strategy No. 15:** Protect neighborhoods from adverse environmental conditions.
- **LU Policy 15-1:** Develop public health and environmental protection programs that promote equity and that provide for the fair treatment of all Long Beach residents, regardless of race, age, culture, income, or geographic location.

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1 City of Long Beach. 1996. *Long Beach General Plan*. December.
2 Long Beach, City of, 2013. *Long Beach General Plan*. October.
3 Long Beach, City of, 2010. *City of Long Beach Sustainably City Action Plan*. February.

Table 4.2.F: City of Long Beach General Plan Goals and Policies Applicable to the Project

Air Quality Element
Governmental Organization, Roles, and Responsibility
Goal 1: Effective coordination of air quality improvement efforts in the South Coast Air Basin, the Southeast Los Angeles County (SELAC) subregion of SCAG, and other agencies.
Policy 1.1: Establish a Coordinated Approach. Coordinate with other jurisdictions in the South Coast Air Basin a continuation of the consortium to establish air quality plans and implementation programs where practical.
Policy 1.2: Encourage Community Participation. Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.
Ground Transportation
Goal 2: A diverse and efficient ground transportation system that minimizes air pollutant emissions.
Policy 2.1.1: Reduce Vehicle Trips. Use incentives, regulations, and transportation demand management techniques, in cooperation with other jurisdictions in the South Coast Air Basin to eliminate vehicle trips that would otherwise occur.
Policy 2.1.2: Reduce Vehicle Miles Traveled. Use incentives, regulations, and transportation demand management in cooperation with other jurisdictions in the South Coast Air Basin, to reduce vehicle miles traveled.
Policy 2.1.3: Increase Cost-Effectiveness of Transportation and Parking Systems. Make cost-effective improvements to transportation and parking systems that will reduce traffic congestion and resulting emissions.
Policy 2.2.1: Modify Work Schedules. Promote and establish modified work schedules that reduce peak period auto travel.
Policy 2.3.1: Expand Transit in the City and the Region. Cooperate in efforts to expand all forms of mass transit within the City and the South Coast Air Basin.
Policy 2.4.1: Promote Non-Motorized Transportation. Promote convenient and continuous bicycle paths and pleasant pedestrian environments that will encourage non-motorized travel within the City.
Policy 2.5.1: Manage the Parking Supply. Manage the City's parking supply to inhibit auto use, while ensuring that economic development goals are not sacrificed.
Policy 2.6.1: Support Legislation. Participate with other local governments in seeking State and Federal legislation to improve vehicle/transportation technology and establish a direct link between the true cost of emissions and the sources of pollution.
Policy 2.6.2: Fleet Conversion to Clean Fuels. Play a leadership role in the conversion to clean fuels by promoting the increased use of compressed natural gas (CNG), electric vehicles, and other alternative fuels.
Air Transportation
Goal 3: Minimum feasible emissions from Long Beach Airport.
Policy 3.1: Promote Improved Technology. Promote the use of the best available technology to reduce emissions from aircraft frequenting the Long Beach Airport.
The Port of Long Beach
Goal 4: Minimum feasible emissions from the Ports of Long Beach and Los Angeles.
Policy 4.1: Minimize emissions from ships.
Policy 4.2: Reduce the impacts of rail-related emissions on Long Beach neighborhoods and the downtown.
Policy 4.3: Monitor particulate pollution at the Ports and locations downwind, and pursue methods of reducing emissions while accommodating needed growth.
Policy 4.3: Monitor particulate pollution at the Ports and locations downwind, and pursue methods of reducing emissions while accommodating needed growth.
Land Use
Goal 5: A pattern of land uses that can be efficiently served by a diversified transportation system and that directly and indirectly minimizes air pollutants.
Policy 5.1: Manage Growth. Regulate land use and promote development in a manner that will support established transit services and reduce the need for the automobile.

Table 4.2.F: City of Long Beach General Plan Goals and Policies Applicable to the Project

Policy 5.2: Balance Growth. Improve the balance between jobs and housing to create a more efficient urban form.
Particulate Emissions
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.
Energy Conservation
Goal 7: Reduce emissions through reduced energy consumption.
Policy 7.1: Energy Conservation. Reduce energy consumption through conservation improvements and requirements.
Policy 7.2: Recycle Wastes. Promote local recycling of wastes and the use of recycled materials.
Education
Goal 8: Education of City residents concerning air quality, energy, and congestion issues, and the need to modify present travel behavior and energy consumption patterns.
Policy 8.1: Promote Public Education Programs at the Local, Subregional, and Regional Level to Encourage Residents to Modify their Behavior to Reduce Automobile Trips. Coordinate with the Long Beach Unified School District, the Long Beach City College, California State University Long Beach, the American Lung Association, other jurisdictions and agencies, and environmental groups in the development of programs and campaigns to increase awareness of, and the number of stakeholders in, air quality, energy, and congestion issues.
Mobility Element
Mobility of People
Goal 1: Create a safe, efficient, balanced, and multimodal mobility network.
Strategy 1: Establish a network of complete streets that complements the related street type.
Policy 1-9: Increase mode shift of transit, pedestrians, and bicycles.
Policy 1-12: Encourage large employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education, and preferential parking for carpools/vanpools.
Policy 1-17: Develop land use policies that focus development potential in locations best served by transit.
Strategy 2: Reconfigure streets to emphasize their modal priorities.
Policy 2-17: Ensure safe, convenient, and adequate, on- and off-street bicycle parking facilities to accommodate and encourage residents to cycle for commuting and daily needs.
Strategy 3: Strategically improve congested intersections and corridors.
Policy 4-3: Develop a new Multimodal Level of Service (MMLOS) methodology that includes the following components: • Emphasis on pedestrian and bicycle access and circulation. • Maintenance of appropriate emergency vehicle access and response time. • Support for reduced vehicle miles traveled. • Considers, but does not deem, auto congestion in Downtown or Long Beach Boulevard TOD district to be an impact.
Strategy 5: Reduce the environmental impacts of the transportation system.
Policy 5-2: Reduce vehicle miles traveled (VMT) and vehicle trips through the use of alternative modes of transportation and Transportation Demand Management.
Policy 5-3: Encourage the use of low- or no-emission vehicles to reduce pollution.
Policy 5-4: Promote car-sharing and Neighborhood Electric Vehicle ownership as an important means to reduce traffic congestion.
Policy 5-5: Sustain the recent improvements in air quality and achieve further significant progress in such improvements to meet State and federal mandates.

Table 4.2.F: City of Long Beach General Plan Goals and Policies Applicable to the Project

Strategy 6: Manage the supply of parking.
Policy 6-3: Where appropriate, encourage the conversion of on-street parking space for expanded sidewalk widths or landscaping.
Policy 6-7: Support using parking supply and pricing as a strategy to encourage use of non-automobile modes where feasible.
Policy 6-8: Where applicable, encourage users to park once to meet all of their travel needs within the City.
Policy 6-11: Encourage the use of transit, carpooling, and walking to reduce the need for parking.
Policy 6-12: Promote transit-oriented development with reduced parking requirements around appropriate transit hubs and stations to facilitate the use of available transit services.
Policy 6-13: Consider reducing parking requirements for mixed-use developments, for developments providing shared parking or a comprehensive Transportation Demand Management (TDM) Program, or developments located near major transit hubs.
Policy 6-15: Encourage and provide incentives for commercial, office, and industrial development to provide preferred parking for carpools, vanpools, electric vehicles, and flex cars.
Mobility of Goods
Goal 3: Lead the region by example with innovative and experimental practices.
Strategy 10: Be a leader in regional cooperation on transportation issues.
Strategy 11: Adapt mobility strategies and programs based on new concepts and technologies that reduce environmental impacts and increase quality of life.
Strategy 12: Develop freight-related improvements consistent with the regional transportation network.
Policy 13-2: Reduce truck congestion and parking impacts on city streets.
Strategy 14: Reduce the air quality impacts of freight transportation and Port-related traffic.
Policy 14-1: Provide for the efficient, clean, and safe movement of goods to support commerce and industry.
Policy 14-2: Adopt and enforce truck routes to minimize the impacts of truck emissions on the community.
Policy 14-3: Reduce congestion on freeways and designated truck routes.
Policy 14-4: Encourage ridesharing activities within the Harbor District to reduce vehicle miles traveled (VMT) and parking space requirements in compliance with the South Coast Air Quality Management District requirements.

Source: City of Long Beach, General Plan Air Quality Element (1996); General Plan Mobility Element (2013).

- **LU Policy 15-2:** Continue to work with the State, the Port of Los Angeles, and other agencies and organizations to improve air quality around the ports and reduce vessel, truck, rail, and other equipment emissions from port operations.
- **LU Policy 15-3:** Continue to be an advocate for residential neighborhoods that will be adversely affected by major port-related facility expansion projects.
- **LU Policy 15-4:** Work with regional agencies, residents, and businesses to preserve established homes, businesses, and open spaces; limit the exposure of toxic pollutants and vehicle noise and minimize traffic issues impacting residential neighborhoods as a result of the I-710 Freeway expansion.
- **LU-M-48:** Continue to develop and implement innovative programs aimed at reducing the air pollutants from port operations (e.g., San Pedro Bay Clean Air Action Plan, Clean Truck Programs, Main Engine Low-Sulfur Fuel Incentive Program, and Shoreside Electricity).
- **North Long Beach Land Use Strategy 1:** Consolidate the intensity of commercial activities into neighborhood-serving nodes, at major corridor crossroads, and in expanded commercial centers.

- **North Long Beach Land Use Strategy 2:** Facilitate the development of new multiple-family housing along corridors between commercial nodes and centers.
- **North Long Beach Land Use Strategy 3:** Buffer heavy industrial activities from residential uses by encouraging Neo Industrial and commercial conversions of some industrial properties.
- **North Long Beach Land Use Strategy 4:** Along Cherry Avenue, Paramount Boulevard, and Downey Avenue, use the Neo Industrial PlaceType to develop cleaner and more attractive commercial/industrial properties.
- **North Long Beach Land Use Strategy 5:** Upgrade the quality of development by using design guidelines, new zoning standards, and improved design review processes to ensure that all new buildings, remodels, and additions enhance the neighborhood fabric.
- **North Long Beach Land Use Strategy 6:** Use design guidelines and upgraded zoning standards to further protect established residential districts from the intrusion of commercial activities.
- **North Long Beach Land Use Strategy 7:** Continue to implement the North Long Beach Strategic Guide for Development and North Long Beach Street Enhancement Master Plans (originated under the Redevelopment Agency) including the North Village and North Library plans.
- **North Long Beach Land Use Strategy 8:** Seek opportunities to create open recreation and green areas, and implement the RiverLink Plan for the Los Angeles River.
- **North Long Beach Land Use Strategy 9:** Implement the I-710 Livability Plan.
- **North Long Beach Land Use Strategy 10:** Implement Mobility Element capital improvements for North Long Beach include:
    - Artesia Boulevard Complete Streets Improvements.
    - Atlantic Avenue Streetscape Enhancements.
    - South Street Signal Improvements.
    - Market Street Enhanced Bikeway Access.
    - Walnut Avenue Bikeway.

4.2.7 Thresholds of Significance

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

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

Threshold 4.2.2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

Threshold 4.2.3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

Threshold 4.2.4: Expose sensitive receptors to substantial pollutant concentrations; or

Threshold 4.2.5: Create objectionable odors affecting a substantial number of people.

4.2.8 Standard Conditions and Project Design Features

Standard Conditions (SCs) are specific standards imposed uniformly by the approving agency based on the proposed action taken and are required of the proposed project to reduce its potential environmental effects. Because these features are standard, they do not constitute mitigation measures. The following Standard Condition would apply to the proposed project with respect to air quality.

SC AQ-1 To ensure compliance with South Coast Air Quality Management District (SCAQMD) rules and provide Best Management Practices (BMPs) to reduce air pollutant emissions during construction of future projects facilitated under the proposed project, the construction contractor shall implement the following BMPs during construction, where feasible, to further reduce emissions from these sources.

- Install temporary construction power supply meters on site and use this to provide power to electric power tools whenever feasible. If temporary electric power is available on site, forbid the use of portable gasoline- or diesel-fueled electric generators.
- Use of diesel oxidation catalysts and/or catalyzed diesel particulate traps on diesel equipment, as feasible.
- Maintain equipment according to manufacturers' specifications.
- Restrict idling of equipment and trucks to a maximum of 5 minutes (per California Air Resources Board [ARB] regulation).
- Phase grading operations to reduce disturbed areas and times of exposure.
- Avoid excavation and grading during wet weather.
- Limit on-site construction routes and stabilize construction entrance(s).
- Remove existing vegetation only when absolutely necessary.
- Sweep up spilled dry materials (e.g., cement, mortar, or dirt track-out) immediately. Never attempt to wash them away with water. Use only minimal water for dust control.
- Store stockpiled materials and wastes under a temporary roof or secured plastic sheeting or tarp.
- Properly dispose of all demolition wastes. Materials that can be recycled from demolition projects include: metal framing, wood, concrete, asphalt, and plate glass. Unusable, un-recyclable debris should be confined to dumpsters, covered at night, and taken to a landfill for disposal.
- Hazardous debris such as asbestos must be handled in accordance with specific laws and regulations and disposed of as hazardous waste. For more information on asbestos handling and disposal regulations, contact the SCAQMD.

4.2.9 Project Impacts

As described in Chapter 3.0, Project Description, of this Draft EIR, major land use changes proposed as part of the LUE/UDE are identified as Major Areas of Change, and include eight primary change areas associated with the updated LUE.

- The first Major Area of Change involves the creation of more open space throughout the City. Areas targeted for the establishment of the Open Space PlaceType include small pockets of land along the Los Angeles River, two strips of land along State Route 103 and an abandoned railroad in the northern area of the City, a large portion of the Southeast Area Development and Improvement Plan (SEADIP) area, and pockets of land scattered throughout the City.
- The second Major Area of Change proposes to buffer industrial activities from existing neighborhoods by encouraging the conversion of some industrial uses to Neo Industrial uses. Areas targeted for the establishment of the Neo-Industrial PlaceType include existing industrial areas in the northern portion of the City and a larger industrial area along the Los Angeles River, just north of the City's Downtown.
- The third Major Area of Change aims to promote Regional-Serving Uses by maintaining existing regional-serving facilities throughout the City.
- The fourth Major Area of Change proposes to provide land use transitions from industrial to commercial uses in small areas in the northern portion of the City and in the area directly east of the Long Beach Airport.
- The fifth Major Area of Change aims to promote transit-oriented development along Long Beach Boulevard as part of a larger Citywide effort to reduce automobile dependence in the City.
- The sixth Major Area of Change aims to continue development in the Downtown area.
- The seventh Major Area of Change aims to promote infill and redevelopment to support transit along Redondo and Cherry Avenues and near the Traffic Circle.
- The eighth Major Area of Change aims to redevelop sites within the City to their "highest and best use." The sites targeted for redevelopment are located within the SEADIP area, in the southeastern portion of the City.

In total, the LUE proposes changes to approximately 13 percent of the land area (or the equivalent of 4,180 acres) in the City. Construction associated with implementation of the LUE would occur over a period of approximately 15 to 24 years.

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

Less than Significant Impact.

The proposed project site is located within the Basin and is within the jurisdiction of the SCAQMD. Basin-wide air pollution levels are monitored by the SCAQMD through the AQMP. The current

regional AQMP is the *2012 Final Air Quality Management Plan*[1] adopted by the SCAQMD on December 7, 2012. The *2012 Final Air Quality Management Plan* proposes attainment demonstration of the Federal particulate matter less than 2.5 microns in size ($PM_{2.5}$) standards through a more focused control of sulfur oxides (SO_X), directly-emitted $PM_{2.5}$, and nitrogen oxides (NO_X) supplemented with reactive organic gases (ROG) by 2015. The 8-hour ozone control strategy builds upon the $PM_{2.5}$ strategy, augmented with additional NO_X and ROG reductions to meet the standard by 2024 assuming a bump-up[2] is obtained.
As previously identified, at the end of the 2012 AQMP process, the SCAQMD initiated the 2016 AQMP shortly after the adoption of the 2012 AQMP. The upcoming 2016 AQMP will develop integrated strategies and measures to meet the following NAAQS:

- 8-hour O_3 (75 ppb) by 2032
- Annual $PM_{2.5}$ (12 μg/m^3) by 2021–2025
- 8-hour O_3 (80 ppb) by 2024 (updated from the 2007 and 2012 AQMPs)
- 1-hour O_3 (120 ppb) by 2023 (updated from the 2012 AQMP)
- 24-hour $PM_{2.5}$ (35 μg/m^3) by 2019 (updated from the 2012 AQMP)

The AQMP control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections. The AQMP uses the assumptions and projections of local planning agencies to determine control strategies for regional compliance status. Since the AQMP is based on local land use plans, projects that are deemed consistent with local land use plans are found to be consistent with the AQMP.

CEQA requires that general plans be evaluated for consistency with the AQMP. Only new or amended general plan elements, specific plans, and major projects need to undergo a consistency review. Projects that are consistent with the local general plan are considered consistent with the AQMP. There are two key indicators of consistency:

- **Indicator 1:** Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the AAQS or interim emission reductions in the AQMP.
- **Indicator 2:** Whether the project would exceed the assumptions in the AQMP. The AQMP strategy is, in part, based on projections from local general plans.

Indicator 1: The Basin is designated nonattainment for O_3 and $PM_{2.5}$ under the CAAQS and NAAQS, nonattainment for lead (Los Angeles County only) under the NAAQS, and nonattainment for PM_{10}

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1 South Coast Air Quality Management District, *Final 2012 Air Quality Management Plan*, December 7, 2012.

2 A "bump-up" is a voluntary reclassification of a nonattainment area to a higher classification allowing for an extension of an attainment deadline.

under the CAAQS.[1] Because the proposed project involves long-term growth associated with build out of the City of Long Beach, emissions of criteria pollutants associated with future development allowed under the LUE/UDE would occur. Future development under the proposed project would be required to comply with ARB motor vehicle standards, SCAQMD regulations for stationary sources and architectural coatings, Title 24 energy efficiency standards, and the proposed LUE/UDE project goals and policies. While the existing City policies and proposed LUE/UDE policies are intended to reduce impacts associated with air quality violations, specific standard conditions for future project developments that implement these policies and regulations are identified to ensure that the intended environmental protections are achieved. Consequently, emissions generated by development projects in addition to existing sources within the City are not considered to cumulatively contribute to the nonattainment designations of the Basin (refer to the discussion under Threshold 4.2.3 below). Implementation of the LUE/UDE would not contribute to an increase in frequency or severity of air quality violations and delay attainment of the AAQS or interim emission reductions in the AQMP, and emissions generated from the proposed LUE/UDE would not result in a significant cumulative air quality impact as demonstrated below in the discussion. Therefore, the proposed project is concluded to result in a less than significant impact associated with consistency with the applicable air quality management plan. The proposed project would be consistent with the AQMP under the first indicator.

Indicator 2: The land-use designations in the City's existing LUE form, in part, the foundation for the emissions inventory for the Basin in the AQMP. The AQMP is based on projections in population, employment, and VMT in the Basin projected by SCAG. SCAG projections for the City LUE and UDE Major Areas of Change are partially based on the current adopted General Plan. It is expected that implementation of the proposed General Plan LUE and UDE would result in a higher population and generate more employment for the City compared to SCAG forecasts given that the growth expected under the proposed project was unknown at the time SCAG developed the forecasts. It should be noted that the growth projected by SCAG is based on demographic trends in the region. These demographic trends are incorporated into the RTP/SCS compiled by SCAG to determine priority transportation projects and VMT in the SCAG region. Growth projections of the proposed LUE/UDE assume full build out of the proposed Major Areas of Change by the year 2040, since there is no schedule for when this development would occur. As a result, the growth projections for the Major Areas of Change would be based on SCAG's 2016 RTP/SCS and the associated emissions inventory in SCAQMD's 2012 AQMP do not include the additional growth forecast in the LUE/UDE because at the time of preparation of the 2012 AQMP, the available data was from SCAG's 2012 RTP/SCS. Therefore, the 2012 AQMP does not consider emissions associated with the proposed LUE/UDE. However, once the proposed LUE/UDE is adopted and the AQMP is revised (currently in process), SCAG and SCAQMD will incorporate the growth projections associated with build out of the proposed LUE/UDE in their regional planning projections, and the proposed LUE/UDE would become consistent with the upcoming 2016 AQMP. Based on the requirements for consistency with emission control strategies in the AQMP, the LUE/UDE would not conflict with or obstruct the implementation of the AQMP and/or applicable portions of the State Implementation Plan (SIP). Implementation of the proposed project would result in a less than significant impact associated with conflicts with applicable air quality plans. No mitigation is required.

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[1] California Air Resources Board. 2014. Proposed First Update to the Climate Change Scoping Plan: Building on the Framework. Website: http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm., May 15, 2014.

Threshold 4.2.2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation

It is important to note that, per the requirements of CEQA, this analysis is based on a comparison of the proposed LUE/UDE to existing land uses and not to the changes in population and employment associated with the potential developments under the current General Plan. It is also important to note that the proposed LUE/UDE is a regulatory document that establishes the framework for growth and development and does not directly result in development. Before development can occur, the development project is required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

Construction Impacts: Less than Significant Impact With Mitigation. Construction activities associated with the proposed project would occur over the build-out horizon of the LUE/UDE, which would cause short-term emissions of criteria air pollutants. The primary source of NO_X, CO, and sulfur oxide (SO_X) emissions is the operation of construction equipment. The primary sources of particulate matter (PM_{10} and $PM_{2.5}$) emissions are activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. The primary source of VOC emissions is the application of architectural coating and off-gas emissions associated with asphalt paving. A summary of health impacts associated with air pollutant emissions of criteria pollutants is provided in Table 4.2.A.

For this broad-based policy LUE/UDE, it is not possible to determine whether the scale and phasing of future individual projects would exceed the SCAQMD's short-term regional or localized construction emissions thresholds. The SCAQMD recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the project site as a result of construction activities. The thresholds are based on standards established by the SCAQMD in the LST Methodology and are measured against construction emissions that occur on the project site. However, the LSTs are applicable to projects at the project-specific level and are not applicable to regional projects. In addition, the LSTs do not apply to emissions occurring off the project site, such as emissions from motor vehicles. These emissions are primarily generated from heavy-duty construction equipment and demolition, grading, and trenching activities. This suggests that on-site construction emissions from future development pursuant to the proposed LUE/UDE could potentially cause or contribute to locally significant air quality impacts. However, it should be noted that roughly 21, 25, and 85 percent of regional VOC, NO_X, and PM_{10}, emissions, respectively, from the worst-day case construction are on-road mobile-source emissions associated with hauling and worker commutes. Nevertheless, localized construction impacts of future LUE/UDE projects could potentially exceed the LSTs, particularly for construction of planning areas larger than 5 acres or planning areas with more intense construction activities. To address this, regulatory measures (e.g., SCAQMD Rule 201 for a permit to operate, Rule 403 for fugitive dust control, Rule 1113 for architectural coatings, Rule 1403 for new source review, and the ARB's Airborne Toxic Control Measures) are currently in place, and mitigation imposed at the project level may include extension of construction schedules and/or use of special equipment.

Because the scale of construction activities has not been determined or estimated and in order to present conservative assumptions, the air quality impacts associated with future construction of

individual projects that may occur with implementation of the proposed project are assumed to be potentially significant. It should be noted that the amount of emissions from a project does not necessarily correspond to the concentrations of air pollutants. A dispersion modeling analysis is required to calculate health risk from project implementation. However, since it is not possible to translate the amount of emissions to a particular concentration, it is not possible to calculate the risk factor for a particular health effect at the time of this analysis.

The proposed LUE/UDE includes goals regarding land use development and identifies policies designed to reduce emissions of criteria pollutants while protecting public health. These policies include requirements for new development design and construction methods to minimize impacts to air quality; encourage future development to reduce vehicular trips by utilizing compact regional and community-level development patterns; encourage new development to reduce air pollution by incorporating a mixture of uses within the City that encourage people to walk, bicycle, or use public transit; minimize land use conflicts that expose people to significant amounts of air pollution; support transportation management programs that reduce the use of single-occupancy vehicles; and encourage the use of low-emission vehicles and equipment to improve air quality and reduce GHG emissions.

While existing City policies and regulations and proposed LUE/UDE goals and policies are intended to minimize impacts associated with nonattainment criteria pollutants, specific best management practice (BMP) measures are included as Standard Conditions imposed by the City, and are identified to ensure that the intended environmental protections are achieved. These BMP measures are identified for future project developments that may be implemented under the proposed project that require environmental evaluation under CEQA. Additionally, Mitigation Measure AQ-1 is identified requiring the preparation of project-specific technical assessments evaluating construction-related air quality impacts to further ensure that construction-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under CEQA. With implementation of Standard Condition AQ-1 and Mitigation Measure AQ-1, the potential construction emissions impact associated with future development facilitated by the proposed project would be less than significant.

Operational Impacts: Potentially Significant Impact. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Particulate matter can also lead to a variety of health effects in people. These include premature death of people with heart or lung disease, heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Regional emissions of criteria pollutants contribute to these known health effects. The SCAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals and that they are not exposed to elevated concentrations of criteria pollutants in the Basin. To achieve the health-based standards established by the EPA, the SCAQMD prepares an AQMP that details regional programs to attain the AAQS.

Because the scale of operational activities has not been determined or estimated and in order to present conservative assumptions, the air quality impacts associated with future operation of individual projects that may occur with implementation of the proposed project are assumed to be potentially significant. Mitigation Measure AQ-2 is identified requiring the preparation of project-specific technical assessments evaluating operational-related air quality impacts to further ensure that operational-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under CEQA. Unlike construction activities where the extension of construction schedules and/or use of special equipment can be reasonably assumed to be implemented,

operational characteristics and the associated emissions cannot be determined at the time of this analysis. Therefore, despite implementation of Mitigation Measure AQ-2, and in an abundance of caution, the potential emissions impact associated with the operation of the proposed project would remain significant and unavoidable.

CO Hot Spots: Less than Significant Impact. Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the State 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. Localized air quality effects would occur when emissions from vehicular traffic increase in local areas as a result of the proposed project. Vehicular trips associated with the proposed project could contribute to congestion at intersections and along roadway segments in the project vicinity. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, schoolchildren, the elderly, and hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentration, modeling is recommended to determine a project's effect on local CO levels.

At the time that the 1993 Handbook was published, the Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Basin and in the State have steadily declined. In 2007, the SCAQMD was designated in attainment for CO under both the CAAQS and NAAQS. As identified within SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the Basin were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection. A CO hot-spot analysis was conducted at four busy intersections in Los Angeles County at the peak morning and afternoon periods and did not predict a violation of CO standards.[1] Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2011). One of the top four worst intersections in Los Angeles County (i.e., Long Beach Boulevard/Imperial Highway)[2] is located approximately 4 miles north of the proposed LUE/UDE project. Since the SCAQMD-modeled intersections do not exceed the CO standards, all intersections within the proposed project with less volumes of traffic and under less extreme conditions would not exceed the CO standards. Build out of the proposed General Plan LUE and

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[1] The four intersections were Long Beach Boulevard/Imperial Highway; Wilshire Boulevard/Veteran Avenue; Sunset Boulevard/Highland Avenue; and La Cienega Boulevard/Century Boulevard. The busiest intersection evaluated (Wilshire Boulevard/Veteran Avenue) had a daily traffic volume of approximately 100,000 vehicles and LOS E in the morning peak hour and LOS F in the evening peak hour.

[2] The intersection of Long Beach Boulevard/Imperial Highway is not within the City limits but is used to represent a condition where there is a high volume of traffic during the a.m. and p.m. peak hours to demonstrate that intersections that are below the volume of traffic at this particular intersection, under less severe atmospheric conditions (i.e., where vertical and horizontal air does not mix), would not result in a CO hot spot.

UDE would not produce the volume of traffic, as described above, required to generate a CO hot spot. Therefore, implementation of the LUE/UDE would not be expected to result in CO hot spots, and impacts would be less than significant. No mitigation is required.

Threshold 4.2.3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)

Less than Significant Impact.

As previously identified, per the requirements of CEQA, this analysis is based on a comparison of the proposed LUE/UDE to existing land uses and not to the changes in population and employment associated with the potential developments under the current General Plan. It is also important to note that the proposed LUE/UDE is a regulatory document that establishes the framework for growth and development and does not directly result in development. Before development can occur, the development project is required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

City of Long Beach Emissions Inventory: Table 4.2.G summarizes the emissions inventory for the City under the proposed LUE/UDE for the Major Areas of Change. As shown in Table 4.2.G, implementation of the proposed LUE/UDE would result in a decrease in criteria air pollutant emissions from existing conditions. This decrease is based on the difference in vehicle emissions between existing land uses and land uses associated with build out of the proposed LUE/UDE, as well as an estimate of service population in the City in year 2040.

As identified above, emissions associated with the build out of the proposed LUE/UDE may exceed the daily SCAQMD thresholds for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$. However, in a cumulative context, emissions would be lower under the Future with Project scenario (refer to Table 4.2.G below) because of the stringent EPA and State of California vehicle emissions standards aimed at reducing vehicle emissions that would be phased in over the life of the project.

Implementation of the proposed LUE/UDE policies would help further reduce air pollutant emissions. Many of these policies promote an increase in concepts and designs that would increase walking, bicycling, and use of public transit that would contribute to reduced VMT (e.g., Policies AQ 2.1.1; 2.1.2; 2.3.1; and 2.4.1). In addition, Policy 2.6.2 of the Air Quality Element encourages the installation of alternative fueling facilities such as electric chargers for vehicles. Furthermore, Policy Mobility of People (MOP) 5-2 of the Mobility Element calls for the continued active enforcement of the City's trip reduction through the use of alternative modes of transportation and Transportation Demand Management.

The proposed LUE includes the following Strategies and Policies that would result in a reduction in air emissions:

- **Strategy No. 1:** Support sustainable urban development patterns.

Table 4.2.G: Build-out Year 2040 City of Long Beach Major Areas of Change Regional Criteria Air Pollutant Emissions Inventory

Sector	Criteria Air Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Existing Year 2012						
Transportation (2012 emission factors)[1]	4,265.95	9,090.11	36,209.28	52.23	188.98	179.54
Energy, Residential (natural gas use)[2]	0.12	10.48	4.46	0.07	0.85	0.85
Energy, Commercial + Industrial (natural gas use)[2]	1.05	9.59	8.06	0.06	0.73	0.73
Area, Landscaping/Consumer Products[3]	0.51	0.31	8.08	0.00	0.04	0.04
Existing Forecast Land Uses Total	**4,267.64**	**9,110.50**	**36,229.88**	**52.36**	**190.60**	**181.16**
LUE/UDE Year 2040						
Transportation (2040 emission factors)[1]	1,168.77	2,139.83	8,227.32	42.30	20.09	18.68
Energy, Residential (natural gas use)[2]	1.41	15.67	6.67	0.10	1.27	1.27
Energy, Commercial + Industrial (natural gas use)[2]	0.96	10.45	8.78	0.06	0.79	0.79
Area, Landscaping/Consumer Products[3]	0.55	0.36	8.82	0.00	0.04	0.04
Future with Project Total	**1,171.68**	**2,166.31**	**8,251.58**	**42.46**	**22.19**	**20.78**
Differences in Emissions	**-3,096**	**-6,944**	**-27,978**	**-9.90**	**-168**	**-160**
SCAQMD Regional Significance Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA Associates, Inc. (2016).

[1] EMFAC2014 based on daily vehicle miles traveled (VMT) provided by LSA Associates, Inc. Transportation sector includes the full trip length for internal-internal trips and 50 percent trip length for external-internal/internal-external trips. VMT per year based on a conversion of VMT × 347 days per year to account for less travel on weekend, consistent with ARB statewide GHG emissions inventory methodology (ARB 2008).

[2] Natural gas usage data provided by City of Long Beach Oil and Gas.

[3] NONROAD emissions estimated based on population for landscaping emissions and employment estimates for light commercial equipment. Estimates were based on population and employment data calculated using a percentage reflective of the City of Long Beach included in the Los Angeles County data included in the SCAG 2016 RTP/SCS. Excludes fugitive emissions from paved and unpaved surfaces and wood-burning fireplaces. Various industrial and commercial processes (e.g., manufacturing, dry cleaning) allowed under the Land Use Element would require permitting and would be subject to further study pursuant to SCAQMD Regulation XIII, New Source Review. Because the nature of those emissions cannot be determined at this time and because they are subject to further regulation and permitting, they are not considered for purposes of this analysis.

ARB = California Air Resources Board
CO = carbon monoxide
GHG = greenhouse gas
lbs/day = pounds per day
LUE/UDE = Land Use Element/Urban Design Element
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
SCAG = Southern California Association of Governments
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compound

- **LU Policy 1-1:** Promote sustainable development patterns and development intensities that use land efficiently and accommodate and encourage walking.
- **Strategy No. 10:** Create healthy and sustainable neighborhoods.
- **LU Policy 10-2:** Provide for a wide variety of creative, affordable, and sustainable land use solutions to help resolve air, soil, and water pollution, energy consumption, and resource depletion issues.
- **LU Policy 10-5:** Ensure neighborhoods are accessible to open spaces, parks, trails, and recreational programs that encourage physical activity and walkability.

Emissions of criteria pollutants associated with future development consistent with the proposed project would not result in a cumulatively considerable significant impact associated with emissions of PM_{10}, $PM_{2.5}$, and O_3 precursors (VOCs, NO_X, and CO) under the CAAQS as shown in Table 4.2.G.

Future development under the proposed project would also be required to demonstrate compliance with the AQMP, SIP, ARB motor vehicle standards, SCAQMD regulations for stationary sources and architectural coatings, Title 24 energy efficiency standards, and the proposed LUE/UDE project goals and policies. Because implementation of the proposed LUE/UDE would result in a decrease in criteria air pollutant emissions from existing conditions, the cumulative air quality impact associated with the proposed project would be less than significant. No mitigation is required.

Threshold 4.2.4: Expose sensitive receptors to substantial pollutant concentrations

Criteria Pollutants: Less than Significant Impact with Mitigation. Refer to the analysis provided under Thresholds 4.2.2 and 4.2.3 above for a discussion of potential construction and operational impacts relating to criteria air pollutants. With implementation of Standard Condition AQ-1 and Mitigation Measure AQ-1, the potential emissions impact associated with the construction of the proposed project would be less than significant.

Operation of new land uses consistent with the Land Use Plan of the proposed LUE/UDE would generate fewer criteria air pollutants in the City from area/stationary sources and mobile sources as shown in Table 4.2.G; therefore, the cumulative air quality impact associated with the proposed project would be less than significant.

TAC Emissions: Potentially Significant Impact. Despite implementation of Mitigation Measure AQ-2, the potential emissions impact associated with the operation of the proposed project would remain significant and unavoidable.

Various industrial and commercial processes (e.g., manufacturing and dry cleaning) allowed under the proposed LUE/UDE would be expected to release TACs. Industrial land uses (e.g., chemical processing facilities, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities) have the potential to be substantial stationary sources that would require a permit from SCAQMD for emissions of TACs. Emissions of TACs would be controlled through permitting issued by SCAQMD and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under SCAQMD Rule 1401. Since it is not possible to determine the amount of TAC concentrations at the time of this analysis, it is not possible to calculate the risks for a particular health effect within the proposed Major Areas of Change. The proposed project is a programmatic project and until specific future projects are proposed, the associated TAC emissions cannot be determined or modeled at this time. Future development projects would be subject to environmental review under CEQA and would be required to analyze potential TAC emissions and include mitigation as appropriate.

In addition to stationary/area sources of TACs, commercial and industrial operations could generate a substantial amount of diesel particulate matter emissions from off-road equipment use and truck idling. Diesel particulate matter (DPM) accounts for approximately 84 percent of the excess cancer risk in the Basin (SCAQMD 2008a). New land uses in the City that use diesel trucks, including trucks with transport refrigeration units, could generate an increase in DPM that would contribute to cancer and noncancer health risk in the Basin. Furthermore, trucks would travel on regional transportation routes throughout the Basin, contributing to near-roadway DPM concentrations. Land development projects are required to comply with Assembly Bill (AB) 2588, SCAQMD Rule 1401, and ARB

standards for diesel engines. As stated above, until specific future projects are proposed, the associated emissions cannot be determined or modeled at this time. Future projects would be subject to environmental review under CEQA and would be required to analyze potential emissions and include mitigation as appropriate.

Because placement of sensitive land uses falls outside ARB jurisdiction, the ARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources.

The ARB's recommendations for the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. Respiratory and cardiovascular problems including asthma, lung cancer, and premature death have been associated with living near major roadways and freeways (Balmes et al. 2009). Children who live near major roadways and freeways have been found to have higher asthma rates and reduced lung function (ARB 2013c). There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic: DPM from trucks, and benzene and butadiene from passenger vehicles. Exposure to DPM accounts for more than 80 percent of the total carcinogenic risk in the Basin (SCAQMD 2008a). It has been found that outdoor concentrations are highest near roadways and decrease with increasing distance downwind of the source (Zhu et al. 2002). The ARB recommends avoiding siting new sensitive land uses within 500 ft of urban roads with more than 100,000 vehicles per day (ARB 2005).

Table 4.2.H shows a summary of the other ARB recommendations for siting new sensitive land uses within the vicinity of air pollutant sources. Recommendations in the table are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following ARB minimum distance separations.

Stationary sources of TACs within the City of Long Beach include the stationary sources permitted by the SCAQMD. Various permitted uses are dispersed throughout the City with a high concentration along the Interstate 710 (I-710) corridor (SCAQMD 2014). The other sources of TAC within the City are I-710 and Interstate 405 (I-405), which have annual average daily traffic volumes exceeding 100,000. Based on the information in the TIA, there are no local roadways with more than 100,000 average daily vehicle trips in the City (LSA 2016).

If new sensitive receptors were sited within 500 ft of I-710 or I-405 or within the ARB's minimum siting recommendations of other stationary sources, they may be exposed to significant concentrations of air pollutants. As shown in Figure 3.3, Proposed PlaceTypes Map, (Chapter 3.0, Project Description of the Draft EIR) residential land uses would be permitted along I-710; however, the LUE/UDE would not result in any change to residential uses proximate to I-710. Consequently, residential land uses would also be near or adjacent to areas designated for commercial and industrial uses and to existing permitted TAC sources. Thus, new residential and other sensitive developments could be sited within the buffer distances to TAC sources (shown in Table 4.2.H). This is a potentially significant impact, and mitigation measures would be required.

Table 4.2.H: ARB Recommendations for Siting New Sensitive Land Uses

Source/Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units [TRUs] per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within 1 mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily affected zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

Source: ARB (2005).
ARB = California Air Resources Board

The proposed LUE includes the following measures that would allow for buffers and other provisions for reducing exposure of sensitive receptors to TAC emissions:

- **Strategy No. 15:** Protect neighborhoods from adverse environmental conditions.
- **LU Policy 15-1:** Develop public health and environmental protection programs that promote equity and that provide for the fair treatment of all Long Beach residents, regardless of race, age, culture, income, or geographic location.
- **LU Policy 15-2:** Continue to work with the State, the Port of Los Angeles, and other agencies and organizations to improve air quality around the ports and reduce vessel, truck, rail, and other equipment emissions from port operations.
- **LU Policy 15-3:** Continue to be an advocate for residential neighborhoods that will be adversely affected by major port-related facility expansion projects.
- **LU Policy 15-4:** Work with regional agencies, residents, and businesses to preserve established homes, businesses, and open spaces; limit the exposure of toxic pollutants and vehicle noise and minimize traffic issues impacting residential neighborhoods as a result of the I-710 Freeway expansion.
- **LU-M-48:** Continue to develop and implement innovative programs aimed at reducing the air pollutants from port operations (e.g., San Pedro Bay Clean Air Action Plan, Clean Truck Programs, Main Engine Low-Sulfur Fuel Incentive Program, and Shoreside Electricity).

- **North Long Beach Land Use Strategy 1:** Consolidate the intensity of commercial activities into neighborhood-serving nodes, at major corridor crossroads, and in expanded commercial centers.
- **North Long Beach Land Use Strategy 2:** Facilitate the development of new multiple-family housing along corridors between commercial nodes and centers.
- **North Long Beach Land Use Strategy 3:** Buffer heavy industrial activities from residential uses by encouraging Neo Industrial and commercial conversions of some industrial properties.
- **North Long Beach Land Use Strategy 4:** Along Cherry Avenue, Paramount Boulevard, and Downey Avenue, use the Neo Industrial Place Type to develop cleaner and more attractive commercial/industrial properties.
- **North Long Beach Land Use Strategy 5:** Upgrade the quality of development by using design guidelines, new zoning standards, and improved design review processes to ensure that all new buildings, remodels, and additions enhance the neighborhood fabric.
- **North Long Beach Land Use Strategy 6:** Use design guidelines and upgraded zoning standards to further protect established residential districts from the intrusion of commercial activities.
- **North Long Beach Land Use Strategy 7:** Continue to implement the North Long Beach Strategic Guide for Development and North Long Beach Street Enhancement Master Plans (originated under the Redevelopment Agency) including the North Village and North Library plans.
- **North Long Beach Land Use Strategy 8:** Seek opportunities to create open recreation and green areas, and implement the RiverLink Plan for the Los Angeles River.
- **North Long Beach Land Use Strategy 9:** Implement the I-710 Livability Plan.
- **North Long Beach Land Use Strategy 10:** Implement Mobility Element capital improvements for North Long Beach include:
    - Artesia Boulevard Complete Streets Improvements
    - Atlantic Avenue Streetscape Enhancements
    - South Street Signal Improvements
    - Market Street Enhanced Bikeway Access
    - Walnut Avenue Bikeway

Goals and policies are included in the proposed General Plan LUE/UDE that would reduce concentrations of criteria air pollutant emissions and air toxics generated by construction and operation of new developments on nearby residences. Review of projects by SCAQMD for permitted sources of air toxics would ensure that health risks are minimized.

It is important to note that the proposed Neo-Industrial Place Type in the Areas of Change would be used as a buffer between existing industrial and residential neighborhoods. Future industrial developments pursuant to the proposed LUE/UDE are part of larger planning areas designated as Neo-Industrial Place Types with the zoning code of mixed-use development. Specifically, no heavy industrial, warehousing, and distribution facilities are permitted in this land use category within the Major Areas of Change near Cherry Boulevard. Instead, the future industrial uses would likely be linked to and serve more of a supporting role to the office land uses. Based on this supportive role, the

industrial uses would likely be below-average truck trip generators. Thus, no future projects or uses that would generate the level of truck trips expected for heavy industrial and/or warehouses are proposed as part of the proposed LUE/UDE Areas of Change. However, since it is not possible to determine the amount of TAC concentrations at the time of this analysis, it is not possible to calculate the risks for a particular health effect within the proposed Areas of Change.

Future development consistent with the proposed LUE/UDE project would not result in significant emissions of diesel particulate matter. Land development projects are required to comply with AB 2588, SCAQMD Rule 1401, and ARB standards for diesel engines. While existing City policies and regulations and proposed LUE/UDE goals and policies are intended to minimize impacts associated with sensitive receptors, specific measures for future project developments that implement these policies and regulations are proposed to ensure that the intended environmental protections are achieved.

As previously identified, the amount of emissions from a project does not necessarily correspond to the concentrations of air pollutants. A dispersion modeling analysis is required to calculate health risk from project implementation. However, since it is not possible to translate the amount of emissions to a particular concentration, it is not possible to calculate the risk factor for a particular health effect at the time of this analysis. Because the scale of operational activities has not been determined or estimated and in order to present conservative assumptions, the TAC health risk impacts associated with future operation of individual projects that may occur with implementation of the proposed project are assumed to be potentially significant.

Mitigation Measure AQ-3 has been identified to ensure that mobile sources of TACs not covered under SCAQMD permits are considered during subsequent project-level environmental review. Mitigation Measure AQ-3 requires the preparation of project-specific technical health risk assessments evaluating operational-related health risk impacts to further ensure that operational-related emissions are reduced to the maximum extent feasible for projects that require environmental evaluation under CEQA. However, unlike construction activities where the extension of construction schedules and/or use of special equipment can be reasonably assumed to be implemented, operational characteristics and the associated emissions cannot be determined at the time of this analysis. With implementation of Mitigation Measure AQ-3, the potential TAC health risk impact associated with the operation of the proposed project would be remain significant and unavoidable.

Threshold 4.2.5: Create objectionable odors affecting a substantial number of people

Less than Significant Impact. Growth within the City of Long Beach could generate new sources of odors and place sensitive receptors near existing sources of odors. Nuisance odors from land uses in the Basin are regulated under SCAQMD Rule 402, Nuisance, which states:

> *A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from*

agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Industrial land uses have the potential to generate objectionable odors. Examples of odor-generating industrial projects are wastewater treatment plants, compost facilities, landfills, solid-waste transfer stations, fiberglass-manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. While industrial land uses associated with the proposed General Plan LUE and UDE would be required to comply with SCAQMD Rule 402, additional measures may be necessary to prevent an odor nuisance.

Residential and commercial land uses could result in generation of odors such as exhaust from landscaping equipment. However, unlike industrial land uses, these are not considered potential generators of odor that could affect a substantial number of people. Therefore, impacts from potential odors generated from residential and commercial land uses associated with the LUE/UDE are considered less than significant.

During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reached any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Furthermore, short-term construction-related odors are expected to cease upon the drying or hardening of the odor-producing materials. Therefore, impacts associated with construction-generated odors are considered less than significant.

While odor sources are present within the City, the odor policies enforced by the SCAQMD, including Rule 402, and City of Long Beach Municipal Code Section 8.64.040, prohibit nuisance odors and identify enforcement measures to reduce odor impacts to nearby receptors. Development of land uses consistent with the proposed LUE/UDE that would have the potential to result in nuisance odors, such as new industrial facilities, would be required to comply with these regulations. Therefore, impacts associated with objectionable odors would be less than significant.

4.2.10 Mitigation Measures

MM AQ-1 Prior to issuance of any construction permits, future development projects subject to discretionary review shall prepare and submit to the City of Long Beach (City) Department of Development Services Planning Bureau a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology for assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the SCAQMD-adopted thresholds of significance, the Department of Development Services shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the

Department of Development Services. Mitigation measures to reduce construction-related emissions include, but are not limited to:

- Require the following fugitive-dust control measures:
  - Use nontoxic soil stabilizers to reduce wind erosion.
  - Apply water every 4 hours to active soil-disturbing activities.
  - Tarp and/or maintain a minimum of 24 inches of freeboard on trucks hauling dirt, sand, soil, or other loose materials.
- Use construction equipment rated by the United States Environmental Protection Agency (EPA) as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower.
- Ensure that construction equipment is properly serviced and maintained to the manufacturers' standards.
- Limit nonessential idling of construction equipment to no more than five consecutive minutes.
- Using Super-Compliant volatile organic compound (VOC) paints for coating of architectural surfaces whenever possible.[1]

MM AQ-2 Prior to future discretionary project approval, development project applicants shall prepare and submit to the City of Long Beach Department of Development Services a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with SCAQMD methodology in assessing air quality impacts. If operation-related air pollutants are determined to have the potential to exceed the SCAQMD-adopted thresholds of significance, the Department of Development Services shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the Standard Conditions of Approval. Below are possible mitigation measures to reduce long-term emissions:

- For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plugging in the anticipated number of refrigerated trailers to reduce idling time and emissions.
- Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use.
- Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles

[1] A list of Super-Compliant architectural coating manufacturers can be found on the SCAQMD website at http://www.aqmd.gov/prdas/brochures/Super-Compliant_AIM.pdf.

while parked for loading/unloading in accordance with California Air Resources Board (ARB) Rule 2845 (13 California Code of Regulations [CCR] Chapter 10, Section 2485).

- Site-specific development shall demonstrate that an adequate number of electrical vehicle Level 2 charging stations are provided on site. The location of the electrical outlets shall be specified on building plans, and proper installation shall be verified by the Department of Development Services prior to issuance of a Certificate of Occupancy.

MM AQ-3 Prior to future discretionary approval for projects that require environmental evaluation under the California Environmental Quality Act (CEQA), the City of Long Beach would evaluate new development proposals for sensitive land uses (e.g., residences, schools, and daycare centers) within the City for potential incompatibilities with regard to the ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005). In addition, applicants for siting or expanding sensitive land uses that are within the recommended buffer distances listed in Table 1-1 of the CARB Handbook would submit a Health Risk Assessment (HRA) to the City of Long Beach. The HRA shall be prepared in accordance with the policies and procedures of the State Office of Environmental Health Hazard Assessment (OEHHA) and the South Coast Air Quality Management District (SCAQMD). The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children. If the HRA shows that the incremental cancer risk and/or non-cancer hazard index exceeds the respective thresholds, as established by the SCAQMD at the time a project is considered, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below the aforementioned thresholds as established by the SCAQMD), including appropriate enforcement mechanisms. Measures to reduce risk may include, but are not limited to, the following:

- Air intakes oriented away from high-volume roadways and/or truck loading zones; and.
- Heating, ventilation, and air conditioning systems of the buildings provided with appropriately sized maximum efficiency rating value filters.

Prior to future discretionary project approval, applicants for new industrial or warehousing land uses that (1) have the potential to generate 100 or more diesel truck trips per day or have 40 or more trucks with operating diesel-powered transport refrigeration units, and (2) are within 1,000 feet of a sensitive land use (e.g., residential, schools, hospitals, or nursing homes), as measured from the property line of the project to the property line of the nearest sensitive use, shall submit an HRA to the Department of Development Services. The HRA shall be prepared in accordance with policies and procedures of the State OEHHA and the SCAQMD. If the HRA shows that the incremental cancer risk and/or non-cancer hazard index exceeds the respective thresholds, as established by the SCAQMD at the time a project is considered, the applicant will be required to identify and demonstrate whether best available control technologies for toxics (T-BACTs), including appropriate enforcement mechanisms, are capable of reducing potential cancer and non-cancer

risks to an acceptable level. T-BACTs may include, but are not limited to, restricting idling on site or electrifying warehousing docks to reduce diesel particulate matter, or requiring use of newer equipment and/or vehicles. T-BACTs identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site plan.

4.2.11 Cumulative Impacts

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

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

The proposed project would not result in significant construction or operational impacts from criteria pollutant emissions, contribute to an O_3 or particulate matter exceedance, cause the area to be in noncompliance with the AQMP, or result in a significant health risk to any sensitive receptor. Air quality emissions associated with future development that may occur under the proposed project would be incremental and would not result in cumulatively considerable impacts.

4.2.12 Level of Significance after Mitigation

The 2012 AQMP does not consider emissions associated with the proposed LUE/UDE. However, once the proposed LUE/UDE is adopted and the AQMP is revised (currently in process), SCAG and SCAQMD will incorporate the growth projections associated with build out of the proposed LUE/UDE in their regional planning projections, and the proposed LUE/UDE would become consistent with the next AQMP. Based on the requirements for consistency with emission control strategies in the AQMP, the LUE/UDE would not conflict with or obstruct the implementation of the AQMP and/or applicable portions of the SIP (Threshold 4.2.1).

While existing City policies and regulations and proposed LUE/UDE goals and policies are intended to minimize impacts associated with nonattainment criteria pollutants, specific BMP measures are included as Standard Conditions imposed by the City, and are identified to ensure that the intended environmental protections are achieved. These BMP measures are identified for future project developments that may be implemented under the proposed project that require environmental evaluation under CEQA. With implementation of Standard Condition AQ-1 and Mitigation Measure AQ-1, the potential construction emissions impact associated with future development facilitated by the proposed project would be less than significant (Threshold 4.2.2).

Because operational characteristics of potential future projects that may be undertaken with implementation of the proposed project and the associated emissions cannot be determined at the time of this analysis, in an abundance of caution, the potential emissions impacts associated with the operation of the proposed project, including the potential health risks to sensitive receptors, would remain significant and unavoidable despite implementation of Mitigation Measures AQ-2 and AQ-3 (Thresholds 4.2.2 and 4.2.4).

4.3 GLOBAL CLIMATE CHANGE

This section provides a discussion of global climate change (GCC), existing regulations pertaining to GCC, and an analysis of greenhouse gas (GHG) emissions impacts associated with the construction and operation of potential development that would be allowed under the proposed City of Long Beach (City) General Plan Land Use Element and Urban Design Element (LUE/UDE) (proposed project). This analysis examines the short-term construction and long-term operational impacts within the planning area and evaluates the effectiveness of measures incorporated as part of the design of the proposed project. This section is based on information provided in the *Air Quality Impact Analysis* (LSA, April 2016) (Appendix B).

4.3.1 Methodology

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

Greenhouse gas emissions associated with implementation of the proposed project would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term GHG emissions associated with project-related vehicular trips. Recognizing that the field of GCC analysis is rapidly evolving, the most recently advocated approaches indicate that lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, construction activities, and any other significant source of emissions within the planning area. GHG emissions expected to be released from sources within the City primarily consist of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) and are described in greater detail below. In order to develop 2012 GHG emission levels, the sectors in which GHG emissions would be emitted have been characterized below to establish the basis upon which the analysis builds on to determine the levels of carbon dioxide, methane, and nitrous oxide emissions. The GHG emissions inventory includes the following sectors:

- **Transportation:** Transportation emissions forecasts were modeled for vehicle trips beginning and ending within the City and from external/internal vehicle trips (i.e., trips that either begin or end within the City) using the California Air Resources Board (ARB) EMFAC2014-EI. As previously described, the EMFAC2014 model runs were based on vehicle miles traveled (VMT) data and emission factors for 2012 (existing) and forecasted 2040 emission rates. The GHG emission assumption is consistent with the ARB's methodology within the Climate Change Scoping Plan Measure Documentation Supplement. Modeling was conducted for an adjusted business-as-usual (BAU) scenario, which includes the GHG emissions reduction from the Pavley Fuel Efficiency Standard and the ARB Low Carbon Fuel Standard (LCFS).
- **Energy:** Natural gas and electricity use for land uses in the City were modeled using data provided by the Southern California Gas Company (SoCal Gas) 2014 Gas Report and the Long Beach Water Department, respectively. Natural gas supply is discussed in Section 4.2, Air Quality. Electricity use is based on the California Emissions Estimator Model (CalEEMod) energy consumption rates for each land use type for year 2012 to account existing annual usage. Electricity use for residential and nonresidential land uses in the City was modeled using the

estimated annual electricity consumption rate of 3.8 million megawatt hours per year (MWh/yr) for the City. Based on the service population ratio between the City and the proposed project Major Areas of Change, an estimated annual electricity consumption rate of 640,177 MWh/yr is used for the existing year 2012 analysis. Forecast year 2040 data are adjusted for increases in service population in the Major Areas of Change. The intensity factor of the purchased electricity is based on the 2012 carbon dioxide equivalent (CO_2e) intensity factor provided by Southern California Edison. Intensity factors for carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) provided in ARB's Local Government Operations Protocol (LGOP), Version 1.1, were used for natural gas. Future GHG emissions reductions for residential electricity use include a reduction in carbon intensity of the energy supply required under the 50 percent Renewable Portfolio Standard (RPS) (California Energy Commission 2015), a 46 percent increase in 2008 Title 24 building energy efficiency as a result of changes to the Building and Energy Efficiency Standards (i.e., the proposed California Green Building Standards Code [CALGreen Code] effective January 2017), and energy conservation measures.

- **Waste:** Modeling of landfilled waste disposed of by residents and employees in the City is based on the waste commitment method using the ARB's Landfill Emissions Tool model, Version 1.3, based on waste disposal data (municipal solid waste and alternative daily cover) and waste characterization data for existing year 2012 from the California Department of Resources Recycling and Recovery (CalRecycle) Disposal Reporting System (CalRecycle 2016). Landfills in California have gas capture systems, but because the landfill gas captured is not under the jurisdiction of the City, the emissions from the capture system are not included in the City's inventory. Only fugitive sources of GHG emissions from landfills are included. Modeling assumes a 75 percent reduction in fugitive GHG emissions from the landfill's gas capture system. The landfill gas capture efficiency is based on the ARB's LGOP, Version 1.1. Biogenic CO_2 emissions are not included. Forecasts are adjusted for increases in population and employment (service population) in the City-proposed LUE/UDE Major Areas of Change.
- **Water/Wastewater:** GHG emissions from water and wastewater include indirect GHG emissions from the embodied energy (i.e., energy required for treatment and distribution) of water and wastewater. Existing year 2012 total water use in the City is based on the water-demand average data provided by the Long Beach Water Department and also the existing year 2012 wastewater generation data) provided in the City's Urban Water Management Plan (UWMP). Forecasts are adjusted for increases in service population and are based on the target per capita Senate Bill (SB)x7-7.[1] Energy use from water use and wastewater treatment is estimated using energy rates identified by the California Energy Commission (2006) and carbon intensity of energy as provided and identified by Southern California Edison data. In addition to the indirect emissions associated with the embodied energy of water use and wastewater treatment, wastewater treatment also results in fugitive GHG emissions. Fugitive emissions from wastewater treatment associated with the Plan Area were calculated using the emissions factors in the ARB's LGOP, Version 1.1. Forecasts are adjusted for increases in service population in the Plan Major Areas of Change.

[1] Senate Bill (SB)x7-7 (2009) requires all water suppliers to reduce per capita urban water use by 20 percent by 2020, with incremental progress toward this goal (10 percent by 2015). The 2010 UWMPs contain water-use targets to meet this requirement. Effective 2016, urban retail water suppliers who do not meet the water conservation requirements established by SBx7-7 are not eligible for State water grants or loans.

- **Other Sources:** NONROAD and OFFROAD 2011 were used to estimate GHG emissions from landscaping equipment and light commercial equipment in the City. NONROAD and OFFROAD contain a database of equipment use and associated emissions for each county, compiled by the ARB. Annual emissions were compiled using NONROAD and OFFROAD for the County of Los Angeles for the year 2012. The amount of landscaping and light commercial equipment is estimated based on population (Landscaping) and employment (Light Commercial Equipment) for the City as a percentage of Los Angeles County. Daily emissions from off-road equipment are multiplied by 347 days per year to account for reduced/limited construction activity on weekends and holidays. Forecasts are adjusted for increases in service population in the City. It is assumed that construction emissions for the forecast year would be similar to historical levels.

  Industrial sources of emissions that require a permit from the SCAQMD are not included in the City's emissions inventory. However, due to the 15/15 Rule, natural gas use data for industrial land uses may also be aggregated with the nonindustrial land uses in the data provided by the Long Beach Gas & Oil Department.[1] Life-cycle emissions are also not included in this analysis because not enough information is available for the proposed project and, therefore, they would be speculative.

Evaluation of GHG emissions impacts associated with the proposed project includes the following:

- Determination of GHG emission levels from project-related mobile and stationary sources using applicable emission factors, inventory data information, and references from CalEEMod as well as their consistency with SCAQMD's screening thresholds.

The City has no adopted thresholds for determining significance of GHG emissions. The SCAQMD has adopted a significance threshold of 10,000 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year for permitted (stationary) sources of GHG emissions for which SCAQMD is the designated lead agency. To provide guidance to local lead agencies on determining significance for GHG emissions in their California Environmental Quality Act (CEQA) documents, the SCAQMD convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) in September 2010, the SCAQMD identified a tiered approach for evaluating GHG emissions for development projects where it does not act as the lead agency:

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

[1] The 15/15 Rule was adopted by the California Public Utilities Commission (CPUC) in the Direct Access Proceeding (CPUC Decision 97-10-031) to protect customer confidentiality. The 15/15 rule requires that any aggregated information provided by a utility must be made up of at least 15 customers, and a single customer's load must be less than 15 percent of an assigned category. If the number of customers in the compiled data is below 15, or if a single customer's load is more than 15 percent of the total data, categories must be combined before the information is released. The Rule further requires that, if the 15/15 Rule is triggered for a second time after the data have been screened once already using the 15/15 Rule, the customer be dropped from the information provided.

- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

  For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, the SCAQMD requires an assessment of GHG emissions. The SCAQMD is proposing a "bright-line" screening-level threshold of 3,000 MT of CO_2e annually for all land-use types or the following land-use-specific thresholds: 1,400 MT of CO_2e for commercial projects, 3,500 MT of CO_2e for residential projects, or 3,000 MT of CO_2e for mixed-use projects. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on its review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions.

- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.
- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

  The SCAQMD has identified an efficiency target for projects that exceed the screening threshold. The current recommended approach is per capita efficiency targets. The SCAQMD is not recommending use of a percentage emissions-reduction target; instead, the SCAQMD identified a 2020 efficiency target of 4.8 MT of CO_2e per year per service population (MT of CO_2e/yr/SP) for project-level analyses and 6.6 MT of CO_2e/yr/SP for plan-level projects (e.g., general plans). Service population (SP) is defined as the sum of the residential and employment populations provided by a project.

For purposes of this analysis, as the buildout year for the proposed LUE/UDE project is 2040, its per capita emissions rate is evaluated to an interim year 2040 efficiency target as discussed below.

The per capita efficiency targets are based on the Assembly Bill (AB) 32 GHG reduction target and 2020 GHG emissions inventory prepared for the ARB 2008 Scoping Plan.[1] Because the project is an LUE update to the existing General Plan, project emissions are compared to the SCAQMD's plan-level efficiency threshold. The following threshold is the applicable GHG threshold for the proposed project:

- 2040 GHG efficiency target of 3.4 MT of CO_2e per service population, per year.

Per SCAQMD guidance, plan level analyses (such as the proposed project) should be measured against the 6.6 MT of CO_2e/yr/SP efficiency target up to the year 2020. The use of post-2020 efficiency metrics poses a further challenge for general plans that have post-2020 build out or operational dates. The 2020 timeframe is important because it is tied to California's AB 32 goal

[1] The SCAQMD took the 2020 statewide GHG reduction target for land-use-only GHG emissions sectors and divided it by the 2020 statewide employment for the land-use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

(reduction of GHG emissions to 1990 levels by the year 2020). Executive Orders (EOs) B-30-15 and S-3-05 establish a more aggressive emissions reduction goal for target years 2030 (40 percent reduction in emission below 1990 levels) and 2050 (80 percent reduction in emissions below 1990 levels). The post-2020 GHG efficiency standard of 3.4 MT of CO_2e/yr/SP is derived by interpolating between years 2020 and 2050 targets for the year 2040. In other words, the efficiency target must meet or exceed (be below) the efficiency target of 3.4 MT of CO_2e/yr/SP to achieve the ambitious reductions goals established by the State of California for GHG emissions to the year 2050.If the community GHG emissions exceed this per capita efficiency target, GHG emissions would be considered potentially significant in the absence of mitigation measures.

- Determination of the required measures to reduce GHG emission levels.

4.3.2 Existing Environmental Setting

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

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

The project site is currently developed and consists of a mix of residential, commercial, medical, institutional, and open space and recreation uses. These uses currently generate emissions from natural gas use for energy, heating, and cooking; vehicle trips associated with each land use; and area sources such as landscaping equipment and consumer cleaning products.

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

Global Climate Change. Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. Climate change refers to any change in measures of weather (such as temperature, precipitation, or wind) lasting for an extended period

(decades or longer). Climate change may result from natural factors, such as changes in the sun's intensity; natural processes within the climate system, such as changes in ocean circulation; or human activities, such as the burning of fossil fuels, land clearing, or agriculture. The observed warming effect associated with the presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as the greenhouse effect. The Earth's average near-surface atmospheric temperature rose 0.6 ±0.2 degrees Celsius (°C) or 1.1 ±0.4 degrees Fahrenheit (°F) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities.[1] Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns or more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones. Specific effects in California might include a decline in the Sierra Nevada snowpack, erosion of California's coastline, and seawater intrusion in the Sacramento-San Joaquin River Delta (Delta).

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

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

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO_2, CH_4, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere. Certain other gases, such as water vapor, are short-lived in the atmosphere as compared to these GHGs that remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is generally 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. For the purposes of this analysis, the term "GHGs" will refer collectively to the six gases identified above.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared

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[1] Intergovernmental Panel on Climate Change (IPCC). *Climate Change 2007: The Physical Science Basis*. Website: http://www.ipcc.ch.

radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or MT of "CO_2 equivalents" (CO_2e). Table 4.3.A shows the GWPs for each type of GHG.

Table 4.3.A: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
Carbon Dioxide (CO_2)	50–200	1
Methane (CH_4)	12	25
Nitrous Oxide (NO_x)	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7.390
PFC: Hexafluoromethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC, 2007. *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.
HFC = Hydrofluorocarbons
PFC = Perfluorocarbons

The characteristics of these six GHGs and a discussion of black carbon are provided below.

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

In 2002, CO_2 emissions from fossil fuel combustion accounted for approximately 98 percent of man-made CO_2 emissions and approximately 84 percent of California's overall GHG emissions (in CO_2e). The transportation sector accounted for California's largest portion of CO_2 emissions, with gasoline consumption making up the greatest portion of these emissions. Electricity generation was California's second largest category of GHG emissions.

Methane (CH_4). CH_4 is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation,

manure management, and rice cultivation are also significant sources of CH_4 in California. Methane accounted for approximately 6 percent of gross climate change emissions (in CO_2e) in California in 2002.

Total annual emissions of CH_4 are approximately 500 million tons, with manmade emissions accounting for the majority. As with CO_2, the major removal process of atmospheric methane—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH_4 concentrations in the atmosphere are increasing.

Nitrous Oxide (N_2O). N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N_2O is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion sources emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as the maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. N_2O emissions accounted for nearly 7 percent of man-made GHG emissions (CO_2e) in California in 2002.

Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur Hexafluoride (SF_6). HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[1] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 3.5 percent of man-made GHG emissions in California in 2002.

Black Carbon (BC). BC is the most strongly light-absorbing component of particulate matter (PM) formed by burning fossil fuels such as coal, diesel, and biomass. BC is emitted directly into the atmosphere in the form of $PM_{2.5}$ and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in the atmosphere, BC can absorb a million times more energy than CO_2.[2] BC contributes to climate change both directly, such as absorbing sunlight, and indirectly, such as affecting cloud formation. However, because BC is short-lived in the atmosphere, it can be difficult to quantify its effect on global-warming.

Most U.S. emissions of BC come from mobile sources (52 percent), especially diesel engines and vehicles. The other major source is open biomass burning, including wildfires, although residential heating and industry also contribute. The ARB estimates that the annual BC emissions

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

[2] United States Environmental Protection Agency (EPA). 2015. *Black Carbon*. September. Website: http://www3.epa.gov/blackcarbon/basic.html (accessed September 17, 2015).

in California have decreased approximately 70 percent between 1990 and 2010 and are expected to continue to decline significantly due to controls on mobile diesel emissions.

Effects of Global Climate Change. Effects from GCC may arise from temperature increases, climate-sensitive diseases, extreme weather events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. GCC may also contribute to air quality problems from increased frequency of smog and particulate air pollution.[1]

Additionally, according to the 2006 California Climate Action Team (CAT) Report,[2] the following climate change effects, which are based on trends established by the United Nations Intergovernmental Panel on Climate Change (IPCC), can be expected in California over the course of the next century:

- The loss of sea ice and mountain snow pack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures.[3]
- Rise in global average sea level, primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets.[4]
- Changes in weather that include widespread changes in precipitation, ocean salinity, wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones.[5]
- Decline of the Sierra snowpack, which accounts for approximately one-half of the surface water storage in California by 70 percent to as much as 90 percent over the next 100 years.[6]
- Increase in the number of days conducive to O_3 formation by 25–85 percent (depending on the future temperature scenario) in high O_3 areas of Los Angeles and the San Joaquin Valley by the end of the 21st century.[7]

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1 EPA. 2016. *Climate Impacts on Human Health*. April. Website: https://www3.epa.gov/climatechange/impacts/health.html (accessed May 2016).
2 California Environmental Protection Agency (Cal-EPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature,* March.
3 Ibid.
4 Ibid.
5 IPCC. 2007. *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*, February.
6 Cal-EPA. 2006. *Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature.* March.
7 Ibid.

- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.[1]

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

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

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

[1] Cal-EPA. 2006. *Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature.* March.

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

Potential Water Resource Impacts	Anticipated Consequences Statewide
Changes in urban and agricultural water demand	• Changes in demand patterns and evapotranspiration
Increase in the number of days conducive to O_3 formation	• Increased temperatures • Potential health effects, including adverse impacts to respiratory systems

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

Effects of Rising Ocean Levels in California. Rising ocean levels, more intense coastal storms, and warmer water temperatures may increasingly threaten the Long Beach coastal region. As previously described, global surface temperatures have increased by 1.5°F during the period from 1880 to 2012, with temperatures anticipated to rise in California by 3 to 10.5°F by the end of the century.

Rising sea levels may affect the natural environment in the coming decades by eroding beaches, converting wetlands to open water, exacerbating coastal flooding, and increasing the salinity of estuaries and freshwater aquifers. Coastal headlands and beaches are expected to erode at a faster pace in response to future sea level rise. The California Coastal Commission estimates that 450,000 acres of wetlands exist along the California coast,[1] but additional work is needed to evaluate the extent to which these wetlands would be degraded over time, or to what extent new wetland habitat would be created if those lands are protected from further development. Cumulatively, the effects of sea level rise may be combined with other potential long-term factors such as changes in sediment input and nutrient runoff. The cumulative impacts of physical and biological change due to sea level rise on the quality and quantity of coastal habitats are not well understood.[2]

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

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[1] California Coastal Commission (CCC), *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone*. Website: http://www.coastal.ca.gov/wetrev/wetch4.html (accessed February 2015).

[2] Climate Change Science Program (CCSP) 4.1. January 15, 2009, 1 of 784 Final Report, United States CCSP, Synthesis and Assessment Product 4.1. *Coastal Sensitivity to Seal Level Rise: A Focus on the Mid-Atlantic Region*. Lead Agency: U.S. Environmental Protection Agency, Other Key Participating Agencies: U.S. Geological Survey, National Oceanic and Atmospheric Administration. Contributing Agencies: Department of Transportation.

Mendocino because the land is being pushed upward as the ocean plate moves under the continental plate along the Cascadia Subduction Zone.

According to the National Research Council's (NRC) June 2012 report on *Sea Level Rise for the Coasts of California, Oregon, and Washington*, sea level rise will cause many harmful economic, ecological, physical and social impacts but incorporating sea level rise impacts into agency decisions can help mitigate some of these potential impacts. According to the NRC's report, the State of California's *Sea-Level Guidance Document* recommends the ranges of sea level rise presented in the June 2012 NRC report as a starting place for analysis of potential impacts related to sea level rise. Accordingly, Table 4.3.C presents the seal level rise projections based on the NRC report.

Table 4.3.C: Sea-Level Rise Projections using 2000 as the Baseline - Areas South of Cape Mendocino

Time Period	Sea Level Rise
2000–2030	4 to 30 cm (0.13 to 0.98 ft)
2000–2050	12 to 61 cm (0.39 to 2.0 ft)
2000–2100	42 to 167 cm (1.38 to 5.48 ft)

Source: Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), State of California Sea-Level Rise Guidance Document (March 2013).
cm = centimeters
ft = foot/feet

Rising sea levels may also affect the built environment, including coastal development such as buildings, roads, and infrastructure. Coastal areas within the City are relatively flat, low-lying, and developed and may be directly affected by the change in sea level resulting from GCC.

Areas that are essentially at sea level are potentially exposed to the rising of the ocean levels and could result in on-site flood conditions. A recent wave uprush study completed for a project along the coast in Long Beach indicated that sea levels along the Long Beach Coast could be expected to rise 0.5 to 2.6 feet (ft) by 2060 and 1.4 to 5.5 ft by 2100.[1] This is consistent with the seal level rise projections included in Table 4.3.C above.

Existing Greenhouse Gas Emissions. An emissions inventory that identifies and quantifies the primary human-generated sources and sinks (an artificial reservoir of emissions) of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, national, California, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

[1] Moffat & Nichol. 2014. *Wave Uprush Study,* October.

Global Emissions. Worldwide emissions of GHGs in 2010 were 30.6 billion MT[1] of CO_2e per year.[2] Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change (UNFCCC).

United States Emissions. In 2010, the United States emitted approximately 6.8 billion MT of CO_2e. Of the six economic sectors nationwide—electric power, transportation, agriculture, commercial, and residential—the electric power industry and transportation sectors combined account for approximately 62 percent of the GHG emissions; the majority of the electrical power industry and all of the transportation emissions are generated from direct fossil fuel combustion. Overall, from 1990 to 2010, total emissions of CO_2 increased by 605.9 Tg[3] CO_2e (11.9 percent), while total emissions of CH_4 and N_2O decreased by 1.7 Tg CO_2e (0.3 percent), and 10.0 Tg CO_2e (3.2 percent), respectively. During the same period, aggregate weighted emissions of HFCs, PFCs, and SF_6 rose by 52.5 Tg CO_2e (58.2 percent). From 1990 to 2010, HFCs increased by 86.1 Tg CO_2e (233.1 percent), PFCs decreased by 15.0 Tg CO_2e (72.7 percent), and SF_6 decreased by 18.6 Tg CO_2e (57.0 percent).

City of Long Beach Emissions. An emissions inventory of the City was conducted based on the existing land uses and is shown in Table 4.3.D. Existing land uses include: residential, commercial, office, and industrial. GHG emissions generated in the City's LUE Major Areas of Change were estimated using EMFAC2014, OFFROAD, NONROAD, and data provided by the City Water Department and SoCal Gas for electricity and natural gas use, respectively.

Emissions for the City's LUE Major Areas of Change come from the following sources:[4]

- **Transportation:** Emissions from vehicle trips beginning and ending in the City and from external/internal vehicle trips (i.e., trips that either begin or end in the City).
- **Area Sources:** Emissions generated from lawn and garden, commercial, and construction equipment use in the City.
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1 A metric ton is equivalent to approximately 1.1 tons.

2 The International Energy Agency (IEA). World Energy Outlook. 2011. Released on November 9, 2011. Website: http://www.worldenergyoutlook.org/weo2011/.

3 Tg = teragram, equivalent to a million metric tons.

4 Governor's Office of Planning and Research (OPR). 2008. *Proposed Amendments to CEQA Guidelines, Appendix F – Energy Analysis*. Life-cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions, found that life-cycle analysis was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life-cycle emissions would be speculative. A life-cycle analysis is not warranted.

Table 4.3.D: Existing City of Long Beach LUE Major Areas of Change Greenhouse Gas Emissions Inventory

Sector	Existing (CEQA Baseline) 2012 GHG Emissions	
	MT of CO_2e/yr	Percentage of Total
Transportation[1]	826,184	80.19
Energy – Residential[2]	54,054	5.94
Energy – Nonresidential[2]	130,111	12.63
Waste[3]	4,932	0.48
Water/Wastewater[4]	15,006	1.46
Existing LUE Major Areas of Change Emissions Total	1,030,893	100
Service Population[5]	107,893	N/A
MT of CO_2e/Year/Service Population	9.5	N/A

Source: Compiled by LSA Associates, Inc. (2016).
Note: Emissions may not total 100 percent due to rounding.

1 EMFAC2014. Model runs were based on daily per capita VMT data provided by LSA Associates, Inc.

2 Electricity and natural gas usage data provided by Southern California Edison and City of Long Beach Gas and Oil and 2014 California Gas Report, respectively. The carbon intensity of the purchased electricity is provided by the CEC for the Long Beach area. For natural gas, the intensity factors for CO_2, CH_4 and N_2O are from the LGOP, Version 1.1 (May 2010).

3 Landfill Emissions Tool Version 1.3 and CalRecycle. Waste generation based on 2012 waste commitment for the City of Long Beach obtained from CalRecycle. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System. The landfill gas capture efficiency is based on ARB's LGOP, Version 1.1. Significant CH_4 production typically begins 1 or 2 years after waste disposal in a landfill and continues for 10 to 60 years or longer. Therefore, the highest CH_4 emissions from waste disposal in a given year are reported.

4 LGOP, Version 1.1, based on the City's UWMP for water demand and City-provided wastewater generation rates.

5 Consists of approximately 59,598 residents and 48,295 employees for existing condition year 2012 within the LUE Major Areas of Change.

ARB = California Air Resources Board
CalRecycle = California Department of Resources Recycling and Recovery
CEC = California Energy Commission
CEQA = California Environmental Quality Act
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
GHG = greenhouse gas
LGOP = Local Government Operations Protocol
LUE = Land Use Element
MT of CO_2e/yr = metric tons of carbon dioxide equivalent per year
N/A = Not Applicable
N_2O = nitrous oxide
SP = Service Population
UWMP = Urban Water Management Plan
VMT = vehicle miles traveled

- **Energy:** Emissions generated from purchased electricity and natural gas consumption used for lighting, cooking, and heating in the City.
- **Solid Waste Disposal:** Indirect emissions from waste generated in the City.
- **Water/Wastewater:** Emissions from electricity used to supply, treat, and distribute water and wastewater based on the overall water demand and wastewater generation in the City.

4.3.3 Regulatory Setting

Federal Regulations.

Clean Air Act. The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the United States Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS) with states retaining the option to adopt standards that are more stringent or to include other specific pollutants. The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO_2 emissions under the CAA. While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the EPA commenced several actions in 2009 to implement a regulatory approach to global climate change, including the ones described below.

On September 22, 2009, the EPA issued a final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. In general, this national reporting requirement will provide the EPA with accurate and timely GHG emissions data from facilities that emit 25,000 MT or more of CO_2 per year. This publicly available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs, along with vehicle and engine manufacturers, will report at the corporate level. An estimated 85 percent of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this rule.

On December 7, 2009, the EPA Administrator signed a final action under the CAA, finding that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change. This EPA action does not impose any requirements on industry or other entities. However, the findings are a prerequisite to finalizing the GHG emission standards for light-duty vehicles mentioned below. The EPA received ten petitions challenging this determination. On July 29, 2010, the EPA denied these petitions.

On April 1, 2010, the EPA and the Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) announced a final joint rule to establish a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. The EPA is finalizing the first-ever national GHG emissions standards under the CAA, and NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. The EPA GHG standards require light-duty vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile in model year 2016, equivalent to 35.5 miles per gallon.

In December 2010, the EPA issued its plan for establishing GHG pollution standards under the CAA in 2011. The agency looked at a number of sectors and is moving forward on GHG standards for fossil fuel power plants and petroleum refineries, two of the largest industrial sources, representing nearly 40 percent of the GHG pollution in the United States.[1]

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[1] EPA, 2010. Press Release. December 23.

The EPA and the NHTSA also established standards to reduce GHG emissions and improve the fuel efficiency of heavy-duty trucks and buses.

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

Executive Order S-3-05. Governor Schwarzenegger signed Executive Order (EO) S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. The executive order declared that increased temperatures could reduce snowpack in the Sierra Nevada Mountains, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established California's GHG emissions reduction targets, which established the following goals:

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

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

The Secretary of Cal-EPA leads this CAT made up of representatives from State agencies as well as numerous other boards and departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide GHG targets that were established in the executive order and further defined under Assembly Bill (AB) 32, the "Global Warming Solutions Act of 2006." The first CAT Report to the Governor and the Legislature was released in March 2006, which laid out 46 specific emission reduction strategies for reducing GHG emissions and reaching the targets established in the Executive Order. The CAT Report to the Governor and Legislature and will be updated and issued every 2 years thereafter; the most recent was released in 2013.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing GHG emissions is AB 32, passed by the State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The ARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected BAU 2020 emissions of 596 MMT. AB 32 requires the ARB to prepare a Scoping Plan that

outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed the ARB and the newly created CAT to identify a list of "discrete early action GHG reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed EO S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard. The executive order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the ARB to consider the Low Carbon Fuel Standard as a discrete early action measure.

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

ARB Scoping Plan. In December 2008, the ARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 169 MMT of CO_2e, or approximately 30 percent from the State's projected 2020 emission level of 596 MMT of CO_2e under a BAU scenario (this is a reduction of 42 MMT of CO_2e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

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

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

2 ARB. 2007b. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. Website: www.arb.ca.gov/newsrel/nr102507.htm. October 25.

The Scoping Plan identifies 18 emissions reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high speed rail, green building strategies, recycling, sustainable forests, water, and air (refer to Table 4.3.E). The measures would result in a total reduction of 174 MMT of CO_2e by 2020.

On August 24, 2011, the ARB unanimously approved both the ARB's new supplemental assessment and re-approved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The ARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program. The ARB also announced that it would be delaying the date that entities would be required to comply with its cap-and-trade program until 2013.

The ARB has not yet determined what amount of GHG reductions it recommends from local government operations; however, the Scoping Plan does state that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, the ARB is also developing additional protocols for community emissions). The ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects approximately 5.0 MMT of CO_2e will be achieved associated with implementation of SB 375.

Senate Bill 97 (2007). SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the State of California, Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA. The California Natural Resources Agency adopted the amendments to the *CEQA Guidelines* in January 2010, which went into effect in March 2010. The amendments do not identify a threshold of significance for GHG emission, nor do they prescribe assessment methodologies or specific mitigation measures.

Executive Order B-30-15. EO B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. EO B-30-15 also directs ARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the State and requires State agencies to implement measures to meet the interim 2030 goal of EO B-30-15 as well as the long-term goal for 2050 in EO S-03-5. It also requires the Natural Resources Agency to conduct triennial updates to the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in State planning and investment decisions.

Table 4.3.E: Recommended Actions from the ARB Climate Action Team Scoping Plan

ID #	Sector	Strategy Name
T-1	Transportation	Pavley I and II – Light-Duty Vehicle GHG Standards
T-2		LCFS (Discrete Early Action)
T-3		Regional Transportation-Related GHG Targets
T-4		Vehicle Efficiency Measures
T-5		Ship Electrification at Ports (Discrete Early Action)
T-6		Goods-movement Efficiency Measures
T-7		Heavy Duty Vehicle GHG Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)
T-8		Medium and Heavy-Duty Vehicle Hybridization
T-9		High Speed Rail
E-1	Electricity and Natural Gas – General Energy	Increased Utility Energy-Efficiency Programs. More Stringent Building and Appliance Standards
E-2		Increase Combined Heat and Power Use by 30,000 GWh
E-3		Renewables Portfolio Standard
E-4		Million Solar Roofs
CR-1	Electricity and Natural Gas – Commercial and Residential	Energy Efficiency
CR-2		Solar Water Heating
GB-1	Green Buildings	Green Buildings
W-1	Water	Water Use Efficiency
W-2		Water Recycling
W-3		Water System Energy Efficiency
W-4		Reuse Urban Runoff
W-5		Increase Renewable Energy Production
W-6		Public Goods Charge (Water)
I-1	Industry	Energy Efficiency and Co-benefit Audits for Large Industrial Sources
I-2		Oil and Gas Extraction GHG Emission Reduction
I-3		GHG Leak Reduction from Oil and Gas Transmission
I-4		Refinery Flare Recovery Process Improvements
I-5		Removal of CH_4 Exemption from Existing Refinery Regulations
RW-1	Recycling and Waste Management	Landfill CH_4 Control (Discrete Early Action)
RW-2		Additional Reductions in Landfill CH_4 – Capture Improvements
RW-3		High Recycling/Zero Waste
F-1	Forestry	Sustainable Forest Target
H-1	High GWP Gases	Motor Vehicle Air Conditioning Systems (Discrete Early Action)
H-2		SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)
H-3		Reduction in Perfluorocarbons in Semiconductor Manufacturing (Discrete Early Action)
H-4		Limit High GWP Use in Consumer Products (Discrete Early Action, Adopted June 2008)
H-5		High GWP Reductions from Mobile Sources
H-6		High GWP Reductions from Stationary Sources
H-7		Mitigation Fee on High GWP Gases
A-1	Agriculture	CH_4 Capture at Large Dairies

Source: California Air Resources Board. *Climate Change Proposed Scoping Plan* (2008).

ARB = California Air Resources Board
CH_4 = methane
GHG = greenhouse gas
GWh = gigawatt hour
LCFS = Low Carbon Fuel Standard
SF_6 = sulfur hexafluoride

Senate Bill 375. SB 375, the Sustainable Communities and Climate Protection Act, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. On September 23, 2010, the ARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the Metropolitan Planning Organization (MPOs); the targets require a 7 to 8 percent reduction by 2020 and between 13 to 16 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs such as the Southern California Association of Governments (SCAG) will work with local jurisdictions in the development of Sustainable Communities Strategy (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. Pursuant to SB 375, the SCAG reduction targets for per capita vehicular emissions are 8 percent by 2020 and 13 percent by 2035 as shown in Table 4.3.F.[1]

Table 4.3.F: September 2010 ARB SB 375 Reduction Goals

	By 2020 (percent)	By 2035 (percent)
San Francisco Bay Area	7	15
San Diego	7	13
Sacramento	7	16
Central Valley/San Joaquin	5	10
Los Angeles/Southern California	8	13

Source: California Air Resources Board. *Final Regional GHG Emission Reduction Targets* (2011).
ARB = California Air Resources Board
SB = Senate Bill

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

Cap and Trade. The development of a cap-and-trade program was included as a key reduction measure of the ARB AB 32 Climate Change Scoping Plan. The cap-and-trade emissions trading program developed by ARB took effect on January 1, 2012, with enforceable compliance obligations beginning January 1, 2013. The cap-and-trade program aims to regulate GHG

[1] ARB. 2010. Resolution 10-31: Regional Greenhouse Gas Emissions Reduction Targets Pursuant to SB 375. September 23, 2010.

emissions from the largest producers in the State by setting a statewide firm limit, or cap, on allowable annual GHG emissions. The cap contains three compliance phases. In Compliance Phase One, large emitters from the electricity and industrial sector come under the cap. In Compliance Phase Two, which commences in 2015, fuels will be subject to the cap. Compliance Phase Three will include all three sectors (electricity, industry, and fuels) and will run until 2020. ARB administered the first auction on November 14, 2012, with many of the qualified bidders representing corporations or organizations that produce large amounts of GHG emissions, including energy companies, agriculture and food industries, steel mills, cement companies, and universities (ARB 2012). California is working closely with British Columbia, Ontario, Quebec, and Manitoba through the Western Climate Initiative to develop harmonized cap-and-trade programs that will deliver cost-effective emission reductions. Two lawsuits have been filed against cap-and-trade, but the cap-and-trade program will be implemented as is until further notice.[1]

Local and Regional Policies and Regulations.

Southern California Association of Governments 2012 Regional Transportation Plan/Sustainable Communities Strategy. SCAG's 2012 Regional Transportation Plan (RTP)/ SCS is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks in the southern California region. The 2012 RTP/SCS incorporates local land-use projections and circulation networks in city and county general plans. The projected regional development pattern, including locations of land uses and residential densities included in local general plans, when integrated with the proposed regional transportation network identified in the 2012 RTP/SCS, would reduce per capita vehicular travel-related GHG emissions and achieve the GHG reduction per capita targets for the SCAG region of 8 percent per capita from 2005 GHG emission levels by 2020 and 13 percent per capita from 2005 GHG emission levels by 2035.

City of Long Beach Sustainable City Action Plan. The City's Sustainable City Action Plan (SCAP) was adopted in February 2010.[2] The SCAP is intended to guide operational, policy, and financial decisions to create a more sustainable Long Beach. The SCAP includes initiatives, goals and actions that will move Long Beach toward becoming a sustainable city. These goals and actions included in the SCAP relate to the following:

- Buildings & Neighborhoods
- Energy
- Green Economy & Lifestyle
- Transportation
- Urban Nature
- Waste Reduction
- Water

[1] ARB. 2014. Cap and Trade Program. Website: http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm (accessed September 10, 2014).

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

Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies. The following proposed strategies and policies from the proposed LUE are applicable to the analysis of GHG emissions and GCC. There are no applicable goals, strategies, or policies from the UDE.

Land Use Element.

- **Strategy No. 1:** Support sustainable urban development patterns.
- **LU Policy 1-1:** Promote sustainable development patterns and development intensities that use land efficiently and accommodate and encourage walking.
- **LU Policy 1-2:** Support high-density residential, mixed-use and transit-oriented development within the downtown, along transit corridors, near transit stations and at neighborhood hubs.
- **LU Policy 1-3:** Require sustainable design strategies to be integrated into public and private development projects.
- **LU Policy 1-5:** Encourage resources and processes that support sustainable development for adaptive reuse projects, as well as appropriate infill projects.
- **Strategy No. 2:** Promote efficient management of energy resources to reduce greenhouse gas emissions and the impacts of climate change.
- **LU M-11:** Continue to implement the Sustainability Action Plan. Introduce new goals and action measures that promote sustainability, including items related to land use and mobility planning, increasing walking and biking, increasing energy efficiency, reducing greenhouse gases and promoting renewable energy.
- **LU M-60:** Continue to update the City's greenhouse gas (GHG) emissions inventory with the California Climate Action Registry, which will enable the City to better meet future environmental regulations and secure future grant funding for sustainability programs.
- **LU M-61:** Through the Port of Long Beach, provide Greenhouse Gas Emissions Reduction Grant Program and similar programs aimed at implementing strategies to reduce the impacts of greenhouse gases.
- **LU M-64:** Continue to participate in programs and organizations aimed at improving energy efficiency and reducing greenhouse gas emissions.
- **LU M-66:** Consult with utility companies in promoting and developing renewable energy and emerging greenhouse gas reduction technologies. Identify potential sites within the Regional-Serving Facilities PlaceType to locate such facilities.
- **Eastside Land Use Strategy 10:** Finish the City's urban forestry inventories then develop and implement tree planting, maintenance and greening plans, which are coordinated with citywide air quality improvement (greenhouse gas reduction) and local water-saving landscape plans and programs.

4.3.4 Thresholds of Significance

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

Threshold 4.3.1: Generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment

EO B-30-15 and EO S-03-05 identified the long-term goals of reducing GHG emissions by 40 percent and 80 percent of 1990 levels by 2030 and 2050, respectively. The interim efficiency threshold of 3.4 $MTCO_2e$/yr/SP measures progress in meeting the EO B-30-15 and EO S-03-05 reduction targets; or

Threshold 4.3.2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Standard Conditions and Project Design Features. No Standard Conditions or Project Design Features have been identified with respect to GCC and GHG emissions; however, the update to the LUE includes several policies to support sustainable urban development patterns previously identified above.

4.3.5 Project Impacts

Threshold 4.3.1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Significant Unavoidable Impact. As described in Chapter 3.0, Project Description, of this Draft EIR, major land use changes proposed as part of the LUE/UDE are identified as Major Areas of Change, and include eight primary change areas associated with the updated LUE.

- The first Major Area of Change involves the creation of more open space throughout the City. Areas targeted for the establishment of the Open Space PlaceType include small pockets of land along the Los Angeles River, two strips of land along State Route 103 and an abandoned railroad in the northern area of the City, a large portion of the Southeast Area Development and Improvement Plan (SEADIP) area, and pockets of land scattered throughout the City.
- The second Major Area of Change proposes to buffer industrial activities from existing neighborhoods by encouraging the conversion of some industrial uses to Neo Industrial uses. Areas targeted for the establishment of the Neo-Industrial PlaceType include existing industrial areas in the northern portion of the City and a larger industrial area along the Los Angeles River, just north of the City's Downtown.
- The third Major Area of Change aims to promote Regional-Serving Uses by maintaining existing regional-serving facilities throughout the City.
- The fourth Major Area of Change proposes to provide land use transitions from industrial to commercial uses in small areas in the northern portion of the City and in the area directly east of the Long Beach Airport.
- The fifth Major Area of Change aims to promote transit-oriented development along Long Beach Boulevard as part of a larger citywide effort to reduce automobile dependence in the City.
- The sixth Major Area of Change aims to continue development in the Downtown area.

- The seventh Major Area of Change aims to promote infill and redevelopment to support transit along Redondo and Cherry Avenues and near the Traffic Circle.
- The eighth Major Area of Change aims to redevelop sites within the City to their "highest and best use." The sites targeted for redevelopment are located within the SEADIP area, in the southeastern portion of the City.

In total, the LUE proposes changes to approximately 13 percent of the land area (or the equivalent of 4,180 acres) in the City. Construction associated with implementation of the LUE would occur over a period of approximately 15 to 24 years.

Impact Analysis. Implementation of the proposed LUE/UDE would contribute to GCC through direct and indirect emissions of GHGs from land uses within the City. The change in GHG emissions is based on the difference between the SP for the existing land uses and those associated with the proposed implementation of the LUE/UDE. Table 4.3.G compares the communitywide annual GHG emissions inventory (expressed in MT of CO_2e) for the City at build out in year 2040 to existing conditions (2012). The emissions shown in Table 4.3.G are expressed as the adjusted BAU (ABAU) buildout inventory, which includes reductions from federal and State measures identified in the ARB's Scoping Plan, including the Pavley fuel efficiency standards, the LCFS for fuel use (transportation and off-road), the 50% Renewable Portfolio Standards and 2017 CalGreen Code for Title 24 energy efficiency standards, and a reduction in carbon intensity from electricity use. The existing condition year 2012 does not account for GHG reductions in building energy use from Title 24 updates.

As noted above, the LUE includes strategies and policies that would result in further reductions in GHG emissions. In addition, EO B-30-15 and EO S-03-05 identified the long-term goals of reducing GHG emissions by 40 percent and 80 percent of 1990 levels by 2030 and 2050, respectively. The interim efficiency threshold of 3.4 MT of CO_2e/yr/SP measures progress in meeting the EO B-30-15 and EO S-03-05 reduction targets.

As shown in Table 4.3.G, on a per capita basis, buildout of the proposed LUE/UDE would reduce the GHG emissions from 9.5 MT of CO_2e/yr/SP under existing conditions down to 5.9 MT of CO_2e/yr/SP (with reduction measures incorporated). However, the LUE/UDE GHG emissions in the City for buildout year 2040 (5.9 MT of CO_2e/yr/SP) would still exceed the interim efficiency threshold of 3.4 MT of CO_2e/yr/SP. Consequently, although the implementation of the proposed LUE/UDE would result in lower GHG emissions within the City as compared to existing conditions, the GHG emissions would still exceed the interim efficiency threshold of 3.4 MT of CO_2e/yr/SP. Impacts are potentially significant, and mitigation is required.

While the proposed LUE/UDE includes various policies that would contribute to reduced GHG emissions, the City would require assistance from additional federal and State programs and regulations to achieve the long-term GHG emissions goal. Therefore, GHG impacts within the City from the overall growth under the proposed LUE/UDE project would need to develop a GHG reduction plan as recommended under CEQA Guidelines Section 15183.5 and a VMT reduction plan under CEQA Guidelines Section 21083 in order to achieve the long-term GHG reductions goals under EO B-30-15 and EO S-03-05.

Table 4.3.G: LUE/UDE Buildout 2040 GHG Emissions Inventory (MT of CO_2e/yr)

Sectors	Existing 2012 GHG Emissions	General Plan 2040	General Plan Change from 2012	LUE/UDE 2040 Buildout	LUE/UDE Change from 2012
Transportation[1]	826,184	544,830	-281,354	682,844	-143,341
Energy – Residential[2]	54,054	42,964	-11,090	52,588	-1,466
Energy – Nonresidential[2]	130,111	112,952	-17,159	136,968	6,857
Waste[3]	4,932	2,903	-2,030	3,638	-1,294
Water/Wastewater[4]	15,006	11,786	-3,220	14,392	-614
Emissions Total	1,030,287	715,434	-314,853	890,428	-139,859
Service Population[5]	107,893	119,684	N/A	150,002	N/A
Emissions per Service Population	9.5	6	N/A	5.9	N/A
SCAQMD Proposed Plan-Level Efficiency Standard	N/A	3.4	N/A	3.4	N/A

Source: Compiled by LSA Associates, Inc. (2016).

Notes: Emissions forecast based on changes in population (residential energy), employment (nonresidential energy), or service population (City energy, waste, water/wastewater, and transportation). Emissions may not total 100 percent due to rounding.

General Plan 2040 includes reductions identified in the Scoping Plan associated with transportation (Pavley+LCFS), energy (50% RPS), and Title 24 2017 CalGreen Building code (46% efficiency improvement over 2008 Title 24 code). The current inventory does not account for reductions in building energy use from Title 24 cycle updates.

1 EMFAC2014 based on daily per capita VMT data provided by LSA Associates, Inc. (2016). Modeling was conducted for both a General Plan 2040 scenario, and for the LUE/UDE 2040 scenario, which includes all statewide vehicle regulations.

2 Electricity and natural gas usage data provided by Southern California Edison and City of Long Beach Oil and Gas, respectively. The carbon intensity of the purchased electricity is estimated by CEC for Long Beach area. For natural gas, the intensity factors for CO_2, CH_4, and N_2O are provided by the EPA's e-GRID data for year 2012. The LUE/UDE 2040 scenario for residential electricity use includes a reduction in carbon intensity of Long Beach Water Department's energy supply required under the 50 percent RPS (CEC 2015).

3 Landfill Emissions Tool Version 1.3 and CalRecycle. Waste generation based on 2012 waste commitment for the City of Long Beach obtained from CalRecycle. Assumes 75 percent of fugitive GHG emissions are captured in the landfill's Landfill Gas Capture System. The landfill gas capture efficiency is based on the ARB's LGOP, Version 1.1. Significant CH_4 production typically begins 1 or 2 years after waste disposal in a landfill and continues for 10 to 60 years or longer. Therefore, the highest CH_4 emissions from waste disposal in a given year are reported.

4 LGOP, Version 1.1, based on the three-year water demand data as provided by Long Beach Water Department and City's 2010 UWMP. Forecasts are adjusted for increases in population and employment and are based on the target per capita of SBx7-7. The LUE/UDE 2040 scenario for residential electricity use includes a reduction in carbon intensity of Long Beach Water Department's energy supply required under the 50 percent RPS (CEC 2015).

5 Based on an existing service population of 107,893 people (59,598 residents and 48,295 employees), a projected LUE/UDE 2040 service population of 150,002 people (82,858 residents and 67,144 employees), and a projected General Plan 2040 service population of 119,684 people (63,707 residents and 55,977 employees).

ARB = California Air Resources Board
CALGreen = California Green Building Standards
CalRecycle = California Department of Resources Recycling and Recovery
CEC = California Energy Commission
CH_4 = methane
CO_2 = carbon dioxide
GHG = greenhouse gas
LCFS = Low Carbon Fuel Standard
LGOP = Local Government Operations Protocol
LUE/UDE = Land Use Element/Urban Design Element
MT COMT of CO_2e/yr = metric tons of carbon dioxide equivalent per year
N/A = Not Applicable
N_2O = nitrous oxide
RPS = Renewable Portfolio Standard
SB = Senate Bill
SCAQMD = South Coast Air Quality Management District
EPA = United States Environmental Protection Agency
UWMP = Urban Water Management Plan
VMT = vehicle miles traveled

Mitigation Measures GHG-1 through GHG-4 have been proposed to minimize and reduce potentially significant GHG impacts. These measures require the preparation of a GHG Reduction Plan or Climate Action Plan, the preparation of a VMT reduction plan, and adoption of mechanisms to ensure that specific GHG reduction features are incorporated into the design of future development projects to meet or exceed the statewide goals aimed at the reduction of GHG emissions.

In addition, the implementation of Mitigation Measures GHG-1 through GHG-4 would encourage and accommodate use of alternative-fueled vehicles and non-motorized transportation and would ensure that GHG emissions from the buildout of the proposed project would be minimized. However, in addition to the proposed mitigation measures, additional statewide measures would be necessary to reduce GHG emissions from development that may occur with adoption of the proposed project to meet the long-term GHG reduction goals under EO S-3-05 and EO B-30-15. The new EO B-30-15 requires ARB to prepare another update to the Scoping Plan to address the 2030 target for the State. At this time, there is no plan past 2020 that achieves the long-term GHG reduction goal established under EO S-3-05 or the new EO B-30-15. As identified by the California Council on Science and Technology (CCST), the State cannot meet the 2050 goal without major advancements in technology (CCST 2012). Since no additional statewide measures are currently available that can be implemented, GHG emission impacts for the project under the buildout scenario would remain significant and unavoidable.

Threshold 4.3.2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

Less than Significant Impact. In addition to the City's SCAP, there are two applicable existing plans, the ARB Scoping Plan and SCAG's 2012 RTP/SCS, that identify strategies to reduce GHG emissions that are applicable to the proposed project. The following discusses the consistency of the proposed project to these plans.

The City is assisting the State with implementation of the AB 32 Scoping Plan measures by reviewing projects for compliance with Title 24 standards that help reduce GHG emissions through increasing energy efficiency of new residential and nonresidential buildings. Table 4.3.H presents the additional electricity and natural gas consumption rate reductions from the implementation of the proposed 2016 Title 24 standards that would be effective on and after January 1, 2017. The 2016 update to the

Table 4.3.H: Additional Energy Consumption Rate Reductions from 2016 Title 24 Standards and 50 Percent Renewable Portfolio Standards

	Residential	Nonresidential	Total
Electricity (MWh)	14,556	72,993	87,548
Natural Gas (therms)	996	1,620	2,616

Source: Compiled by LSA Associates, Inc. (2016)
MWh = megawatt hours

Building Energy Efficiency Standards would result in greater energy efficiencies when compared to the current 2008 Title 24 Standards and focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential Standards include improvements for attics, walls, water heating, and lighting. The most significant efficiency improvements to the nonresidential Standards include alignment with the ASHRAE 90.1 2013 national standards. New efficiency requirements for elevators and direct digital controls are included in the nonresidential Standards. All new residential and nonresidential structures constructed under the proposed LUE/UDE would be required to be in compliance with 2016 Title 24 standards and the 50 percent RPS, which has the

potential to save up to approximately 87,548 MWh of electricity and 2,616 therms of natural gas annually.

Table 4.3.I provides a summary of the statewide strategies and the associated GHG emissions reductions when integrated into the proposed LUE/UDE project. In addition to these statewide strategies, the LUE/UDE policies outlined above would also contribute to reducing GHG emissions. Therefore, the proposed LUE/UDE project would be consistent with the Scoping Plan.

Table 4.3.I: Statewide GHG Emissions Reduction Strategies

Policy/Action	Policy/Implementation Action Description
Circulation/Land Use	
Pavley I	A clean-car standard that reduces GHG emissions from new passenger vehicles (light- to medium-duty) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the U.S. Environmental Protection Agency.
Advanced Clean Car (Pavley II)	A multifaceted approach focused on controlling smog and soot and reducing GHG emissions from passenger vehicles for model years 2015–2025. It is designed to extend beyond Pavley I (i.e., 2016). The program is anticipated to reduce GHG emissions by 12% in year 2025.
Low Carbon Fuel Standard (LCFS)	Requires a reduction of 2.5% in the carbon intensity of California's transportation fuels by 2015 and of at least 10% by 2020. Applies to refiners, blenders, producers, and importers of transportation fuels and uses market-based mechanisms to allow providers to use the most economically feasible methods to reduce emissions during the fuel cycle.
Energy Efficiency and Use	
Title 24 Energy Standards	Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission in June 1977 and are updated triennially to allow for consideration and possible incorporation of new energy-efficiency technologies and methods. The 2016 Building and Energy Efficiency Standards will be effective on January 1, 2017. Buildings that are constructed in accordance with the 2016 Building and Energy Efficiency Standards are 46 percent more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.
Title 24 CALGreen	Adopted in 2008 as part of the California Green Building Standards Code. Established planning and design standards for sustainable site development, energy efficiency, water conservation, material conservation, and internal air contaminants.
50% RPS	Senate Bill 350 was signed in October 2015 and expands the State's renewable energy standard to 50% renewable power by 2030. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.
Title 25	The 2006 Appliance Efficiency Regulations were adopted by the California Energy Commission and approved by the California Office of Administrative Law in 2006. The regulations include standards for both federally and non-federally regulated appliances.

Source: Compiled by LSA Associates, Inc. (2016).
CALGreen = California Green Building Standards
GHG = greenhouse gas
RPS = Renewable Portfolio Standard

The proposed LUE/UDE project and its policies would be consistent with the applicable RTP/SCS goals. Implementation of General Plan Air Quality Element policies would create higher density mixed-use communities. These policies, in addition to Policies LU 4.6, 18.1, and 21.6, which also call for creation of more mixed-use and walkable communities, would contribute to reduced VMT per capita and overall GHG emissions from passenger vehicles. Therefore, the proposed LUE/UDE project is consistent with SCAG's 2012 RTP/SCS.

City of Long Beach Sustainable City Action Plan: The SCAP is a City-adopted plan to guide the City in becoming more sustainable. As described above, the SCAP identifies a wide range of goals and implementation actions to conserve energy and water, reduce solid waste, address global warming, tailor urban design, protect natural habitats, improve transportation options, and reduce risks to human health. Specific goals related to GHG include increasing the use of renewable energy in the City and reducing the City's overall electric load by 10 percent. Other goals include reducing single-occupancy vehicle trips by 10 percent and advancing higher density mixed-use neighborhoods that are bike and pedestrian friendly. The proposed LUE/UDE project includes various policies, identified above in Section 4.3.4, that are and would be consistent with these goals and initiatives of the City's SCAP.

As demonstrated in the foregoing analysis, implementation of the proposed project would not conflict with or impede implementation of reduction goals identified in AB 32, EO S-3-05, or other strategies to help reduce GHGs to the level proposed by the Governor. In addition, the project would also be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the project. Further, the proposed project would result in a net reduction of overall GHG emissions. Therefore, the proposed project would not conflict with any applicable plan, program, policy, or regulation related to the reduction of GHG emissions. Impacts are considered less than significant, and no mitigation is required.

4.3.6 Mitigation Measures

The following mitigation measures have been identified to reduce GHG emissions that would result from the proposed project.

GHG-1 The City of Long Beach (City) shall develop a greenhouse gas (GHG) Reduction Plan or Climate Action Plan (CAP) to ensure that the City continues on a trajectory that aligns with the short-term, interim, and long-term state GHG reduction goals of Assembly Bill (AB) 32 (2020 goal), Executive Order (EO) B-30-15 (2030 goal), and EO S-03-05 (2050 goal). Within approximately 36 months of adoption of the proposed General Plan Land Use Element (LUE)/Urban Design Element (UDE) project, the City of Long Beach shall prepare and present to the City Council for adoption a community climate action plan/greenhouse gas reduction plan (Plan). The Plan shall identify strategies to be implemented to reduce GHG emissions associated with the City, and shall include as one alternative a program that achieves the AB 32 targets. In addition, the City shall monitor GHG emissions by updating its community-wide GHG emissions inventory every 5 years upon adoption of the initial Plan. Upon the next update to the Plan, the inventory, GHG reduction measures, and GHG reductions shall be forecast to year 2040 to ensure progress toward achieving

the interim target that aligns with the long-term GHG reduction goals of EO S-03-04. The Plan update shall take into account the reductions achievable from federal and State actions and measures as well as ongoing work by the City and the private sector. The 2040 Plan update shall be completed by January 1, 2020, with a plan to achieve GHG reductions for 2030 (EO B-30-15 goal), provided the State has an actual plan to achieve reductions for 2030. New reduction programs in similar sectors as the proposed Plan (building energy, transportation, waste, water, wastewater, agriculture, and others) will likely be necessary. Future updates to the Plan shall account for the horizon beyond 2030 as the State adopts actual plans to meet post-2030 targets. The Plan will include details on how the reduction programs will be implemented and will designate responsible parties to monitor progress and ensure implementation of the reductions within the Plan. A monitoring and reporting program will be included to ensure the Plan achieves the reduction targets. The Plan will also include criteria that would trigger an update to the Plan. Examples of triggers requiring a Plan update include monitoring of progress that demonstrates that the Plan will not achieve the reduction targets, or economic and/or population growth that exceeds the scope of the Plan. In all instances, the Plan and any updates shall be consistent with State and federal law.

Long Beach GHG Reduction Plan or Climate Action Plan Measures:

- Establish a goal to encourage 15 percent of existing single-family homes to install solar installations before 2020.
- Establish a goal to encourage 15 percent of existing commercial/industrial buildings to install solar installations before 2020.
- Collaborate with Long Beach Transit to implement “Smart Bus” technology, global positioning system (GPS), and electronic displays at all transit stops by 2020 to provide customers with “real-time” arrival and departure time information.
- Explore the opportunity for expansion of electric-vehicle infrastructure, including requiring electric-vehicle charging stations in new qualified developments.
- Develop public education materials that support and encourage the use of recycled water.
- Consider a plan for installing recycled water infrastructures for all new parks, schools, and other public facilities to use 100 percent recycled water for non-potable outdoor uses.
- Adopt a municipal goal of 100 percent recycled water for non-potable sources, as feasible, depending on available recycled water infrastructure.
- Adopt a landscaping water conservation ordinance that exceeds the requirements in the Model Landscape Ordinance (AB 1881).

Post-2020 Measures:

- Prior to January 1, 2020, the City of Long Beach shall update the GHG Reduction Plan or CAP to address the GHG reduction goals of EO B-30-15 for GHG sectors for which the City has direct or indirect jurisdictional control. The City shall identify a GHG emissions reduction target for year 2030 that is consistent with the GHG reduction goals identified in EO S-03-05. The GHG Reduction Plan or CAP shall be updated to include measures to ensure that the City is on a trajectory that aligns with the State's 2030 GHG emissions reduction target.

GHG-2 Within approximately 18 months of adoption of the proposed General Plan LUE/UDE project, the City shall prepare and present to the City Council for adoption a vehicle miles traveled (VMT) reduction plan to ensure that GHG reduction can be achieved by reducing VMT and by increasing or encouraging the use of alternative fuels and transportation technologies.

- The City will ensure that new development incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation.
- The City shall give priority to transportation projects that will contribute to a reduction in VMT per capita, while maintaining economic vitality and sustainability.
- The City will create an interconnected transportation system that allows a shift in travel from private passenger vehicle to alternative modes, including public transit, ride sharing, car sharing, bicycling, and walking.

GHG-3 Prior to issuance of building permits for residential development projects within the LUE/UDE Major Areas of Change, the property owner/developer shall indicate on the building plans that the following features have been incorporated into the design of the building(s). Proper installation of these features shall be verified by the City of Long Beach Building and Safety Bureau prior to issuance of a certificate of occupancy.

- For multifamily dwellings, electric vehicle charging shall be provided as specified in Section A4.106.8.2 (Residential Voluntary Measures) of the California Green Building Standards Code (CALGreen Code).
- Bicycle parking shall be provided as specified in Section A4.106.9 (Residential Voluntary Measures) of the CALGreen Code.

GHG-4 Prior to issuance of building permits for non-residential development projects within the LUE/UDE Major Areas of Change, the property owner/developer shall indicate on the building plans that the following features have been incorporated into the design of the building(s). Proper installation of these features shall be verified by the City of Long Beach Building and Safety Bureau prior to issuance of a certificate of occupancy.

- For buildings with more than ten tenant-occupants, changing/shower facilities shall be provided as specified in Section A5.106.4.3 (Nonresidential Voluntary Measures) of the CALGreen Code.
- Preferential parking for low-emitting, fuel-efficient, and carpool/van vehicles shall be provided as specified in Section A5.106.5.1 (Nonresidential Voluntary Measures) of the CALGreen Code.
- Facilities shall be installed to support future electric vehicle charging at each non-residential building with 30 or more parking spaces. Installation shall be consistent with Section A5.106.5.3 (Nonresidential Voluntary Measures) of the CALGreen Code.

4.3.7 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for GCC. However, unlike the cumulative analysis for many topics that address the combined impacts of a proposed project in addition to related projects in a project study area, GCC is affected by a larger range of development activity. Climate change is a global issue and is already addressed as a cumulative impact because individual projects are unlikely to measurably affect GCC. Although the State requires Metropolitan Planning Organizations and other planning agencies to consider how regionwide planning decisions can impact GCC, there is currently no established non-speculative methodology for assessing the cumulative impact of proposed independent private party development projects.

Although the proposed project is expected to emit GHGs, the emission of GHGs by any single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHGs from more than one project and many sources in the atmosphere that may result in GCC. The resultant consequences of that climate change, including sea level rise, could cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to State or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change. Due to the complex physical, chemical, and atmospheric mechanisms involved in GCC, it is speculative to identify the specific impact, if any, to GCC from one project's incremental increase in global GHG emissions. As such, a project's GHG emissions and the resulting significance of potential impacts are more properly assessed on a cumulative basis. Thus, the analysis conducted above is essentially already a cumulative analysis because it takes into consideration statewide GHG reduction targets and demonstrates that the proposed project would be consistent with those targets.

The State has mandated a goal of reducing statewide emissions to 1990 levels by 2020 and to 80 percent below 1990 levels by 2050, even though statewide population and commerce are predicted to continue to expand. In order to achieve these goals, the ARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions. However, there are currently no applicable significance thresholds, specific reduction targets, and/or approved policy or guidance to assist in determining significance at the cumulative level. Additionally, there is currently no generally accepted methodology to determine whether GHG emissions associated with a specific project represent new emissions or existing, displaced emissions.

As previously stated, the proposed project would result in a GHG emission profile that is lower than existing GHG emissions within the City. Additionally, since climate change is a global issue, it is unlikely that the proposed project would generate enough GHG emissions to influence GCC on its own. Because the proposed project's impacts alone would not cause or significantly contribute to GCC, project-related CO_2e emissions and their contribution to GCC impacts in the State of California would not make a significant contribution to cumulatively considerable GHG emission impacts. Therefore, the proposed project would not result in a significant long-term cumulative impact on GCC (including sea level rise).

As shown previously in Table 4.3.C, projected sea level rise for southern California is anticipated to be 0.39 to 2.9 ft by 2050 (NRC, 2012). A recent wave uprush study completed for a project along the coast in Long Beach indicated that sea levels along the Long Beach coastal area could be expected to rise 0.5 to 2.6 ft by 2060, and 1.4 to 5.5 ft by 2100[1]. This is consistent with the sea level rise projections by the NRC. Rising sea levels may affect the built environment, including coastal development such as buildings, roads, and infrastructure. However, future projects facilitated under the proposed LUE/UDE project would be planned in consideration of the conditions at the time they are proposed and would be evaluated for their potential to be affected by the change in sea level resulting from GCC during environmental review. Sea level rise is a slow gradual condition and future projects would be implemented over the proposed project's planning horizon through the year 2040 and would undergo environmental review, as necessary. Due to the programmatic nature of the project, the uncertainty in the timing regarding when sea level rise could affect coastal areas within the City limits, and because the future development proposals within the City would be subject to environmental review under CEQA and would be required to analyze potential sea level rise impacts and include mitigation as appropriate, cumulative sea-level rise impacts would be less than significant.

4.3.8 Level of Significance after Mitigation

The proposed project would result in significant unavoidable adverse impacts related to GHG emissions.

[1] Moffat & Nichol. 2014. *Wave Uprush Study,* October.

4.4 LAND USE AND PLANNING

4.4.1 Introduction

This section of the Draft Environmental Impact Report (EIR) analyzes the direct land use impacts associated with the long-term implementation of the proposed General Plan Land Use and Urban Design Elements project (proposed project). The key focus of the analysis is the potential for growth and development projected, as a result of project approval, to conflict with relevant policy and planning documents. The consistency analysis in this section was prepared in accordance with the California Environmental Quality Act (CEQA), specifically *State CEQA Guidelines* Section 15125(d). Information presented in this section is based on information provided in the proposed General Plan Land Use and Urban Design Elements (August 2016) (Appendix F), the City of Long Beach's (City) existing General Plan (as amended), the City's Zoning Code (Title 21), and associated Zoning Map, the City's Local Coastal Program (LCP) (1980), the Port of Long Beach Port Master Plan (PMP) (1978), the Draft 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2012–2035 RTP/SCS), the 2008 Regional Comprehensive Plan (2008 RCP), and the California Coastal Act of 1976 (CCA) (Public Resources Code [PRC], Division 20). In addition, per *State CEQA Guidelines* Section 15125(d), this Draft EIR evaluates the proposed project's consistency with other applicable planning documents as they relate to specific topical sections within Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures.

4.4.2 Methodology

The impact analysis of this section considers the physical impacts of the proposed project related to land use compatibility and considers whether or not there are potential inconsistencies of the proposed project with applicable planning documents from the City and other agencies with relevant plans or policies. Neither CEQA nor the *State CEQA Guidelines* establishes standards for determining whether or not a project is consistent with an applicable plan; rather, the final determination that a project is consistent or inconsistent with an applicable plan is made by the Lead Agency when it acts on the project. The analysis in this Draft EIR discusses the findings of policy review and is meant to provide a guide for decision-makers during policy interpretation.

A project's inconsistency with a policy is only considered significant if such inconsistency would cause significant physical environmental impacts. This Draft EIR section determines whether any project inconsistencies with public land use policies and documents would be significant and whether mitigation is feasible. Under this approach, a policy conflict is not in and of itself considered a significant environmental impact. An inconsistency between a proposed project and an applicable plan is a legal determination that may or may not indicate the likelihood of environmental impact. In some cases, an inconsistency may be evidence that an underlying physical impact is significant and adverse.

4.4.3 Existing Environmental Setting

Existing Land Uses. The City is almost entirely developed and is located within a highly urbanized area of Los Angeles County (County). As one of the largest cities in the County, the City encompasses 50 square miles in the southern region of the County.

In response to a desire to manage growth, the City adopted the 1989 Land Use Element (LUE), establishing a vision for orderly growth in the City. The existing 1989 LUE includes a summary of land uses and contains a discussion of the intended and allowable uses within each land use type. Per the 1989 LUE, future development must be consistent with land uses established for each parcel of land and must also be consistent with applicable goals and policies established for the proposed land use type.

Distribution of Land Use. As illustrated by Figure 3.2, Existing Land Uses (refer to Chapter 3.0, Project Description), in its existing setting, the majority of Long Beach's acreage is devoted to residential uses of varying densities. The remaining land uses characterizing the City are commercial, office, industrial, open space/recreational, and regional-serving uses. Existing development patterns associated with these uses are summarized and described further below.

Residential Uses. Residential uses are the predominant land use currently characterizing the City. Existing residential neighborhoods in the City vary widely in type and density. For example, residential uses include detached single-family homes, mixed-style homes (i.e., duplexes, triplexes, and townhomes), and moderate- to high-density housing (i.e., apartments and condominiums). Higher density residential uses are located closer to the City's Downtown area whereas lower density uses are located throughout the City and along its urban edge. The primary contributing factor for the wide range of housing densities and styles in the City is attributable to the time period during which the housing units were constructed. For example, single-family units on smaller lots with separate, detached garages were built from 1900 to 1930, whereas single-family homes built between 1930 and 1950 were developed at a mass-scale on larger lot sizes. However, from 1960 to 1980, housing units began to be developed within existing urban neighborhoods, thereby leading to higher-density housing developments. Large-scale housing development trends and the development of high-density housing units began in the 1980s and continue to the present day.

Commercial Uses. Existing commercial uses in the City consist primarily of commercial corridors, traditional retail strip commercial uses, pedestrian-oriented neighborhood retail areas, and auto-dominated shopping centers. The primary commercial core in the City is the Downtown area, which is located in the southernmost portion of the City in between the Los Angeles River and Alamitos Boulevard. While the City's Downtown serves as its primary commercial hub, there are several smaller commercial districts located throughout the City that serve surrounding residential neighborhoods.

Office Uses. Office uses are found throughout the City, primarily near commercial corridors and centers. Larger office buildings are primarily located in the Downtown area, near the Long Beach Airport, and along Long Beach Boulevard and San Antonio Drive. Existing office buildings range in height from two to 30 stories and typically accommodate parking through the use of parking structures.

Industrial Uses. Industrial uses in the City are primarily located near the Port of Long Beach, rail lines, and freeways. Older industrial uses are located adjacent to residential uses, whereas newer industrial uses are located adjacent to each other and are separated from residential and commercial uses. Industrial uses in the City include activities associated with the Port of Long Beach, trucking, packaging, assembly, light manufacturing, fabrication shops, food processing, auto and marine repair shops, and outdoor storage areas.

Open Space and Recreational Uses. Open space and recreational uses in the City range from small mini parks to large special uses areas. The most prominent open space areas in the City include El Dorado Regional Park, the Los Angeles and San Gabriel Rivers, beaches and shoreline, transmission power line rights-of-way, cemeteries, golf courses, marinas, bays, and wetlands. The City currently has over 100 public parks, two major tennis centers, five golf courses, and several marinas (e.g., Alamitos Bay Marina, Shoreline-Downtown Marina, and Rainbow Harbor Marina). The majority of open space and recreational uses in the City are located along waterways and are scattered throughout residential neighborhoods.

Regional-Serving Uses. The City is home to several regional-serving facilities that serve the City, the region, and the nation. Examples of these facilities include the Port of Long Beach, the Long Beach Airport, California State University Long Beach, Long Beach City College, several private colleges and universities, the AES Los Alamitos and Haynes Generating Station power plants, the Southeast Resource Recovery Facility, the Long Beach Memorial Medical Center, the Veterans Administration Long Beach Medical Center, St. Mary Medical Center, Pacific Hospital of Long Beach, and Community Hospital. These uses are generally located in the southwestern, central, and southeastern portions of the City.

Neighborhoods and Community Plan Areas. While the City consists of many distinct neighborhoods, there are nine primary community plan areas that combine to form the City's unique identity (refer to Figure 4.4.1, Community Plan Areas). These community plan areas are listed and briefly described below.

1. **North Long Beach.** The North Long Beach area is located west of Interstate 710 (I-710) and includes the residential and industrial areas located west of Cherry Avenue and residential uses north of the Union Pacific Railroad (UPRR). This area predominantly consists of residential and commercial uses; however, North Long Beach is also home to several public schools and a retail/business district.
2. **Bixby Knolls.** The Bixby Knolls area consists of the California Heights, Los Cerritos, Bixby Knolls, Bixby Highlands, Scherer Park, Ridgewood Heights, and Ranton Circle neighborhoods. This community is home to several historic resources as many of the residential units consist of custom homes built between the 1920s and 1940s. This area also includes a retail corridor along Atlantic Avenue between San Antonio Drive and the Interstate 405 (I-405) freeway.
3. **Westside and Wrigley.** The Westside and Wrigley community is located west of I-710 and includes the Westside and Arlington neighborhoods. The majority of the housing units in this area are single-family detached homes, also constructed between the 1920s and 1940s. This

community is also home to Cabrillo High School, the Villages at Cabrillo, and the Long Beach Jobs Center.

4. **Eastside.** The Eastside area is bound by the Cities of Los Alamitos and Hawaiian Gardens to the East, the City of Lakewood to the north, and the I-405 freeway to the south. This community is the largest of the nine community plan areas. Predominant uses in the Eastside area include low-density post-World War II housing, shopping centers, schools, religious institutions, and parks. This community plan area also contains an 800-acre open space area that features a community center and a 100-acre nature center, basketball and volleyball courts, a skate park, an archery range, picnic areas, a disc golf course, tennis courts, an 18-hole golf course, playgrounds, and a fishing lake and pond.
5. **Central.** The Central area includes both the Central Area West and Central Area East neighborhoods. The primary uses in this community plan area are residential and commercial. In addition to being one of several historic areas within the City, the Central area is also home to Cambodia Town, a 1-mile long business corridor along Anaheim Street.
6. **Traffic Circle.** The Traffic Circle area consists of a large multilane roundabout at the intersection of Pacific Coast Highway (PCH) and Lakewood Boulevard, as well as the Stearns Park, Alamitos Ridge, and Bryant School neighborhoods. Within this area, commercial and high-density residential uses are concentrated adjacent to the roundabout with more traditional suburban residential neighborhoods located further north.
7. **Downtown.** The Downtown area is the primary commercial hub in the City. This area consists of the Washington School, Wilmore City, West End, East Village, Promenade, North Pine, and the Downtown Shoreline neighborhoods. As the economic center of the City, the Downtown is comprised of commercial, financial, institutional, entertainment, retail, maritime, and high-density/moderate residential uses.
8. **Midshore.** The Midshore area is comprised of Alamitos Beach, Rose Park, Franklin School, Bluff Heights, and Bluff Park, most of which are considered historic residential districts. While Midshore is home to several historic residential homes, new high-density residential units line Ocean Avenue within this community plan area.
9. **Southeast.** The Southeast area is comprised of Alamitos Heights, Belmont Heights, Belmont Shore, Belmont Park, Naples, Peninsula, Recreation Park, University Park Estates, and the Southeast Area Development and Improvement Plan (SEADIP) neighborhoods. This area is predominantly characterized by residential and commercial uses; however, the variety and type, and architectural styles of residential and commercial uses are unique to each neighborhood within this area.

4.4.4 Regulatory Setting

Federal Policies and Regulations. There are no federal land use policies or regulations that are applicable to the proposed project with respect to land use regulation.

State Policies and Regulations.

California Coastal Act. The CCA of 1976 was created to (1) protect, maintain, and, where feasible, enhance and restore the overall quality of the Coastal Zone environment and its natural and manmade resources; (2) ensure orderly, balanced utilization and conservation of Coastal Zone resources, taking into account social and economic needs; (3) maximize public access to and along the coast and maximize public recreational opportunities in the Coastal Zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners; (4) ensure priority for coastal-dependent development over other development on the coast; and (5) encourage State and local cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses in the Coastal Zone.

The project includes the entire area within the City's limits, including the Coastal Zone, which is regulated by the California Coastal Commission (CCC) under the CCA. Pursuant to the CCA, the CCC has certified the City's LCP (see below for further details), giving the City the primary authority to regulate development and to issue Coastal Development Permits (CDPs) for projects requiring discretionary approval within its jurisdiction that are consistent with the LCP. While the City is the responsible agency with the authority to issue CDPs for projects located in the Coastal Zone, the CCC retains jurisdiction of those project activities occurring on tidelands and submerged lands. Implementation of the proposed project is considered a policy action and would not result in the physical development of any project that would require a CDP from either the City or the CCC.

Los Angeles County Airport Land Use Plan. Consistent with requirements established by the Federal Aviation Administration (FAA), the County of Los Angeles adopted the Los Angeles County Airport Land Use Plan on December 19, 1991. The overall intent of this plan is to reconcile land use patterns surrounding the Long Beach Airport and the functionality of the Long Beach Airport itself. Examples of compatibility concerns include noise and safety impacts to surrounding communities and development patterns that could adversely affect the viability of the airport. Such incompatibilities could ultimately interfere with the effectiveness and functionality of the Long Beach Airport. While the Airport Land Use Plan aims to reduce incompatibilities between the surrounding land uses and the Long Beach Airport, there is no master plan completed for the Long Beach Airport. As such, land use incompatibilities are regulated by Runway Protection Zones (easements for which land uses adjacent to the airport need to be controlled) and noise contour lines established on the Long Beach Airport Influence Area Map included in the Airport Land Use Plan.

California Government Code Section 65300. As described further in Chapter 3.0, Project Description, of this Draft EIR, State law requires every city and county in California to adopt a "comprehensive, long-term general plan for physical development." State law also requires the General Plan to identify goals and policies for the planning area as they relate to land use and development, provide a framework within which local decision-makers can make land use decisions, provide the public with an opportunity to participate in the decision-making process, and inform the community of the regulations guiding environmental protection and land use development decisions within the City.

State law also requires a General Plan to address seven mandatory topics, which include land use, circulation, housing, conservation, open space, noise and safety, but allows for flexibility in how these topics are addressed within the General Plan. While these seven elements are required, State law allows for local jurisdictions to adopt "optional" elements beyond those required by law. However, once adopted, these "optional" elements have the same force and effect as policies related to those elements required by State law.

The current Long Beach General Plan includes elements that address each of the seven mandatory issue areas required by State law, but goes beyond these required elements by adopting the Historic Preservation, Air Quality, Seismic Safety, and Scenic Routes Elements. The proposed project includes the replacement of the required existing Land Use Element (1989) with the proposed LUE and the replacement of the existing Scenic Routes Element (SRE) (1975) with the proposed "optional" Urban Design Element (UDE).

Local and Regional Plans and Policies. The City is covered by several planning documents and programs that have varying degrees of regulation. The City has preeminent authority over deciding the land uses within the City. The adopted planning documents regulating land use are the City's General Plan, the Zoning Code, and various specific plans.

Applicable regional, local, and conservation land use policies and guidelines from each of these planning documents are described below. In addition, pursuant to *State CEQA Guidelines* Section 15125 (d), the proposed project's consistency with other applicable regional plans and programs, such as the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP), is addressed in the appropriate topical sections of this EIR. The following paragraphs explain the regulations, plans, and policies applicable to the proposed project.

Regional Transportation Plan/Sustainable Communities Strategy. The Southern California Association of Governments (SCAG) is a regional council consisting of the following six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In total, the SCAG region encompasses 191 cities and over 38,000 square miles within Southern California. SCAG is the Metropolitan Planning Organization (MPO) serving the region under federal law, and serves as the Joint Powers Authority, the Regional Transportation Planning Agency, and the Council of Governments under State law. As the Regional Transportation Planning Agency, SCAG prepares long-range transportation plans for the Southern California region, including the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the 2008 Regional Comprehensive Plan (RCP).

On April 4, 2012, SCAG adopted the 2012–2035 RTP/SCS. However, SCAG is currently in the process of updating and replacing existing regional forecast assumptions with the 2016–2040 RTP/SCS. The 2016–2040 RTP/SCS is meant to provide a common foundation for regional and local planning, policymaking, and infrastructure provision within the SCAG region as part of the RTP formulation process, which is closely interlinked with the region's SCS and Regional Housing Needs Assessment (RHNA). While the 2012–2035 is the most recently adopted RTP, information provided in the Draft 2016–2040 RTP is utilized for purposes of this analysis, as the

planning period in the 2016–2040 RTP is congruent with the planning period for the proposed project.

The primary objective of the 2016–2040 RTP/SCS is to improve the region's mobility, economy, and sustainability through the implementation of economic, transportation, and land use goals and policies.

The 2016–2040 RTP/SCS establishes a number of initiatives aimed at improving the regional transit system and reducing automobile reliance in the SCAG planning area. Examples of these initiatives include promoting alternative modes of transportation and active transportation (e.g., bicycling and focusing new growth near transit and high-quality transit areas [HQTA] and livable corridors). HQTAs are defined as walkable transit villages or corridors within 0.5 mile of a well-serviced transit stop or transit corridor with a 15-minute or less service frequency during peak commuting hours. Livable corridors are defined as arterials characterized by a mix of higher-density residential uses, employment centers, active transportation, and alternative transportation modes. Overall, the 2016–2040 RTP/SCS aims to improve mobility and reduce automobile reliance.

Regional Comprehensive Plan. In 2008, SCAG adopted the RCP for the purpose of providing a comprehensive strategic plan for defining and solving housing, traffic, water, air quality, and other regional challenges. The 2008 RCP has two primary objectives in implementing this strategic plan: (1) integrating transportation, land use, and air quality planning approaches, and (2) outlining key roles for public and private sector stakeholders to implement reasonable policies regarding transportation, land use, and air quality approaches. While the 2008 RCP outlines several policies to inform local decision-makers within the SCAG region with respect to policy and planning decisions, these policies are considered recommendations and are not mandated by law.

With respect to land use policy, the 2008 RCP includes a Land Use and Housing Chapter that aims to link land use and transportation planning decisions to the projected population and economic growth in the SCAG region. Specifically, the Land Use and Housing Chapter of the 2008 RCP promotes sustainable planning for land use and housing in the SCAG region by maximizing the efficiency of the existing circulation network, providing a greater variety in housing types, promoting a diverse and growing economy, and protecting the existing natural environment. As previously stated, while the 2008 RCP identifies 2% Strategy Areas as part of the Sustainability Planning Grant (formerly known as Compass Blueprint growth vision), these areas have since been updated and replaced by the HQTAs identified in the 2016–2040 RTP/SCS.

City of Long Beach General Plan. The City's General Plan establishes goals, policies, and strategies that combine to serve as a "blueprint" directing future growth in the City. The current General Plan consists of the Historic Preservation, Open Space, Housing, Air Quality, Mobility, Land Use, Seismic Safety, Noise, Public Safety, Conservation, Scenic Routes, and Mobility Elements. The Mobility Element is the most recent General Plan element to be adopted, as part of the City's larger effort to update older elements of its General Plan.

Land Use Element. The City originally adopted its existing General Plan LUE on July 1, 1989, and subsequently revised the LUE on March 1, 1990, and again in April 1997. This plan formulated the following broad-range goals guiding Land Use in the City: manage growth, encourage economic development, revitalize the Downtown area, allow for the construction of new housing, encourage the development of affordable housing, emphasize strong neighborhoods, maintain existing public facilities, and maintain and/or improve the circulation system.

As part of the LUE, the City designated land uses in the City on a parcel-by-parcel basis using one of 13 land use districts established in the LUE. These land use districts include the following: (1) Single-Family District, (2) Mixed Style Homes District, (3A) Townhomes, (3B) Moderate Density Residential District, (4) High Density Residential District, (5) Urban High Density Residential District, (6) High-Rise Residential District, (7) Mixed Use District, (8) Major Commercial Corridor, (8A) Traditional Retail Strip Commercial, (8P) Pedestrian-Oriented Retail Strip, (8R) Mixed Retail-Residential Strip, (8M) Mixed Office/Residential Strip, (8N) Shopping Nodes,(9R) Restricted Industry, (9G) General Industry, (10) Institutional and School District, (11) Open Space and Park District, (12) Harbor/Airport District, and (13) Rights-of-Way. As illustrated by Figure 3.2, General Plan Land Use Designations (refer to Chapter 3.0, Project Description), the primary land use designations in the City include residential, industrial, and commercial uses.

The project is proposing to update and replace its existing General Plan LUE with a new LUE. As part of this update, the proposed LUE would adopt "PlaceTypes" in place of the existing parcel-by-parcel land use designations outlined in the 1989 LUE. This approach would differ from the existing land use designations in that it would deemphasize specific land use designations by creating PlaceType districts. These PlaceTypes would also differ from the existing traditional approach, which segregates land use types, by allowing for greater land use flexibility focused on mixed-use development. The proposed PlaceTypes would be centered on permitted land uses and preferred development patterns, streetscapes, and urban form features. The proposed LUE would also regulate maximum development standards by establishing allowable densities within each PlaceType.

In addition to the General Plan Land Use Element, the City's Local Coastal Program regulates land use and development within the City's Coastal Zone, as discussed further below.

Scenic Routes Element. In 1975 the City adopted the SRE, which addresses selective and protective criteria and standards for the designation of scenic corridors within the City. The Scenic Routes Element also contains specific urban design criteria and standards that support the regulation of structures, signage, utility lines, landscaping, view corridors, street furniture, and other visual elements within scenic corridors. It is the overall intent of the SRE to enhance and protect the urban setting of the City through aesthetic improvements to scenic routes and corridors in the City.

In addition to updating and replacing the existing 1989 LUE with a new LUE, the project also proposes to replace the existing 1975 SRE with the proposed UDE. In addition to updating the

scenic routes established in the existing SRE, this element would establish iconic sites and viewsheds within the City and outline goals, policies, and implementation strategies aimed at guiding the aesthetic character of the City.

Local Coastal Program. The City of Long Beach became the first City in California to adopt a LCP when the CCC certified its LCP on July 22, 1980. The LCP is the primary planning tool used to guide land use and development within the City's Coastal Zone, which encompasses approximately 3,100 acres along the coastline (refer to Figure 4.4.3, Local Coastal Zone). Within the Coastal Zone, the City's LCP outlines goals and policies to protect and enhance coastal resources. Specifically, these goals and policies are aimed at maximizing public access to the coast, protecting low-cost housing and recreational facilities, and increasing recreational boating and other uses of coastal waters.

The LCP is distinct from the City's General Plan and Zoning Code as it establishes both land use and zoning regulations that support its implementation for new development within the Coastal Zone. Therefore, the City's General Plan must be consistent with the LCP. However, it is important to note that because the City's LCP was adopted 35 years ago, there have been several amendments to the LCP to ensure its consistency with the current Long Beach General Plan. Because the proposed project would facilitate land use changes within the Coastal Zone, further updates/amendments to the City's LCP would be required.

Specific Plans. In addition to the existing General Plan land use designations and zoning districts, the City has also adopted several Specific Plans that serve as the presiding regulatory documents guiding land use within specific areas of the City. These specific plans include the SEADIP, the Downtown Plan, the Midtown Specific Plan, and the Long Beach Boulevard Plan. While the proposed project would facilitate City-wide land use changes, the project would allow for existing Specific Plans to continue regulating land use and planning within areas designated as such in the City.

SEADIP. The SEADIP area encompasses approximately 1,500 acres of land in the southeast area of the City of Long Beach and is generally bounded by Seventh Street, Marine Stadium, and the Orange County border. The existing SEADIP area is developed with a variety of land uses, including the Los Cerritos Wetlands, neighborhood shopping centers, industrial uses, and residential neighborhoods.

The original SEADIP Planned Development District (PD-1) was created in 1977 and subsequently revised on several occasions. The City is currently engaged in a planning effort to comprehensively update the SEADIP Specific Plan. As part of this land use plan, the City envisions developing site-specific land use, design, transportation, resource conservation, and infrastructure policies and regulations to guide future development within the SEADIP area. Due to the site's location within the Coastal Zone, the City is also engaged in the process of updating the City's LCP to ensure consistency between the updated SEADIP Specific Plan and the LCP.

Downtown Plan. The Downtown area in the City of Long Beach is situated in the southern portion of the City in between the Port of Long Beach and Alamitos Beach. The City's Downtown Plan was adopted in 2012 as result of a 6-year effort to update the previous Downtown Plan (PD-30). The Downtown Plan establishes zoning, development standards, and design guidelines for the Downtown area. Implementation of the Downtown Plan would allow for approximately 5,000 new residential units; 1.5 million square feet (sf) of new office, civic, cultural, and similar uses; 384,000 square feet of new retail uses; 96,000 sf of restaurant uses; and 800 new hotel rooms over a 25-year timeline. Overall, the Downtown Plan is an area-wide plan adopted by the City to direct future development within the Downtown area of the City.

Midtown Specific Plan. The Midtown Specific Plan consists of a 353-acre site generally bounded by Spring Street to the north, Atlantic Avenue to the east, Anaheim Street to the south, and Pacific Avenue to the west. The City will consider adoption of the Midtown Specific Plan in 2016 for the purpose of regulating land use within PD-29. PD-29 encompasses the following four development districts: Transit Node, Corridor, Medical, and Open Space. Each of these four districts has its own set of development standards and land use plans. Altogether, the Midtown Specific Plan allows for the development of 3,600 homes and 2.8 million sf and could support up to 15,000 jobs.

Port Master Plan. The PMP is the principal planning and land use plan that identifies planning policies aimed at guiding the physical development of tide and submerged lands conveyed and granted in trust to the Port of Long Beach. The PMP is used as a reference indicating needed policy changes as a guide for policy decisions; as a basis for capital improvements programming and for rendering services; by other governmental agencies as necessary guidance leading to coordinated efforts; and to individuals as an accurate source of information, an indication of new opportunities for private action and investment, and a basis for protecting existing development. The PMP covers an area of approximately 2,700 acres of land and over 4,500 acres of water. The PMP divides the Port of Long Beach area into 11 distinct planning districts, each with its own allowable land and water uses. While the CCC first certified the PMP in 1978, the last update to the PMP occurred in April 2003.

City of Long Beach Zoning Code. Zoning is the division of a city or county into districts and the application of development regulations specific to each district. The City of Long Beach Zoning Code, Title 21 of the Municipal Code, includes regulations concerning where and under what conditions a business may operate in the City. It also establishes zone-specific height limits, setback requirements, parking ratios, and other development standards, for residential and commercial sites.

The Zoning Code is a primary tool for implementing the City's General Plan. It is the intent of the City that the General Plan LUE and the Zoning Code are consistent to ensure that goals and policies outlined in the General Plan and development standards outlined in the Zoning Code are implemented in a manner that is identifiable with the City's overall vision for the City. As

illustrated by Figure 4.4.2, Zoning Districts, the primary existing zoning districts in the City include residential, commercial, and industrial uses.

In addition to establishing zoning districts, the City's Zoning Code also defines 32 Planned Development Districts throughout the City (refer to Figure 4.4.4**,** Planned Development Districts). All of these Planned Development Districts are more comprehensive than traditional zoning districts and are intended to allow for increased flexibility for development within these areas.

The proposed project includes an update to the existing General Plan LUE and corresponding Land Use Map. As such, following approval of the proposed project, the City's existing Zoning Code and Zoning Map would also be updated to ensure consistency with the General Plan. While PlaceTypes included as part of the project would be inconsistent with some current zoning districts and regulations outlined in the City's existing Zoning Code and corresponding Zoning Map (see Figure 4.4.2, Zoning Districts), the project includes Project Design Feature 4.4.1 to address such inconsistencies. Specifically, Project Design Feature 4.4.1 requires the City to: (1) evaluate and map zoning inconsistencies and prioritize areas needing intervention within the first 12 months of project approval, (2) begin processing zone changes and zone text amendments within the first 24 months of project approval, (3) begin drafting new zones or begin preparation of a comprehensive Zoning Code update to reflect the PlaceTypes adopted in the LUE within the first 36 months of project approval, and (4) complete the resolution of all zoning inconsistencies by the end of the fifth year following project approval.

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

The following proposed strategies, policies, and implementation measures are applicable to the analysis of Land Use and Planning:

Land Use Element

Strategy No. 1: Support sustainable urban development patterns.

- **LU Policy 1-1:** Promote sustainable development patterns and development intensities that use land efficiently and accommodate and encourage walking.
- **LU Policy 1-2:** Support high-density residential, mixed-use and transit-oriented development within the downtown, along transit corridors, near transit stations and at neighborhood hubs.
- **LU Policy 1-3:** Require sustainable design strategies to be integrated into public and private development projects.
- **LU Policy 1-5:** Encourage resources and processes that support sustainable development for adaptive reuse projects, as well as appropriate infill projects.

Strategy No. 3: Maintain a strong, diversified economic base that creates jobs and attracts employers.

- **LU Policy 3-1:** Implement land use regulations and economic development strategies that will help diversify the local economy and expand job growth. Accommodate a mix of industries in Long Beach, including high technology, telecommunications, aerospace, green technology, renewable energy, healthcare, higher education, manufacturing, port and shipping, professional services, restaurants, entertainment, and the film industry.
- **LU Policy 3-3:** Promote the Neo-Industrial PlaceType to nurture creative class businesses and artists, including clean light industrial, artist galleries, studios, and limited live-work units.
- **LU Policy 3-4:** Promote and attract a mix of commercial and industrial uses by emphasizing the flexibility of the PlaceTypes designations.

Strategy No. 5: Create and maintain safe, accessible and sustainable employment and higher education centers.

- **LU Policy 5-2:** Connect employment and higher education centers to other activity centers and adjacent neighborhoods via walking, biking, and transit routes.

Strategy No. 6: Implement the major areas of change identified in this Land Use Plan (Map LU-19).

- **LU Policy 6-2:** Convert outdated and underutilized manufacturing and industrial sites to Neo-Industrial uses, particularly those adjacent to residential areas.
- **LU Policy 6-4:** Encourage degraded and abandoned buildings and properties to transition to more productive uses through adaptive reuse or new development.
- **LU Policy 6-5:** Provide incentives for outdated and underperforming industrial areas to transition to commercial uses consistent with the PlaceTypes Map.
- **LU Policy 6-6:** Promote transit-oriented development around passenger rail stations and along major transit corridors.
- **LU Policy 6-7:** Continue to develop the downtown into a city center that provides compact development, accommodates new growth, creates a walkable urban environment, allows for diversified businesses and is easily accessible to surrounding neighborhoods and regional facilities.
- **LU Policy 6-8:** Ensure infill development is compatible with surrounding established and planned uses.
- **LU Policy 6-9:** Focus infill development in the downtown, Multi-Family residential neighborhoods and transit-oriented development areas, and along specific corridors.
- **LU Policy 6-10:** Maintain consistency between the Land Use Element PlaceTypes and the updated Zoning Districts.
- **LU Policy 6-11:** Support infill and transit-oriented development projects by utilizing available tools, such as public-private partnerships and assistance with land assembly and consolidation.
- **LU Policy 6-12:** Develop and implement a plan for SEADIP that establishes the area as an important gateway, builds on residential neighborhoods that are complemented by businesses and commercial services, protects wetlands and local coastal habitat and creates attractive streetscapes with buildings designed at appropriate scale and form.

Strategy No. 7: Enhance and improve the waterfront areas.

- **LU Policy 7-1:** Work with the community to develop a plan that reinvigorates the area around the Belmont Pool complex, Belmont Veterans Memorial Pier and vicinity. Provide new connectivity to adjoining neighborhoods and increase visitor-serving amenities.

Strategy No. 8: Protect and enhance established neighborhoods.

- **LU Policy 8-1:** Protect neighborhoods from the encroachment of incompatible activities or land uses that may have negative impacts on residential living environments.

Strategy No. 13: Promote the equitable distribution of services, amenities and investments throughout the City.

- **LU Policy 13-2:** Promote land use policies and economic development strategies that embraces the diverse population of Long Beach.
- **LU Policy 13-3:** Avoid concentrating undesirable uses, service facilities and infrastructure projects in any manner that results in an inequitable environmental burden on low-income or minority neighborhoods.

Strategy No. 15: Protect neighborhoods from adverse environmental conditions.

Strategy No. 17: Increase open space in urban areas.

Strategy No. 19: Preserve, restore, and protect water bodies, natural areas, and wildlife habitats.

- **LU Policy 19-1:** Identify, acquire, and protect open spaces, sensitive biological resources, native habitat and vegetative communities that support wildlife species and add ecological value to the entire open space system.
- **LU Policy 19-2:** Protect and preserve the marine ecosystem functions and biological marine resources.
- **LU Policy 19-4:** Restore Long Beach's remaining wetlands, lagoons, and other natural marine areas to improve water quality, re-establish native riparian plant and wildlife habitat and reconnect tidal flow.
- **LU Policy 19-5:** Prevent stormwater runoff and pollutants from entering natural water bodies, wildlife habitats, wetlands, rivers and the Pacific Ocean.

Citywide Implementation Strategies

- **LU-M-1:** Update the Zoning Regulations and Zoning Districts Map to include new zoning districts and development standards that are consistent with the PlaceTypes, goals, strategies, and policies outlined in this Land Use Element.
- **LU-M-2:** Update the Zoning Regulations to include urban form standards that address the interface with street frontage, appropriate massing, and compatibility standards based on context

and location. Ensure the regulations allow a mix of uses and accommodate transit, walking, and biking facilities.

- **LU-M-3:** Consider including development incentives in the Zoning Regulations that allow greater development flexibility if projects include affordable housing, creative open space, cultural amenities, historic preservation, or green building elements beyond those required, renewable energy components, and transit, pedestrian, and bicycle amenities.
- **LU-M-4:** Re-invent commercial corridors by creating compact, mixed-use land use patterns and making streets safer for pedestrians, bicyclists, and transit users.
- **LU-M-6:** Continue to implement the Downtown Plan to promote the development of a compact downtown core.
- **LU-M-7:** Continue to create and update master plans for large employment and higher education centers, including the Port of Long Beach Master Plan, Golden Shore Master Plan, California State University at Long Beach Campus Master Plan, Long Beach City College 2020 Unified Master Plan, and the Long Beach Memorial Medical Center 2005 Master Plan of Land Uses.
- **LU-M-21:** Implement major change areas identified in the Land Use Plan and Map LU-19.
- **LU-M-22:** Amend the Zoning Regulations to include flexible standards targeted for infill development. These standards should address compatibility, appropriate and flexible parking requirements, public improvements, traffic levels of service, transit access, bicycle and multi-modal facilities, and off-site improvements (including alleys, roadways, and sidewalks).
- **LU-M-23:** Amend Title 21 of the Municipal Code to create new PlaceType districts that allow higher density development and new infill opportunities.
- **LU-M-32:** Amend Title 21 of the Municipal Code to include compatibility development standards and urban form strategies that protect low-density development from higher density/ intensity developments. Measures may include stepping down building height, reducing building mass, decreasing the number of stories and window placement, among others.
- **LU-M-71:** Increase the diversity of urban recreational spaces to include pocket parks, infill parks, community gardens, small green spaces, rooftop gardens, urban agriculture and gardening spaces, paseos, linear parks, small play fields and courts, playgrounds, urban trails and similar urban open spaces.
- **LU-M-72:** Focus on locating new parks and open spaces in residual and innovative areas such as remnant freeway rights-of-way, abandoned railway lines, utility corridors, riverfronts and waterfronts, vacant lots, underutilized or irregular parcels and rooftops.
- **LU-M-78:** Reuse vacant properties as community amenities such as gardens, parks or temporary green spaces to reduce blight and safety issues, increase residents' access to needed parks and open spaces, and spur additional investment in neighborhoods.
- **LU-M-79:** Leverage public and private dollars to implement habitat and wetland restoration projects in the community. Develop new and enhance existing marine life habitats.
- **LU-M-80:** Consult with non-profit organizations, regional agencies and property owners to develop programs and mechanisms to acquire and restore lands.

- **LU-M-81:** Develop feasibility plans that identify approaches and financial opportunities to protect and restore the City's urban creek system, storm channels, river channels, wetlands and habitat areas.
- **LU-M-82:** Implement the Low Impact Development (LID) Best Management Practices (BMP) Design Manual for all new qualified development projects. Require innovative measures and technologies to reduce urban runoff and improve water quality.
- **LU-M-83:** Consult with agencies, cities and jurisdictions in the Los Angeles and San Gabriel Rivers watersheds to implement stormwater best management practices to reduce urban runoff pollutants.
- **LU-M-84:** Require that streets, large parking lots and other expansive asphalt areas be designed to direct rainwater runoff to landscaped areas or cisterns. Where appropriate, replace impervious surfaces (e.g., sidewalks, driveways, outdoor patios, and parking lots) with permeable materials.
- **LU-M-85:** Identify sites and preserve significant areas that contribute to the infiltration of water into the local groundwater basin.

Urban Design Element

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

- **Policy UD 1-1:** Support the goals, strategies, and policies of the General Plan Elements.
- **Policy UD 1-2:** Focus development and supporting infrastructure improvements within targeted Areas of Change identified within Land Use Element.
- **Policy UD 1-3:** Promote the adaptive reuse and appropriate infill of resources within the existing urban fabric.
- **Policy UD 1-4:** Focus on building flexible design on ground floors to allow for active building frontages along corridors and at the street level.

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

- **Policy UD 15-2:** Promote infill projects that support the designated PlaceType and be appropriate in their use, scale, compactness of development, and design character with adjacent sites and nearby existing development.

Strategy No. 16: "Complete the neighborhood" by filling in gaps (e.g., functional needs like housing, new or missing services, new public amenities or services, healthy food options, flexible uses on larger streets and fostering a safe walkable environment within each PlaceType.).

- **Policy UD 16-1:** Provide opportunities for mixed use development within focused locations (areas of change and target areas) to provide opportunities for live-work, affordable and mixed-income housing, and commercial and residential mixes in a medium to high density setting.

Strategy No. 17: Define boundaries between natural areas, parks, and built areas.

- **Policy UD 17-1:** Restrict development from encroaching into natural areas to protect viewsheds and access to public space.
- **Policy UD 17-3:** Establish appropriate buffers between natural resources and the built environment.

Strategy No. 19: Protect and enhance established Founding and Contemporary Neighborhood PlaceType.

- **Policy UD 19-1:** Encourage new construction, additions, renovations, and infill development to be sensitive to established neighborhood context, historic development patterns, and building form and scale.
- **Policy UD 19-2:** Ensure that project site design and function minimizes the potential adverse impacts of vehicle access, parking and loading facilities, signage, lighting, trash enclosures, and sound systems.
- **Policy UD 19-3:** Support new development that is designed to respect the height, massing, and open space characteristics of the existing neighborhood while creating the appearance of single-family units for multifamily buildings to allow for better integration.

Strategy No.20: Protect and enhance established Multi- Family Residential - Low and Moderate PlaceTypes.

Strategy No. 21: Protect and enhance established Neighborhood-Serving Centers and Corridors-Low and Moderate PlaceType.

Strategy No. 22: Protect and enhance established Transit-Oriented Development–Low and Moderate PlaceType.

- **Policy UD 22-3:** Provide a mix of uses either within a single development or within a 1/4–mile radius of the PlaceType area, and centered around a transit station. The highest density of development should occur nearest the station.

Strategy No. 23: Protect and enhance established Community Commercial PlaceType.

- **Policy UD 23-2:** Develop single-family attached units or multifamily residential uses as a transition in scale between the automobile-oriented corridor and the adjacent neighborhood.

Strategy No. 24: Protect and enhance established Industrial PlaceTypes.

- **Policy UD 24-4:** Utilize sites away from neighborhoods for more intense industrial uses.
- **Policy UD 24-5:** Encourage incompatible land uses and operations to be located away from and screened from view of residential neighborhoods.
- **Policy UD 24-7:** Establish parkways, planted medians, and street trees along the sidewalk to increase permeable surface areas.
- **Policy UD 24-8:** Convert single-family homes that are immediately next to industrial uses into linear parks to buffer other homes and to serve as open space.

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

- **Policy UD 25-1:** Develop the Neo-Industrial PlaceType as a buffer between existing industrial and residential neighborhoods.
- **Policy UD 25-5:** Encourage Neo-Industrial PlaceTypes to have improved walkability with on-site, sidewalk and streetscape landscaping, signage, and other enhancements.
- **Policy UD 25-7:** Convert and reuse existing buildings for creative commercial or office use, as well as spaces for artists to live, work, and display their work on-site.

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

- **Policy UD 26-1:** Enhance the edges, both within and adjacent to, the regional serving facility to avoid abrupt transitions between large institutional facilities and their neighbors.
- **Policy UD 26-2:** Encourage separation of incompatible land uses with site planning strategies and appropriate design treatments.

Strategy No. 27: Protect and enhance established Downtown PlaceType.

- **Policy UD 27-1**: Promote the importance of the transitions between uses and developments in the Downtown PlaceType, given the small block sizes and mix of different uses.
- **Policy UD 27-2:** Apply the development standards and guidelines prescribed in the Downtown Plan.

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

- **Policy UD 28-1:** Improve public access to the marinas and waterfront.
- **Policy UD 28-2:** Encourage mixed uses and greater building intensity to be located nearest the center within this PlaceType, with housing and/or lower-scale buildings on the periphery.
- **Policy UD 28-4:** Develop attractive gateway elements to invite visitors in to explore the unique offerings found in each of these Waterfront PlaceTypes.
- **Policy UD 28-12:** Encourage oil well consolidation in SEADIP area to encourage wetlands restoration.

Strategy No. 29: Restore and protect Long Beach's natural features, which include: the Pacific Ocean, beaches, bluffs, San Gabriel and Los Angeles Rivers, ranchos and adjacent land, Dominguez Gap, the Los Cerritos Wetlands, and waters in Alamitos Bay.

- **Policy UD 29-1:** Provide leadership and work with the community to restore and rehabilitate habitats and lands along the San Gabriel River and Los Angeles River, the Los Cerritos Wetlands, Colorado Lagoon, and the Alamitos Bay.

Strategy No. 30: Provide greater access to the open space network to promote pedestrian and bicycle activity, to support the health and well-being of residents, and to increase opportunities for recreation.

- **Policy UD 30-1:** Preserve and enhance access to existing open space through improvements to existing facilities and wayfinding programs for new and existing open spaces.
- **Policy UD 30-2:** Seek opportunities to provide new publicly accessible open spaces and linkages to the greater open space network within residential projects.
- **Policy UD 30-3:** Look for opportunities on underutilized streets to repurpose where unused roadway can become open space (i.e., an enlarged parkway, greening unpaved alleys, linear or pocket park).
- **Policy UD 30-4:** Encourage projects to integrate required open space with a beneficial relationship to the public realm (e.g., connecting a paseo to the sidewalk, providing a layered landscape design and private patios along the sidewalk, connecting an internal courtyard visually or physically to the sidewalk).

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

- **Policy UD 31-1:** Enhance the open space network around neighborhood centers by providing paseos, entry forecourts, courtyards, plazas, larger parkways, and landscaped setbacks.
- **Policy UD 31-2:** Create a network of public spaces and plazas that link pedestrian priority areas identified in the Mobility Element.

Strategy No. 33: Create parks and plazas at infill sites.

4.4.6 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Thresholds of Significance.* Based on these thresholds, implementation of the proposed project would have a significant adverse impact related to land use and planning if it would:

Threshold 4.4.1: Physically divide an established community;

Threshold 4.4.2: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the General Plan, Specific Plan, Local Coastal Program, or Zoning Ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or

Threshold 4.4.3: Conflict with any applicable habitat conservation plan (HCP) or natural community conservation plan (NCCP).

Approval of the proposed project is considered a policy/panning action for the entire City and does not include any physical improvements. Therefore, the Initial Study/Notice of Preparation (IS/NOP) (Appendix A) determined that the proposed project would result in less than significant impacts related to the potential physical division of an established community (Threshold 4.4.1). Additionally, the IS/NOP determined that because there is no HCP, NCCP, or other local or regional conservation plan in the City, the proposed project would not result in any conflicts with an applicable HCP or NCCP (Threshold 4.4.3). As a result, these thresholds are not analyzed further in this Draft EIR.

4.4.7 Standard Conditions and Project Design Features

The proposed project would not be required to adhere to any standard conditions related to land use and planning, but would incorporate Project Design Feature 4.4.1 to reduce potential zoning inconsistencies.

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

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

4.4.8 Project Impacts

Threshold 4.4.2: **Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the General Plan, Specific Plan, Local Coastal Program, or Zoning Ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.**

Less than Significant Impact. The proposed LUE and UDE are intended to shape future development in the City through the year 2040. Buildout consistent with the proposed project would allow for an increase of 11,744 households, 51,230 people, and 28,511 employment opportunities.

Changes in build-out capacity facilitated by project approval would primarily occur as a result of the new approach to land use (i.e., PlaceTypes) as compared to the existing parcel-by-parcel land use designations in the current LUE. The existing seven residential land use categories would be replaced by three new PlaceTypes: Founding and Contemporary Neighborhood, Multi-Family Residential-Low, and Multi-Family Residential-Moderate. The current Mixed Use Designation would be split into two new PlaceTypes: Neighborhood-Serving Center or Corridor and Transit-Oriented Development. The current six commercial land use designations would be replaced and would either be allowed under the aforementioned two mixed-use PlaceTypes or would be allowed within the proposed Community Commercial PlaceType. The existing Restricted Industry and General Industry land use designations would be replaced with the Neo-Industrial and Industrial PlaceTypes, respectively. The Open Space/Parks and Right-of-Way land use designations would be replaced with the Open Space PlaceType. Similarly, the Harbor/Airport land use designation would be replaced with the Regional-Serving Facility PlaceType. The Institutional/Schools land use designation would be allowed within several of the aforementioned PlaceTypes, such as the Founding and Contemporary Neighborhood (Low and Moderate), Multi-Family Residential (Low and Moderate), and Regional-Serving PlaceTypes. The proposed LUE would also include the addition of the Downtown and Waterfront PlaceTypes. For further detail regarding the proposed PlaceTypes, refer to Chapter 3.0, Project Description, of this Draft EIR.

California Coastal Act. As previously identified, the southern area of the City is located within the Coastal Zone, which is regulated by the CCC under the CCA. While the proposed project would not include any physical improvements within the Coastal Zone that would require CDPs from the CCC, the proposed project would require an update to the City's existing LCP that would require approval from the CCC.

Land Use Element. As proposed as part of the project, the City would update its General Plan LUE and associated Land Use Map with the proposed PlaceTypes Map, which would include changes to areas within the Coastal Zone (refer to Figure 4.4.3). As illustrated by Figures 3.2, Existing Land Uses, and Figure 3.3, Proposed PlaceTypes, the proposed LUE would allow for the Open Space, Multi-Family Residential-Low, Neighborhoods, and Neighborhood-Serving Center or Corridor-Low PlaceTypes within the Coastal Zone (refer to Chapter 3.0, Project Description, for figures). The establishment of these PlaceTypes within the Coastal Zone would allow for existing neighborhoods and open space areas to largely remain in their existing condition while also allowing for low-density residential and commercial development to accommodate the City's projected growth in population.

While the proposed LUE would include updates to existing land uses in this area by redesignating several areas within the Coastal Zone, the primary changes within the Coastal Zone would occur within the proposed Waterfront PlaceType. The Waterfront PlaceType encompasses the Downtown South Shore, Alamitos Beach, Belmont Pool and Pier, and the Alamitos Bay Marina areas. This PlaceType would aim to provide an increase of mixed uses and greater building intensities near the proposed Downtown area and lower-density uses adjacent to the shoreline and on the City's periphery.

While the Waterfront PlaceType would allow for existing development standards for the South Shore, Downtown, and Alamitos Beach areas to regulate land use within these areas, the LUE would propose changes primarily within the Belmont Pier and Pool Complex and the Alamitos Bay Marina areas. As part of the proposed LUE, allowable land uses within the Belmont Pier and Pool Complex would be updated to allow for additional visitor-serving uses and improved recreational opportunities for residents and visitors to the area. In addition, the proposed LUE would encourage improvements to the pedestrian and bicycle circulation network within the Alamitos Bay Marina.

Urban Design Element. As proposed as part of the UDE, waterfront areas within the Coastal Zone would be targeted for increased pedestrian and bicycle accessibility and for increased preservation of existing natural resources. Specifically, the proposed UDE would aim to protect and enhance natural resources within the Coastal Zone, improve public access to the coast, promote pedestrian- and bicycle-oriented development, promote clear signage, and encourage wetlands restoration.

According to the CCA, Chapter 3 of the CCA is to be utilized by the CCC when reviewing coastal development permits and LCPs. As such, a consistency analysis with applicable standards and policies included in Chapter 3 of the CCA has been provided to demonstrate the project's consistency with Chapter 3 of the CCA; see Table 4.4.A, below.

General Plan Consistency. The proposed project is requesting to update and replace the existing LUE with an updated LUE and to replace the existing SRE with the proposed UDE. Approval of the proposed project would ensure that the proposed LUE would serve as the guiding land use policy document for future development in the City. As part of the proposed LUE, the following 14 PlaceTypes would replace the existing land use designations: (1) Open Space, (2) Founding and Contemporary Neighborhood, (3) Multi-Family-Low, (4) Multi-Family-Moderate (5) Neighborhood-Serving Centers and Corridors-Low, (6) Neighborhood-Serving Centers and Corridors- Moderate, (7) Transit-Oriented Development-Low, (8) Transit-Oriented Development-Moderate, (9) Community Commercial, (10) Industrial, (11) Neo-Industrial, (12) Regional-Serving Facility, (13) Downtown, and (14) Waterfront.

Although the proposed uses are currently inconsistent with the existing General Plan land use designations, approval of the proposed project would result in the project being consistent with the General Plan and would ensure the proposed LUE would be the presiding policy document guiding land use in the City. Furthermore, the proposed project would be consistent with California Government Code Section 65302 as it addresses one of the seven required elements (Land Use) and proposes to adopt an additional optional element (Urban Design) in the City's General Plan. The project would revise and replace the General Plan Land Use Map with the proposed PlaceTypes map. The proposed LUE and UDE, together with the other General Plan Elements, would serve to guide the overall physical development and urban form of the entire City through the year 2040.

Table 4.4.A: California Coastal Act Consistency Analysis

Plan Policy or Goal	Project Consistency
California Coastal Act	
Chapter 3. "The California Coastal Act of 1976 (CCA) was created to: (1) Protect, maintain, and, where feasible, enhance and restore the overall quality of the Coastal Zone environment and its natural and manmade resources; (2) Ensure orderly, balanced utilization, and conservation of Coastal Zone resources, taking into account social and economic needs; (3) Maximize public access to and along the coast and maximize public recreational opportunities in the Coastal Zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners; and (4) Ensure priority for coastal-dependent development over other development on the coast."	**Consistent.** The proposed project would aim to protect, maintain, and enhance the overall quality of the Coastal Zone by allowing for an orderly balance between new development and existing uses by preserving existing natural resources (i.e., wetlands) within the Coastal Zone. For example, Strategy No. 19 in the LUE aims to protect and preserve water bodies, LU Policy 19-1 through LU 19-5 aims to protect and preserve marine resources and the coastal environment. Additionally, Policy UD 17-3 calls for the establishment of buffers between natural resources and the built environment to reduce impacts to natural resources, such as those resources found within the Coastal Zone. Further, Strategy No. 29 and Policy UD 29-1 call for the protection of the City's natural resources, including the Pacific Ocean and its associated tributaries. The proposed project would maintain public access by promoting improvements to existing and new pedestrian and bicycle pathways leading to the coast. For example, the proposed UDE includes Policy UD 28-1 which encourages the City to, "improve public access to the marinas and waterfront." The UDE also includes Policy UD 28-2, which encourages lower density development close to waterfront areas so as to minimize impacts associated with new development adjacent to the coastline. The proposed project is considered a policy/planning action and does not include any physical developments. Therefore, the proposed project would not include any coastal-dependent or other development along the coast, but rather would facilitate future development, including coastal-dependent and water-related uses (e.g., restaurants, museums, resorts, mixed-use projects, and Port facilities) through the approval of a new land use document.
Section 30211: Development not to interfere with access. "Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation."	**Consistent.** The proposed project would maintain existing public accessways and would promote new pedestrian and bicycle pathways to the coast (Policy UD 28-1). The proposed project would also encourage pedestrian-oriented and transit-oriented development within the Coastal Zone to encourage public access to the coast. Therefore, the proposed project would encourage, not interfere with, the public's right of access to the sea.

Table 4.4.A: California Coastal Act Consistency Analysis

Plan Policy or Goal	Project Consistency
Section 30213: Lower cost visitor and recreational facilities; encouragement and provision; overnight room rentals. "Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred."	**Consistent.** The proposed project would promote the preservation of existing recreational facilities (Policy UD 30-1) and would seek to provide additional opportunities for recreation throughout the City (LU-M-69). For example, within the proposed Waterfront PlaceType, the proposed project would allow for planned improvements to the public Belmont Pool and Pier area. The proposed project would also promote the creation of new pedestrian and bicycle pathways to the coast within the Waterfront PlaceType. Furthermore, the proposed project would establish the Open Space PlaceType within the Coastal Zone to encourage the preservation of existing open space and recreational facilities, such as passive parks, viewing areas, and public launch facilities along the coastline. The proposed project would also provide for adequate parking facilities to further enhance public accessibility to the coast. Therefore, the proposed project would preserve existing and provide for new and existing low-cost visitor and recreational facilities.
Section 30221: Oceanfront land; protection for recreational use and development. "Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area."	**Consistent.** As illustrated by Figure 3.3, Proposed PlaceTypes (refer to Chapter 3.0, Project Description), the proposed project would primarily allow for the Open Space and Waterfront PlaceTypes adjacent to oceanfront land in the City. Within these PlaceTypes, existing uses and future recreational facilities would be maintained and encouraged, consistent with the intent of Policies LU 18-1 and UD 30-1. While the proposed project is considered a policy/planning action and does not include any development activities, future development within the Waterfront PlaceType would be encouraged where such development would be compatible with existing uses and natural resources. Therefore, the proposed project would maintain existing recreational facilities in oceanfront areas, retain beaches and opportunities for ocean viewing from piers and walkways, and encourage development in areas that could accommodate such uses.
Section 30230: Marine Resources; Maintenance. "Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal water and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes."	**Consistent.** The proposed project would establish the Waterfront and Open Space PlaceTypes that would serve to protect existing biological marine resources within the Coastal Zone. For example, LU Policy 19-2 in the proposed LUE specifies that it is the City's goal to protect and preserve the marine ecosystem and biological marine species. The proposed LUE also aims to restore damaged waterbodies and natural area (LU Policy 19-3) and restore the City's wetlands and other natural marine areas (LU Policy 19-4). Therefore, the proposed project would serve to maintain, enhance, and restore marine

Table 4.4.A: California Coastal Act Consistency Analysis

Plan Policy or Goal	Project Consistency
	species within the Coastal Zone.
Section 30231: Biological Productivity; Water Quality. "The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of wastewater discharges and entrainment, controlling runoff, preventing depletion of groundwater supplies and substantial interference with surface water flow, encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams."	**Consistent.** The proposed project would establish several goals and policies aimed at preserving the biological productivity and quality of coastal waters and wetlands. Specifically, LU-M-82 and LU-83 of the proposed LUE aim to reduce urban runoff and improve water quality through the implementation of Best Management Practices (BMPs) and consultation with applicable agencies governing watersheds in the City of Long Beach. Additionally, LU Strategy 19 and Policies 19-1 through 19-5 would further serve to reduce impacts to existing marine resources and water quality as these policies aim to preserve, restore, and protect water bodies and natural areas; restore damaged and degraded water bodies and natural areas (including wetlands and lagoons); improve water quality and re-establish native riparian habitat areas; and prevent stormwater runoff and pollutants from entering water bodies. Therefore, the proposed project would maintain and enhance biological productivity and the quality of coastal waters and wetlands.
Section 30240: Environmentally sensitive habitat areas; adjacent developments. "(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade"	**Consistent.** The proposed project would establish several goals and policies aimed at preserving existing natural habitats within the City. For example, LU Policy 6-12 aims to protect wetlands and local coastal habitats through the implementation of appropriately scaled land use patterns in the SEADIP area. Additionally, LU Strategy No. 19 and LU 19-1 Policy through LU Policy 19-5 aim to preserve, restore, and protect natural areas and wildlife habitats in the City. LU-M-79, LU-M-81, and UD Policy 29-1 also aim to preserve existing sensitive habitats through the allocation of monetary funds for the purpose of habitat and wetland restoration; the development of feasibility plans aimed at restoring wetlands and habitat areas; and collaborative efforts with the community to restore and rehabilitate habitats along the San Gabriel and Los Angeles Rivers, the Los Cerritos Wetlands, the Colorado Lagoon, and Alamitos Bay. As such, the proposed project would not result in disruptions to environmentally sensitive habitat areas.
Section 30250: Location; existing developed area. "(a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate	**Consistent.** The proposed project would allow for the Open Space, Multi-Family Residential-Low, Neighborhoods, Waterfront, and Neighborhood-Serving Center and Corridor-Low PlaceTypes within the Coastal Zone. As illustrated by Figure 3.2, Existing Land Uses (refer to Chapter 3.0, Project Description), the establishment of the Multi-Family Residential-Low,

Table 4.4.A: California Coastal Act Consistency Analysis

Plan Policy or Goal	Project Consistency
public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels. (b) Where feasible, new hazardous industrial development shall be located away from existing developed areas. (c) Visitor-serving facilities that cannot feasibly be located in existing developed areas shall be located in existing isolated developments or at selected points of attraction for visitors."	Neighborhoods, and Neighborhood-Serving or Corridor-Low PlaceTypes would allow for existing residential and commercial uses to remain within the Coastal Zone and would facilitate future residential and commercial development that would be compatible with existing uses in this area and where adequate public services are already available. As specified in Policy UD 15-2, the proposed project would encourage infill development within existing developed areas to focus new development that is appropriate in use, scale, compactness, and design with existing development. Further, because the City is almost entirely urbanized, there are no agricultural resources in the City that would be impacted as a result of future development facilitated by project approval. Therefore, new development facilitated by the proposed project would be contiguous with existing developed areas within the Coastal Zone, thereby minimizing impacts to coastal resources. While the proposed LUE would not allow for new industrial activities in the Coastal Zone, the proposed project includes the proposed Neo-Industrial PlaceType that would allow for small-scale industrial and related commercial activities. This PlaceType would serve as a buffer between existing residential and industrial developments, as specified by Policy LU 6-2, as well as Policies UD 24-3, 24-8, and 25-1. Therefore, the proposed project would locate industrial uses away from existing developed areas and would not result in hazardous industrial development in the Coastal Zone. The proposed project would encourage the preservation of existing, and the creation of new, visitor-serving facilities (e.g., hotels, restaurants, recreational facilities, parks, and pedestrian and bicycle pathways) within the Coastal Zone. Therefore, the proposed project would not interfere with existing visitor-serving facilities and rather, would promote the development of new visitor-serving facilities.
Section 30251: Scenic and visual qualities. "The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual	**Consistent.** As described further in Section 4.1, Aesthetics, scenic views afforded to the City within the Coastal Zone include views of the Pacific Ocean, Port of Long Beach, San Gabriel Mountains, Santa Ana Mountains, marinas, and parks. While the proposed project would facilitate future higher-density development, the proposed project would include the establishment of various goals, strategies, policies, and design recommendations that would ensure future

Table 4.4.A: California Coastal Act Consistency Analysis

Plan Policy or Goal	Project Consistency
quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting."	development would be visually compatible with existing development in the Coastal Zone and would protect scenic vistas. For example, Policy UD 17-1 restricts new development from encroaching into natural areas so as to protect viewsheds. The proposed project would also encourage the preservation of natural land areas, thereby minimizing the alteration of natural land forms. Further, as illustrated by Figure 3.3, Proposed PlaceTypes (refer to Chapter 3.0, Project Description), the proposed project would allow for the preservation of existing open space uses along the coastline, which would minimize impacts related to the existing scenic character of the City's coastline. Therefore, the proposed project would minimize impacts to the scenic and visual qualities of coastal areas.
Section 30252: Maintenance and enhancement of public access. "The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads, (3) providing nonautomobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development."	**Consistent.** The proposed project would maintain existing access and provide improved access to the coast by promoting improvements to existing and new pedestrian and bicycle pathways leading to the coast. The proposed project would also promote public access to the coast by encouraging the preservation of existing, and the creation of new, open space and recreational facilities. The proposed UDE also aims to improve public access to the City's marinas and waterfront (Policy UD 28-1). The proposed project would further public access to the coast by promoting alternate modes of transportation and encouraging mixed-use, pedestrian-oriented development (e.g., mixed-use development and the establishment of the Transit-Oriented Development- Low and Moderate PlaceTypes) that would minimize the use of coastal access roads. The proposed project would also promote public access to the coast by encouraging transit-oriented and pedestrian-oriented development adjacent to existing transit stops along Long Beach Boulevard in the Downtown area, directly north of the Coastal Zone. The proposed project would also allow for adequate parking facilities associated with new development within the Waterfront PlaceType. For example, the proposed LUE requires that sufficient shared parking be provided with increased building densities (Policy UD 19-2) and also requires that bicycle racks, storage lockers, and plug-in spaces for electrical vehicles be provided in every parking structure within the Waterfront PlaceType. Furthermore, as illustrated by Figure 3.3, Proposed PlaceTypes (refer to Chapter 3.0, Project Description), the proposed project would allow for the Open Space

Table 4.4.A: California Coastal Act Consistency Analysis

Plan Policy or Goal	Project Consistency
	PlaceType in the Coastal Zone, which would further the City's goal of providing a compatible balance between new development and parks and recreational facilities along the coastline. Therefore, the proposed project would maintain and enhance public access to the coast.
Section 30253: Minimization of adverse impacts. "New development shall do all of the following: (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard. (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. (c) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development. (d) Minimize energy consumption and vehicle miles traveled. (e) Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses."	**Consistent.** The proposed project is considered a policy/planning action and does not include any physical improvements. Consequently, the proposed project would not result in geologic, flood, fire risks nor would the project conflict with requirements imposed by the California Air Resources Board. While the proposed project does not include any physical development within the City, the project does include several goals and policies aimed at reducing automobile reliance within the City to improve the existing circulation system and to minimize energy consumption (LU Policy 1-1 and LU-M-3) and vehicle miles traveled (refer to Sections 4.2, Air Quality, and 4.3, Greenhouse Gas Emissions). Furthermore, future projects facilitated by project approval will be evaluated through environmental review to ensure that new development would not result in risks to life and property in areas of high geologic, flood, and fire hazard. The proposed project would allow for new development within the Coastal Zone while also maintaining the character of existing neighborhoods so as not to detract from the unique characteristics of these communities. Therefore, the proposed project would not result in adverse impacts related to geology, flooding, fire hazards, air pollution, energy consumption/vehicle miles traveled, and the character of existing communities within the Coastal Zone.
Section 30708: Location, Design and Construction of Port-related Developments. "All port-related developments shall be located, designed, and constructed so as to: (a) Minimize substantial adverse environmental impacts. (b) Minimize potential traffic conflicts between vessels. (c) Give highest priority to the use of existing land space within harbors for port purposes, including, but not limited to, navigational facilities, shipping	**Consistent.** The proposed project includes the establishment of the Regional-Serving Facility PlaceType, which includes the Port of Long Beach (among other areas). The proposed project would allow for the current Port of Long Beach Master Plan to continue serving as the guiding land use document for port development and port activities within this area. Therefore, the proposed project would not facilitate any new development within the Port of Long Beach that would result in adverse environmental impacts, vessel conflicts, land use conflicts, biological resources and

Table 4.4.A: California Coastal Act Consistency Analysis

Plan Policy or Goal	Project Consistency
industries, and necessary support and access facilities. (d) Provide for other beneficial uses consistent with the public trust, including, but not limited to, recreation and wildlife habitat uses, to the extent feasible. (e) Encourage rail service to port areas and multicompany use of facilities.'	habitat impacts, or rail service conflicts.

Source: Public Resources Code, Division 20-California Coastal Act (2014); LSA Associates, Inc.
SEADIP = Southeast Area Development and Improvement Plan

The proposed project includes a description of the existing land use setting and urban character of the City; outlines goals, policies, and implementation strategies specific to each PlaceType, and includes a number of diagrams and maps illustrating proposed land use patterns and development standards intended for each PlaceType. The adoption of PlaceTypes in place of land use designations is intended to preserve and ensure land use compatibility throughout the City. Specifically, the goals and policies in the LUE and UDE are intended to preserve existing neighborhoods, accommodate growth and promote mixed-use development in higher-density areas, preserve open space, and promote alternative modes of transportation to reduce automobile reliance throughout the City. These goals and policies, along with the flexibility in land use patterns afforded by the proposed PlaceTypes, would reduce potential conflicts related to incompatible uses, traffic, and noise, and would promote growth in urbanized areas to accommodate future projections in housing, population, and employment in the City.

In addition, the proposed LUE and UDE also include goals, policies, and strategies that would allow the City to implement land use patterns that would be consistent with the Complete Streets Act (Assembly Bill [AB] 1358). Specifically, the LUE and UDE would encourage transit-oriented and mixed-use development through the establishment of the Transit-Oriented Development and Neighborhood-Serving Center or Corridor (Low and Moderate) PlaceTypes to reduce automobile reliance and promote multimodal features. Refer to Section 4.8, Transportation/Traffic, for further discussion related to the project's consistency with AB 1358.

Therefore, with approval of the proposed LUE, no inconsistency with the City's General Plan would occur, and impacts would be considered less than significant.

While the LUE would update existing land use designations in the City, the proposed UDE would not result in any changes to land use designations within the City, but rather would establish goals, policies, and implementation strategies aimed at guiding the desired urban form and character associated with each PlaceType included in the proposed LUE. Therefore, following approval of the proposed UDE, no inconsistency with the City's General Plan would occur, and impacts would be considered less than significant.

The City's General Plan LUE also contains goals and policies aimed at regulating land use and development patterns in the City (see implementation strategies listed above). These goals and

policies would be updated and replaced by the goals, strategies, policies, and implementation strategies outlined in the proposed LUE. Similarly, goals and policies in the SRE would be replaced with goals, strategies, policies, and implementation strategies outlined in the proposed UDE. These goals, strategies, policies, and implementation strategies would be internally consistent between the proposed LUE and UDE, as well as consistent with existing elements of the City's General Plan (including the recently adopted Mobility Element). Therefore, the proposed project would not result in any inconsistencies between the proposed project and the City's General Plan. Impacts would be less than significant, and no mitigation would be required.

City Zoning Code Consistency. The proposed project would allow for increased densities, intensities, and heights throughout the City as compared to the existing General Plan and Zoning Code. However, it should be noted that this allowable increase in future densities, heights, and intensities would be concentrated within the Downtown, Regional Serving (i.e., California State University Long Beach), and the Transit-Oriented Development (Low and Moderate) PlaceTypes and along major corridors and thoroughfares throughout the City. While PlaceTypes included as part of the project would be inconsistent with some current zoning districts and regulations outlined in the City's existing Zoning Code and corresponding Zoning Map (see Figure 4.4.2, Zoning Districts), the project includes Project Design Feature 4.4.1 to address such inconsistencies. Specifically, Project Design Feature 4.4.1 requires the City to: (1) evaluate and map zoning inconsistencies and prioritize areas needing intervention within the first 12 months of project approval, (2) begin processing zone changes and zone text amendments within the first 24 months of project approval, (3) begin drafting new zones or begin preparation of a comprehensive Zoning Code update to reflect the PlaceTypes adopted in the LUE within the first 36 months of project approval, and (4) complete the resolution of all zoning inconsistencies by the end of the fifth year following project approval. Therefore, with incorporation of Project Design Feature 4.4.1, the proposed project would be consistent with the City's Zoning Code and Zoning Map.

Local Coastal Program Consistency. The proposed LUE would redesignate land uses within the City's Coastal Zone with the proposed Downtown, Waterfront, Neighborhood-Serving Center or Corridor (Low and Moderate), Open Space, Founding and Contemporary Neighborhood, and Multi-Family Residential-Moderate PlaceTypes. While the proposed LUE would allow for a variety of PlaceTypes within the City's Coastal Zone, the Belmont Pool and Pier and Alamitos Bay Marina areas are the two primary areas targeted for change, including redevelopment activities and improved bicycle and pedestrian circulation.

Because the proposed project would result in updates to the City's General Plan that would be inconsistent with portions of the City's existing LCP, project implementation could result in potential land use conflicts with the LCP. Therefore, updates/amendments to the City's LCP could be required at the time individual applications for development within the City's Coastal Zone are proposed, if they were determined by the City to be inconsistent with the adopted General Plan LUE. Additionally, as the City updates zoning in a specific area as part of the comprehensive zoning update outlined in Project Design Feature 4.4.1, the City will also update the LCP and

submit to Coastal. Therefore, approval of these future LCP updates and future LCP amendments would reduce potential inconsistencies with the City's LCP to a less than significant level.

While the LUE would update existing land use designations within the City, including areas within the Coastal Zone, the proposed UDE would not result in any changes to land use designations, but would establish goals, policies, and implementation strategies aimed at guiding the desired urban form and character associated with each PlaceType included in the proposed LUE. Therefore, following approval of the proposed UDE, no inconsistency with the City's General Plan would occur, and impacts would be considered less than significant.

SCAG RCP and RTP/SCS Consistency. As described previously, SCAG policies in the RCP and RTP/SCS encourage growth near transit services. The proposed project would establish the Transit-Oriented Development-Low and Moderate PlaceTypes that would promote mixed-use development along Long Beach Boulevard, adjacent to stations along the Metro Blue Line route. Therefore, the proposed project would be consistent with the RTP/SCS goal to encourage land use and growth patterns that facilitate transit and non-motorized travel.

The proposed project would also promote a variety of housing types by allowing for varying building densities within the proposed PlaceTypes. For example, the Founding and Contemporary Neighborhood PlaceType would allow for single-family, low-density housing, and the Multi-Family Low-and Moderate PlaceTypes would allow for duplex, triplex, apartment, and condominium units. Therefore, the proposed project would be consistent with the RCP's goal of providing new housing opportunities, with building types and locations that respond to the region's changing demographics.

The proposed project would also allow for mixed-use development in most of the proposed PlaceTypes and would focus on creating walkable, pedestrian-friendly neighborhoods that would reduce automobile dependence and improve the transportation network. Active transportation is an area of focus in the RTP/SCS. Therefore, the proposed project would be consistent with the RTP/SCS goal to protect the environment and health of its residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking).

Furthermore, the proposed project would promote a diverse economy by allowing for a variety of businesses, such as start-up businesses within the Neo-Industrial PlaceType, and would preserve the existing natural environment through the establishment of the Open Space PlaceType. The proposed project would also establish the Regional-Serving Facilities PlaceType, which would allow for the continued operation of existing regional-serving facilities in the City, such as the Port of Long Beach, California State University Long Beach, and the Long Beach Airport. Therefore, the proposed project would be consistent with the RCP's economy goal of enabling business to be profitable and competitive locally, regionally, nationally, and internationally.

For these reasons cited above, the proposed project would be consistent with the RCP and RTP/SCS's goal of locating new development adjacent to HQTAs, improving the transportation network, providing a variety of new housing types, promoting a diverse economy, and protecting the existing natural environment. For further discussion related to these PlaceTypes, refer to Chapter 3.0, Project Description.

4.4.9 Mitigation Measures

The proposed project would not result in any significant adverse impacts related to land use and planning, and therefore, no mitigation is required.

4.4.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines,* cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for land use. The cumulative impact area for land use for the proposed project is the City of Long Beach. Given that the proposed project encompasses a comprehensive update to the City's existing General Plan LUE and the adoption of a new UDE, the project itself is cumulative in nature. As such, each new development project facilitated by project approval would be subject to its own General Plan consistency analysis and would be reviewed for consistency with adopted land use plans and policies.

The City of Long Beach is an urbanized area with a wide variety of established land uses. The existing land use patterns within the City have been established with a variety of residential, commercial, office, industrial, and open space/recreational use, which are generally consistent with the City's General Plan Land Use Map and Zoning Map. The proposed project proposes to replace the City's existing General Plan LUE and associated LUE with a new LUE that would adopt PlaceTypes in place of traditional land use designations and would adopt a new UDE that would establish design guidelines unique to each proposed PlaceType. As such, approval of the proposed project would ensure that the proposed LUE would become the guiding land use document for the City, thereby mitigating any potential inconsistencies with the City's General Plan and other applicable land use documents (i.e., the California Coastal Act, the City's LCP, and SCAG's RCP and RTP/SCS). The project would also address potential inconsistencies with the City's Zoning Ordinance and Zoning Map within the first 5 years following project approval (as outlined in Project Design Feature 4.4.1), which would reduce cumulative project impacts related to potential zoning inconsistencies to a less than significant level. Further, land use patterns proposed as part of the project would be consistent with SCAG's growth patterns and long-range planning goals for the City and surrounding area (refer to Section 4.6, Population and Housing). Therefore, cumulative land use impacts associated with the proposed project would be considered less than significant, and no mitigation is required.

4.4.11 Level of Significance after Mitigation

There would be no significant unavoidable adverse impacts of the proposed project related to land use and planning.

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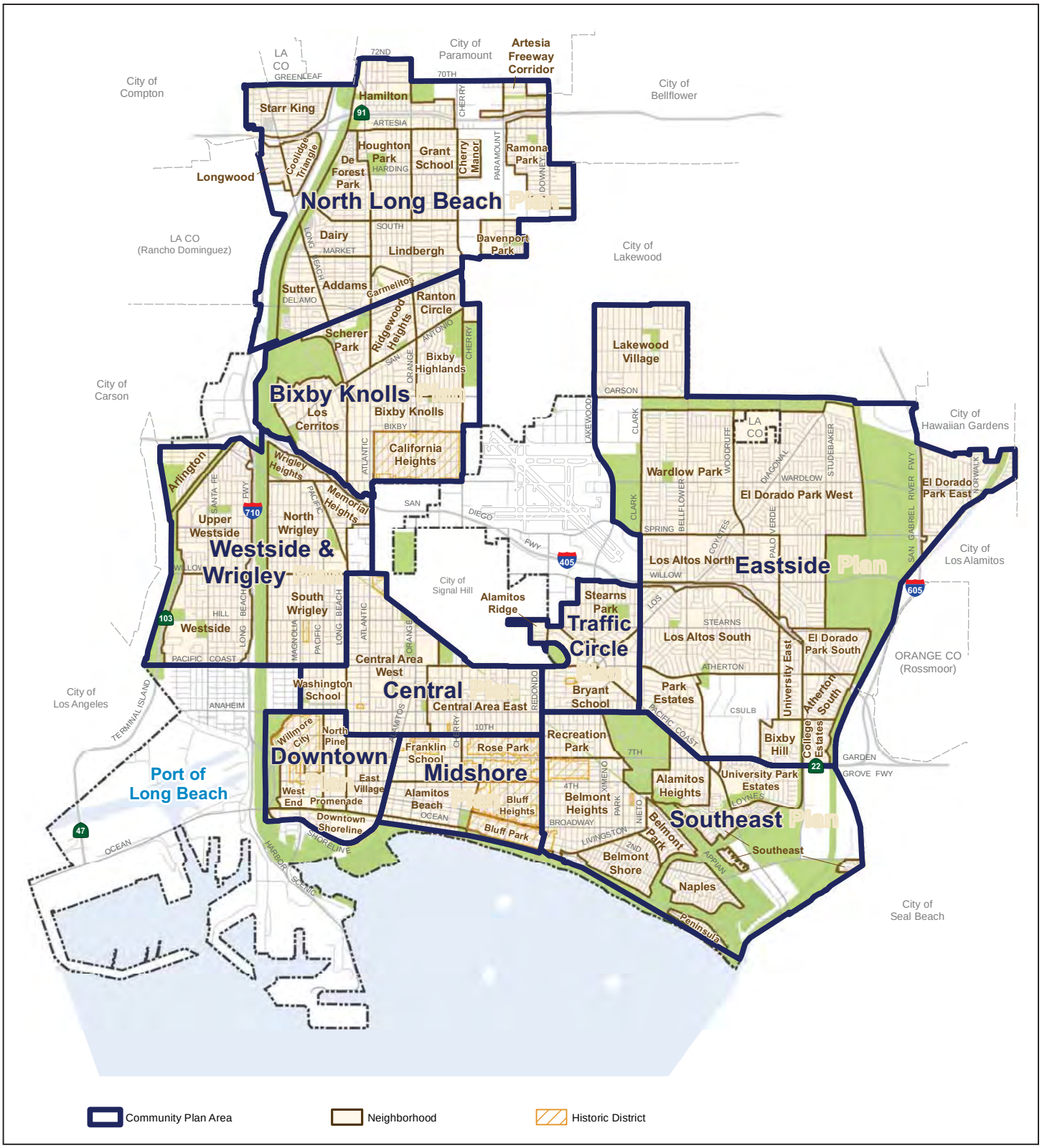

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FIGURE 4.4.1

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MILES

SOURCE: Proposed Land Use Element, City of Long Beach, June 2015

Long Beach General Plan
Land Use and Urban Design Elements
Community Plan Areas

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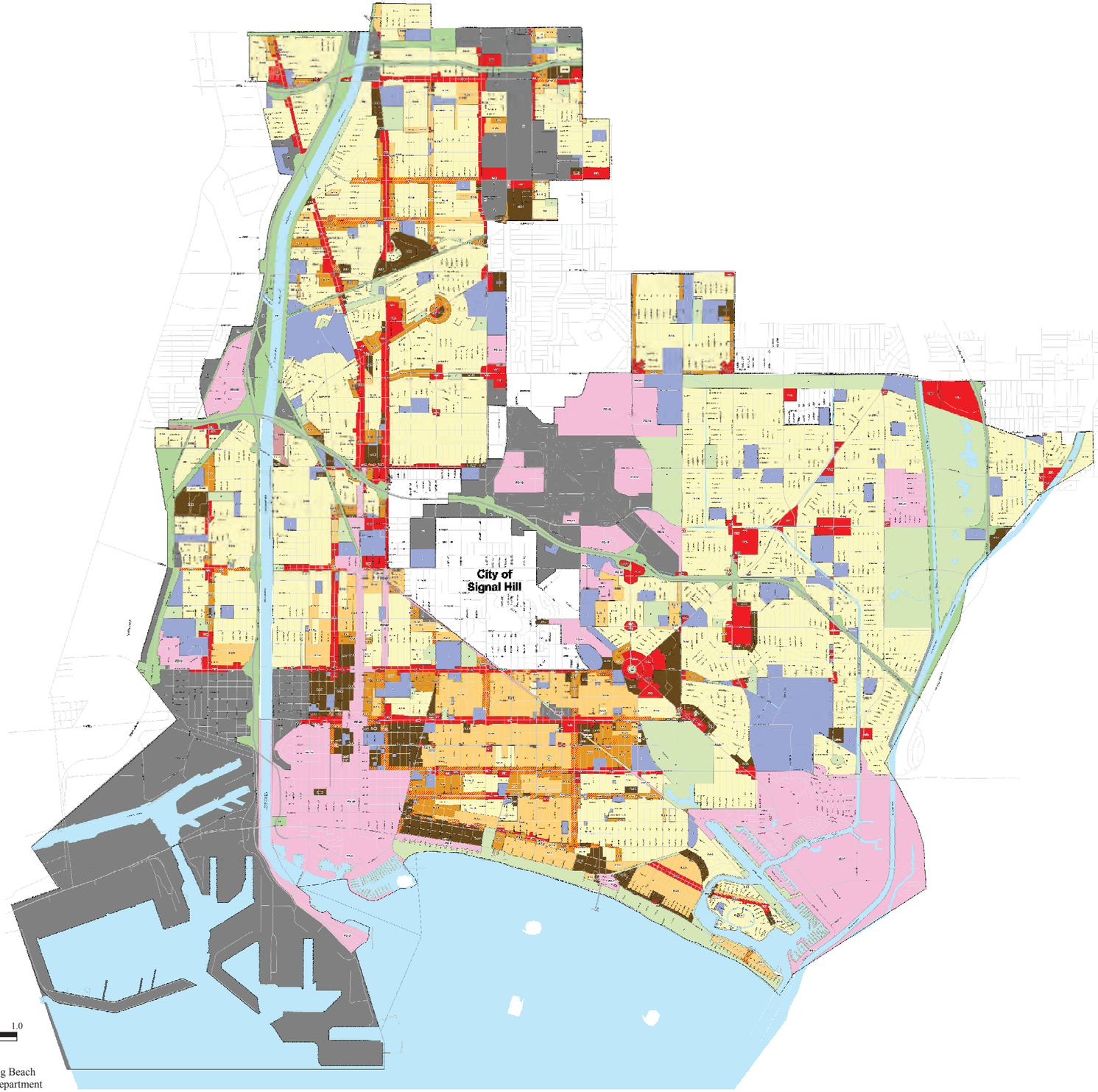

SOURCE: City of Long Beach
Planning Department

Residential Zones

- RM, R-1
- R-2
- R-3
- R-4

Commercial Zones

- CCA; CCP; CNA; CNP; CHW; CH
- CS

Mixed-Use Zones (Commercial/Residential)

- CCN; CCR; CNR; CO; CT

Planned Development District

- PD

Public Right-of-Way Zone

- PR

Park Zone

- P

Institutional Zone

- I

Industrial Zones

- IG; IL; IM; IP

Zoning District Definitions

RM - Mobile Homes
R-1 - Single-Family Residential
R-2 - Two-Family Residential
R-3 - Multi-Family Residential
CCA - Community Commercial - Automobile-Oriented
CCP - Community Commercial - Pedestrian-Oriented
CNA - Neighborhood Commercial - Automobile-Oriented
CNP - Neighborhood Commercial - Pedestrian-Oriented
CHW - Regional Highway Commercial
CH - Highway Commercial
CS - Commercial Storage
CCN - Community Commercial (Medium Density)
CCR - Community Commercial (Moderate Density)
CNR - Neighborhood Commercial & Residential
CO - Office Commercial
CT - Tourist and Entertainment Commercial
PD - Planned Development District
PR - Public Right-of-Way
P - Park
I - Institutional
IG - General Industrial
IL - Light Industrial
IM - Medium Industrial
IP - Port-Related Industrial

LSA

FIGURE 4.4.2

Long Beach General Plan
Land Use and Urban Design Elements
Zoning Districts

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FIGURE 4.4.3

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SOURCE: Proposed Land Use Element, City of Long Beach, June 2015

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Long Beach General Plan
Land Use and Urban Design Elements

Local Coastal Zone

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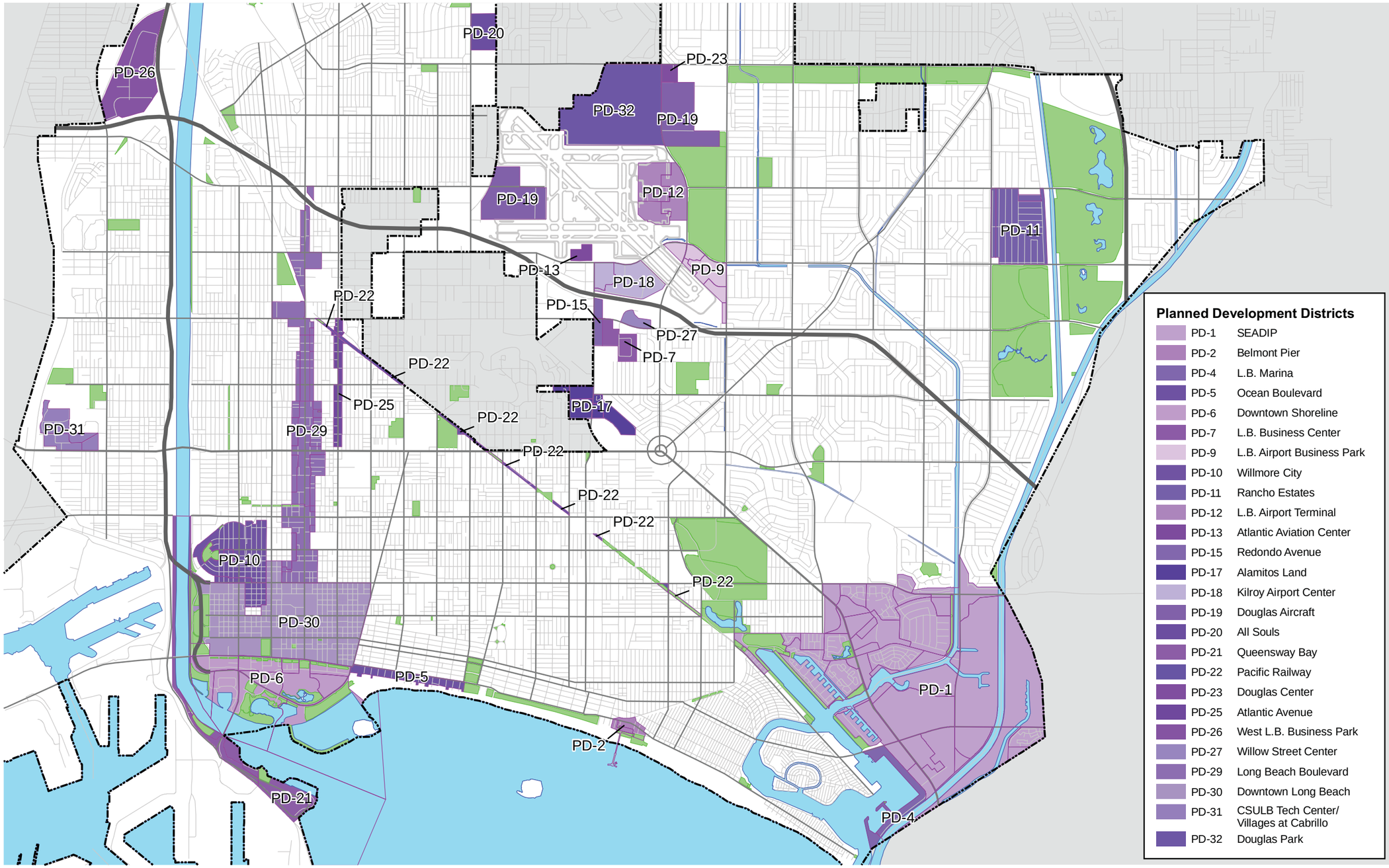

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FIGURE 4.4.4

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Long Beach General Plan
Land Use and Urban Design Elements

Planned Development Districts

SOURCE: Proposed Land Use Element, City of Long Beach, June 2015

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4.5 NOISE

4.5.1 Introduction

This section evaluates the potential short-term and long-term noise impacts associated with the construction and operation of potential development that would be allowed under the proposed General Plan Land Use Element and Urban Design Element (LUE/UDE) (proposed project). This analysis evaluates potential noise impacts within the planning area by evaluating the effectiveness of mitigation measures incorporated as part of the design of the proposed project. This section is based on information provided in the Noise Element (1975) of the City of Long Beach's (City) General Plan, the Noise Ordinance of the City's Municipal Code (2015), and the *Noise Impact Analysis* (LSA Associates, Inc. [LSA], March 2016) (Appendix C) prepared for the project.

4.5.2 Methodology

Evaluation of noise impacts associated with the proposed project includes the following:

- Determination of the short-term construction noise levels at off-site, noise-sensitive uses and comparison to the City's Noise Ordinance requirements.
- Determination of the required mitigation measures to reduce short-term, construction–related noise impacts and long-term, operation-related noise impacts from all noise sources.

Characteristics of Sound. Sound is increasing to such disagreeable levels in the environment that it can threaten quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound wave combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound. Sound intensity is measured through the A-weighted decibel (dBA) scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units, such as inches or pounds, decibels (dB) are measured on a logarithmic scale representing points on a sharply rising curve. For example, 10 dB is 10 times more intense than 1 dB, 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Thirty dB represents 1,000 times as much acoustic energy as 1 dB. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between

the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source, such as highway traffic or railroad operations, the sound decreases 3 dB for each doubling of distance in a hard site environment. Line-source noise in a relatively flat environment with absorptive vegetation decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. However, the predominant rating scales for human communities in the State of California are the equivalent continuous sound level (L_{eq}) and the Community Noise Equivalent level (CNEL) or the day-night average level (L_{dn}) based on dBA. CNEL is the time-varying noise over a 24-hour period, with a weighting factor of 5 dBA applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a weighting factor of 10 dBA applied from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are normally interchangeable and within 1 dBA of each other.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 dB and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise

exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by a feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying less developed areas.

Vibration. Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernible, but without the effects associated with the shaking of a building there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as motion of building surfaces, rattling of items on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Building damage is not a factor for normal transportation projects, including rail projects, with the occasional exception of blasting and pile driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

To distinguish vibration levels from noise levels, the unit is written as “vibration velocity decibels” (VdB). Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Ground-borne vibrations are almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet (ft) of the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 ft (Federal Transit Administration [FTA] 1995). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. Ground-borne noise is not likely to be a problem because noise arriving via the normal airborne path usually will be greater than ground-borne noise.

Ground-borne vibration has the potential to disturb people as well as damage buildings. Although it is very rare for train-induced ground-borne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile driving to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 1995). Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). RMS is best for characterizing human response to building vibration, and PPV is used to characterize potential for damage.

Factors that influence ground-borne vibration and noise include the following:

- **Vibration Source:** Vehicle suspension, wheel types and condition, track/roadway surface, track support system, speed, transit structure, and depth of vibration source
- **Vibration Path:** Soil type, rock layers, soil layering, depth to water table, and frost depth
- **Vibration Receiver:** Foundation type, building construction, and acoustical absorption

Among the factors listed above, there are significant differences in the vibration characteristics when the source is underground compared to at the ground surface. In addition, soil conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock.

Experience with ground-borne vibration indicates that: (1) vibration propagation is more efficient in stiff, clay soils than in loose, sandy soils; and (2) shallow rock seems to concentrate the vibration energy close to the surface and can result in ground-borne vibration problems at large distances from the source. Factors such as layering of the soil and depth to the water table can have significant effects on the propagation of ground-borne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

In extreme cases, excessive ground-borne vibration has the potential to cause structural damage to buildings. For buildings considered of particular historical significance or that are particularly fragile structures, the damage threshold is approximately 96 VdB; the damage threshold for other structures is 100 VdB.[1]

4.5.3 Existing Environmental Setting

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

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

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[1] Harris, C.M., 1998. *Handbook of Acoustical Measurements and Noise Control.*

Existing Sensitive Land Uses in the Project Vicinity. Noise-sensitive receptors in the City include residences, schools, hospitals, churches, and similar uses that are sensitive to noise. Construction and operation of development allowed under the LUE could adversely affect nearby noise-sensitive land uses.

Overview of the Existing Noise Environment. In the City, the dominant source of noise is transportation noise, including vehicular traffic, rail, and airport noise. Industrial and mechanical equipment are also contributors to the noise environment in the City, as are intermittent sources such as construction equipment and leaf blowers. Noise from motor vehicles is generated by engine vibrations, the interaction between the tires and the road, and the exhaust systems. Airport-related noise levels are primarily associated with aircraft engine noise made while aircraft are taking off, landing, or running their engines while still on the ground. Existing noise sources are further discussed below.

Ambient Noise Levels. To assess existing noise levels, LSA conducted 11 short-term (15-minute) noise measurements in the City on February 11, 2016. The noise measurements were recorded at different locations within the City based on the Major Areas of Change identified in the LUE. Noise monitoring locations are shown in Figure 4.5.1. Noise measurement data collected during monitoring is summarized in Table 4.5.A. The short-term noise measurements indicate that ambient noise in the City ranges from approximately 62.0 dBA to 76.2 dBA L_{eq}. Traffic on surrounding roadways was reported as the primary noise source.

Existing Roadway Noise Levels. Motor vehicles, with their distinctive noise characteristics, are one of the primary sources of noise in the City. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the receptor. Major contributing roadway noise sources include Interstate 710 (I-710), Interstate 405 (I-405), State Route 91 (SR-91), and local roadways, including Santa Fe Avenue, Atlantic Avenue, Alamitos Avenue, 7th Street, 2nd Street, Ocean Boulevard, and other arterial and collector roadways throughout the City.

Existing Rail Noise Levels. The City is also subject to operational rail noise. The Los Angeles County (County) Metropolitan Transportation Authority (Metro) Rail Blue Line passes north to south through the City along Long Beach Boulevard. The Blue Line's service hours are from approximately 4:45 a.m. until 1:00 a.m. on weekdays and from 4:45 a.m. until 2:00 a.m. on weekends. Land uses surrounding the rail line include multi- and single-family residential uses, commercial uses, the Senior Arts Colony, high-rise office towers, the Pacific Coast Campus of Long Beach City College, and the Long Beach Transit Mall. Seven different Metro stations serve local neighborhoods throughout the City. Activity on the Blue Line affects the ambient noise environment along the railroad alignment.

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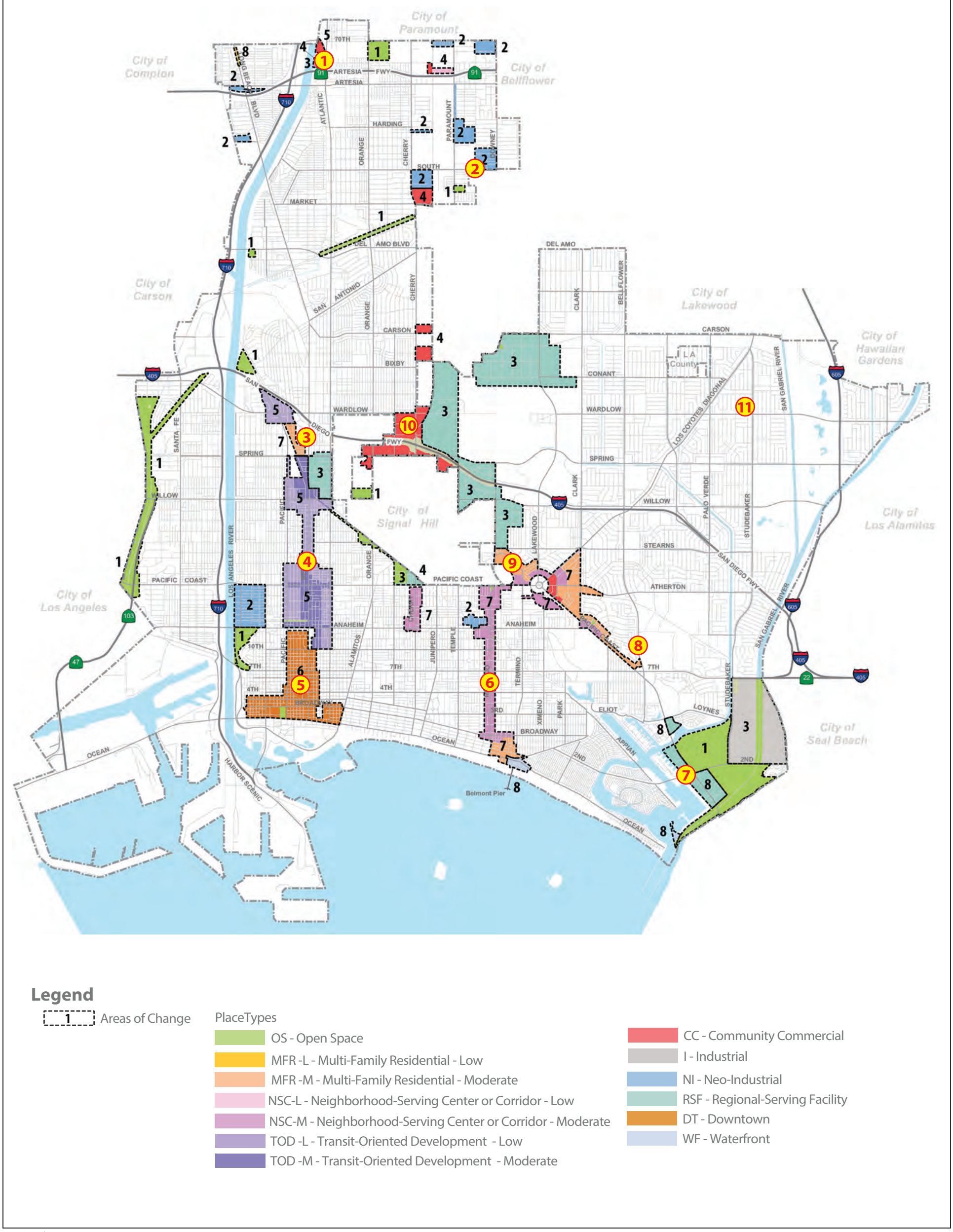

LSA

LEGEND

(#) - Noise Monitoring Location

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SOURCE: Proposed Land Use Element, City of Long Beach, June 2015

FIGURE 4.5.1

Long Beach General Plan
Land Use and Urban Design Elements
Noise Monitoring Locations

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Table 4.5.A: Ambient Noise Monitoring Results (dBA)

Location Number	Location Description	Start Time	L_{eq}[1]	L_{max}[2]	L_{min}[3]	Primary Noise Sources
ST-1	6857–6909 Atlantic Avenue	7:27 a.m.	66.6	82.1	59.6	Traffic on Atlantic Avenue, faint traffic on I-710, trucks with trailers turning in nearby lot
ST-2	3114 South Street (Church of Latter-Day Saints)	7:58 a.m.	70.3	80.8	53.6	Traffic on South Street, birds
ST-3	3115 Long Beach Boulevard	8:58 a.m.	63.6	73.6	49.2	Traffic on Long Beach Boulevard, backup beeper across Long Beach Boulevard, birds
ST-4	1940 Long Beach Boulevard	9:35 a.m.	65.7	80.9	45.0	Traffic on Long Beach Boulevard, birds, distant music
ST-5	614 Locust Avenue (in parking lot adjacent to 6th Street)	10:13 a.m.	63.3	77.3	47.7	Traffic on 6th Street, birds
ST-6	600 Redondo Avenue (in parking lot)	10:51 a.m.	64.0	81.5	45.5	Traffic on Redondo Avenue, car with loud music
ST-7	5800–6462 East Marina Drive (adjacent to 2nd Street, near bus stop)	2:11 p.m.	62.3	81.5	49.0	Traffic on 2nd Street, birds
ST-8	California State University, Long Beach, near Bellflower Boulevard and Beach Drive	1:15 p.m.	66.0	74.8	49.3	Traffic on Bellflower Boulevard, birds, music in car, horn
ST-9	3500 Hathaway Avenue (apartment complex open grass area)	11:42 a.m.	62.0	75.0	42.4	Traffic on Hathaway Avenue, distant music in apartment
ST-10	3245 Cherry Avenue (in parking area)	8:31 a.m.	76.2	99.3	61.3	Traffic on Cherry Avenue
ST-11	3401 Studebaker Road (in parking lot adjacent to Wardlow Road)	2:47 p.m.	62.5	79.2	46.9	Traffic on Wardlow Road, wind gusts up to 7.5 mph

Source: *Noise Impact Analysis*, LSA Associates, Inc. (March 2016) (Appendix C).
[1] L_{eq} represents the average of the sound energy occurring over the measurement time period.
[2] L_{max} is the highest sound level measured during the measurement time period.
[3] L_{min} is the lowest sound level measured during the measurement time period.
dBA = A-weighted decibels
I-710 = Interstate 710
mph = miles per hour

The Union Pacific Railroad line (UPRR) is located west of I-710. Land uses near the rail line include residential, commercial, and public facilities. Factors that influence the overall impact of railroad noise on adjacent uses include the distance of buildings from the tracks, the intermittent nature of train noise (e.g., engine, horns, and tracks), and the lack of sound walls or other barriers between the tracks and adjacent uses.

Existing Airport Noise Levels. Long Beach Airport is a public airport centrally located in the City, approximately 3 miles northeast of Downtown. This airport has limited passenger flights

and is restricted by ordinances that minimize airport-related noise. Although commercial flights are restricted, several charters, private aviation, flight schools, law enforcement flights, helicopters, advertising blimps, and planes towing advertising banners still frequently operate from this airport.

Other airports with aircraft activity that affect the ambient noise environment within the City limits include Los Angeles International Airport and John Wayne Airport. Los Angeles International Airport is located approximately 20 miles northwest of the City, and John Wayne Airport is located approximately 30 miles southwest of the City. Although noise from aircraft activity is occasionally audible throughout the City, the City is not located within the 65 dBA CNEL noise contour of these airports.

4.5.4 Regulatory Setting

Federal Regulations and Policies.

Federal Transit Administration and Federal Railroad Administration. Both the FTA in its *Transit Noise and Vibration Impact Assessment* (FTA, May 2006) and the Federal Railroad Administration (FRA) in its *High-Speed Ground Transportation Noise and Vibration Impact Assessment* (FRA, December 1998) included ground-borne vibration and noise impact criteria guidance, as shown in Table 4.5.B. Vibration impact criteria included in the FTA *Transit Noise and Vibration Impact Assessment* are used in this analysis for ground-borne vibration impacts on human annoyance, as shown in Table 4.5.B. The criteria presented in Table 4.5.B account for variation in project types as well as the frequency of events, which differ widely among projects. It is intuitive that when there will be fewer events per day, it should take higher vibration levels to evoke the same community response. This is accounted for in the criteria by distinguishing between projects with frequent and infrequent events, in which the term "frequent events" is defined as more than 70 events per day. The vibration impact levels indicated in Table 4.5.B are used as thresholds to determine acceptable levels for development adjacent to vibration sources. The criteria for environmental impact from ground-borne vibration and noise are based on the maximum levels for a single event.

United States Environmental Protection Agency. In 1972, Congress enacted the United States Noise Control Act. This act authorized the United States Environmental Protection Agency (EPA) to publish descriptive data on the effects of noise and establish levels of sound "requisite to protect the public welfare with an adequate margin of safety." These levels are separated into health (hearing loss levels) and welfare (annoyance levels). For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to 70 dBA during a 24-hour period of time. At 55 dBA L_{dn}, 95 percent sentence clarity (intelligibility) may be expected at 11 ft, with no community reaction. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance. The EPA cautions that these identified levels are guidelines, not standards.

Table 4.5.B: Ground-borne Vibration and Noise Impact Criteria

Land Use Category	Ground-borne Vibration Impact Levels (VdB re 1 micro-inch/sec)		Ground-borne Noise Impact Levels (dB re 20 micro-Pascals)	
	Frequent[1] Events	Infrequent[2] Events	Frequent[1] Events	Infrequent[2] Events
Category 1: Buildings in which low ambient vibration is essential for interior operations (i.e., vibration-sensitive manufacturing, hospitals with vibration-sensitive equipment, and university research operation).	65 VdB[3]	65 VdB[3]	B[4]	B[4]
Category 2: Residences and buildings where people normally sleep.	72 VdB	80 VdB	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	83 VdB	40 dBA	48 dBA

Source: *Noise Impact Analysis*, LSA Associates, Inc. (March 2016) (Appendix C).
[1] Frequent events are defined as more than 70 events per day.
[2] Infrequent events are defined as fewer than 70 events per day.
[3] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the heating, ventilation, and air-conditioning (HVAC) systems and stiffened floors.
[4] Vibration-sensitive equipment is not sensitive to ground-borne noise.
dB = decibels
inch/sec = inches per second
dBA = A-weighted decibels
VdB = vibration velocity decibels

State Regulations and Policies. The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. Referred to as the "State Noise Insulation Standard," these regulations require buildings to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the receptor. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in California Code of Regulations (CCR) Title 24 (known as the California Building Standards Code), Part 2 (known as the California Building Code [CBC]), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor/ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

Local and Regional Policies and Regulations.

City of Long Beach Municipal Code. The City addresses noise impacts in Title 8: Health and Safety, Chapter 8.80, Noise, and sets regulations to minimize airport noise in Title 16: Public Facilities and Historical Landmarks, Chapter 16.43, Airport Noise Compatibility.[1] The Municipal Code establishes exterior and interior noise standards at receiving land uses and construction activity noise regulations as identified below.

[1] City of Long Beach. 2015. Municipal Code. September.

Chapter 8.80, Noise, establishes exterior and interior noise limits for the generation of sound within the City. The maximum noise levels vary based on the receiving land use type and the cumulative duration of noise. The ordinance also limits noise generated by construction. The Municipal Code restricts construction activities to weekdays between the hours of 7:00 a.m. and 7:00 p.m. and Saturdays between 9:00 a.m. and 6:00 p.m., except for emergency work. Construction work on Sundays is prohibited unless the City's Noise Control Officer issues a permit. The permit may allow work on Sundays between 9:00 a.m. and 6:00 p.m. Additionally, Chapter 16.43, Airport Noise Compatibility, establishes cumulative noise limits and noise budgets for properties in the vicinity of Long Beach Airport. The Municipal Code establishes a goal that incompatible property in the vicinity of the airport shall not be exposed to noise above 65 dBA CNEL.

Loading and unloading activities are also regulated under the Noise Ordinance. The ordinance states that loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. is restricted to the noise level provisions of the Exterior Noise Limits by land use district, as shown in Table 4.5.C (Table A of the Noise Ordinance), and to the Interior Noise Limits shown in Table 4.5.D (Table B of the Noise Ordinance).

Table 4.5.C: Exterior Noise Limits

Receiving Land Use District	Land Uses	Time Period	Noise Level (dBA)
District One	Predominantly residential, with other land use types also present	Night: 10:00 p.m.–7:00 a.m.	45
		Day: 7:00 a.m.–10:00 p.m.	50
District Two	Predominantly commercial, with other land use types also present	Night: 10:00 p.m.–7:00 a.m.	55
		Day: 7:00 a.m.–10:00 p.m.	60
District Three	Predominantly industrial, with other land types use also present	Any time	65
District Four	Predominantly industrial, with other land types use also present	Any time	70
District Five	Airport, freeways, and waterways regulated by other agencies	Regulated by other agencies and laws	

Source: City of Long Beach Municipal Code, Section 8.80.160.
Note: Limits for Districts Three and Four are intended primarily for use at their boundaries rather than for noise control within those districts.
dBA = A-weighted decibels

Table 4.5.D: Background Noise Correction

Difference Between Total Noise and Background Noise Alone (decibels)	Amount to Be Subtracted From
6–8	1
9–10	.5

Source: City of Long Beach Municipal Code, Section 8.80.160.

Additionally, the ordinance prohibits 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 ft from the source if on a public space or public right-of-way.

City of Long Beach General Plan. The adopted City of Long Beach General Plan addresses noise in the Noise Element.[1] The Noise Element contains goals and policies for noise control and abatement in the City. The goals and policies contained in the Noise Element address noise in relation to land use planning, the noise environment, transportation noise, construction and industrial noise, population and housing noise, and public health and safety. General noise goals for Long Beach aim to attain a healthier and quieter environment for all citizens while maintaining a reasonable level of economic progress and development.[2]

The goals and categorical recommendations (i.e., policies) of the City's Noise Element that are applicable to the proposed project are identified in Table 4.5.E.

Table 4.5.E: City of Long Beach General Plan Noise Element Goals and Policies Applicable to the Project

General Noise Goals
Goal 1: To improve and preserve the unique and fine qualities of Long Beach and eliminate undesirable or harmful elements.
Goal 2: To develop a well-balanced community offering planned and protected residential districts…, well distributed commercial districts, planned and restricted industrial districts, and a coordinated circulation system for fast, safe, and efficient movement of people and commodities (General Plan [1961]).
Goal 3: To improve the urban environment in order to make Long Beach a more pleasant place to live, work, play and raise a family.
Goal 5: To develop specific neighborhood noise plans with the participation of resident citizen groups.
Goals Related to Land Use Planning
Goal 1: Provide the City with limited maximum noise levels by judicious land use planning policies.
Goal 2: Develop standards for local fixed point (stationary) noise sources.
Goal 3: Set measurable goals for the reduction of noise in problem areas.
Goal 4: Propose land uses or activities that would act as buffer zones between incompatible land uses.
Goal 5: Consider existing ambient noise levels before establishing specific permitted levels of sound.
Goal 6: Locate and mitigate noise impacts from highways and freeways on residential land uses and institutional, recreational and school facilities.
Goal 7: Identify and anticipate existing or proposed land uses that cause (directly and indirectly) noise-generating activities.
Goal 8: Promote the health and well-being of the people of Long Beach by adopting standards for the proper balance, relationship, and distribution of the various types of land uses…(General Plan [1961]).
Goal 9: Protect business and industrial areas against intrusions of non-business or non-industrial land uses which are highly sensitive to noise.

[1] City of Long Beach. 1975. Long Beach General Plan. March.
[2] Ibid.

Table 4.5.E: City of Long Beach General Plan Noise Element Goals and Policies Applicable to the Project

Goals Related to the Noise Environment
Goal 1: To prevent the loss of relatively quiet areas of Long Beach by regulating potential noise sources.
Goal 6: To describe the noise problem areas which are within local control.
Goal 7: To continue to take restorative measures to remedy and reduce high noise areas within the City.
Goals Related to Transportation Noise
Goal 1: Recommending a plan for compatible land uses for those portions of Long Beach within transportation noise zones.
Goal 2: Discouraging within transportation noise zones the development of noise sensitive uses that cannot be sufficiently insulated against externally generated noise at reasonable cost.
Goal 3: Developing long range re-allocation of noise sensitive land uses away from transportation noise impact areas.
Goal 4: Providing standards and criteria for noise emissions from transportation facilities.
Goal 8: Reducing the level of noise exposure from surface transportation in problem areas not preempted by State or Federal law.
Goal 9: Reducing the level of noise exposure from air operations and aircraft ground maintenance in problem areas no preempted by State and Federal law.
Goals Related to Construction and Industrial Noise
Goal 1: To reduce the level of noise exposure to the population caused by demolition and construction activities.
Goal 2: To reduce the level of outdoor noise exposure to the population generated by industries.
Goals Related to Population and Housing Noise
Goal 1: To reduce the level of outdoor noise exposure the population is subjected to.
Goal 2: To achieve greater indoor quietness in multiple dwelling residential buildings.
Goal 3: To reduce the level of noise generated by the population into the environment of the City.
Goal 5: To stimulate the redevelopment or refurbishment of blighted housing to create quieter neighborhoods and better soundproofed dwellings.
Goal 6: To require better sound deadening design on new housing units where acoustical problems could develop.
Goal 7: To reduce the level of incoming and outgoing noise into and from residential dwellings within the City.
Goal 9: To facilitate wherever feasible, noise standards that shall be employed in a manner consistent with proposed land uses, population densities and building types.
Goals Related to Public Health and Safety
Goal 1: To inform citizens of real and potential noise hazards, both physical (to the hearing system) and psychological (to the nervous system).
Goal 2: To regulate and control noise which is injurious to health or psychological well-being.
Goal 3: To continue to reduce excessive traffic noise in problem areas by the construction of sound barriers, further synchronization of traffic lights, and posting of "Quiet Zone" signs around hospitals and other highly noise sensitive land uses.
Goal 7: To advise citizens on noise-related problems, complaints and to suggest solutions on an individual basis.
Recommendations Related to Development Policies
4.1: Where incompatibility exists at present, action shall first be taken to change the noise environment.
4.2: Where incompatibility exists at present and future projections indicate that the noise environment cannot be reduced to create compatibility, every effort shall be made to change the development to achieve compatibility.
4.3: No future development shall be allowed which is incompatible with the existing or future noise environment unless the developer can show: a) The development can reasonably be expected to be compatible at some time in the near future; and b) Other factors favoring the development (social, environmental, for example) outweigh factors against the development.
4.4: No future development shall be allowed which causes other developments to become incompatible with their noise environments.

Source: City of Long Beach, General Plan Noise Element (1975).

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

The following proposed goals, strategies, and policies are applicable to the analysis of noise impacts throughout the City.

Land Use Element.

- **LU Policy 8-1:** Protect neighborhoods from the encroachment of incompatible activities or land uses that may have negative impacts on residential living environments.
- **LU Policy 15-4:** Work with regional agencies, residents, and businesses to preserve established homes, businesses, and open spaces; limit the exposure of toxic pollutants and vehicle noise and minimize traffic issues impacting residential neighborhoods as a result of the I-710 Freeway expansion.
- **Bixby Knolls Land Use Strategy 1:** Continue to monitor noise levels and implement the Long Beach Noise Ordinance, especially as it pertains to noise generated from airport-related activities.
- **Westside and Wrigley Land Use Strategy 6:** Uses allowed in the Edison and UPRR utility rights-of-way must be designed to have minimal dust, noise, traffic, visual and other nuisance impacts on residential neighbors. These properties shall be screened with landscape (green) buffers and proactively maintained.
- **Central Land Use Strategy 3:** Direct future multi-family developments to existing locations and locations served by public transit, especially near regional-serving centers.
- **Downtown Land Use Strategy 7:** Continue to implement the Downtown Plan (2012) and anticipate that most changes here will occur in the areas surrounding the Metro Blue Line fixed rail route. The Downtown and Transit-Oriented Development (TOD) PlaceTypes recommended in this land use plan encourage higher density infill developments and taller buildings appropriate in walkable, transit-connected urban centers.

Urban Design Element.

- **Policy UD 14-2:** Acknowledge transitions between commercial and residential uses by transitioning in height, scale, and intensity in a thoughtful way to provide a buffer to lower density residential development and transition from higher to lower density.
- **Policy UD 14-4**: Protect neighborhoods from the encroachment of incompatible activities or land uses that may have negative impacts on the residential living environment.
- **Policy UD 14-5:** Promote commercial center and corridor development compatibility with adjacent residential uses, including ensuring that project design and function minimizes the potential adverse impacts of vehicle access, parking and loading facilities, building massing, signage, lighting, trash enclosures and noise generating uses and areas.
- **Policy UD 19-2:** Ensure that project site design and function minimizes the potential adverse impacts of vehicle access, parking and loading facilities, signage, lighting, trash enclosures, and sound systems.

- **Policy UD 22-1:** Encourage the massing of buildings and setbacks behind the Long Beach Boulevard light rail corridor to transition from moderate to low, in order to gracefully handle the transition from more intense to less intense development.
- **Policy UD 23-1:** Provide adequate setbacks, along with visual and noise buffers, to separate automobile-oriented developments from adjacent residential neighborhoods.
- **Policy UD 24-3**: Promote the incorporation of buffers between residential and industrial uses, such as surface parking, landscaped open space buffers, and lower buildings.
- **Policy UD 24-5:** Encourage incompatible land uses and operations to be located away from and screened from view of residential neighborhoods.
- **Policy UD 26-2:** Encourage separation of incompatible land uses with site planning strategies and appropriate design treatments.

4.5.6 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *State California Environmental Quality Act (CEQA) Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact with respect to noise if it would:

Threshold 4.5.1: Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies

Threshold 4.5.2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels

Threshold 4.5.3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

Threshold 4.5.4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

Threshold 4.5.5: 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, expose people residing or working in the project area to excessive noise levels

Threshold 4.5.6: For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels

4.5.7 Standard Conditions and Project Design Features

No Standard Conditions or Project Design Features (PDFs) have been identified with respect to noise; however, the update to the LUE includes two additional policies to address long-term stationary noise and ground-borne vibration from rail facilities:

LU Policy 15-5: Prior to project approval for projects subject to CEQA review, an acoustical analysis would be required for all noise sensitive projects located in an area with noise levels greater than 60 dBA CNEL. All new residential land uses shall be designed to maintain a standard of 45 dBA L_{dn} or less in building interiors. Noise reduction measures to achieve this noise level could include, but are not limited to, forced air ventilation so that windows can remain closed and/or upgraded wall and window assemblies.

LU Policy 15-6: Prior to approval of any new development within 200 feet of the Metro rail line, the City of Long Beach shall require applicants to submit plans to Metro, consistent with Metro's Adjacent Construction Design Manual, and to conduct a vibration assessment demonstrating that FTA Ground-borne Vibration Impact Criteria for the proposed land use are not exceeded. If necessary, the vibration assessment shall demonstrate project modifications required to ensure criteria compliance. At the City's discretion and Metro's request, a Noise Easement may be required to deed Metro the right to cause in said easement noise, vibrations, and other effects that may be caused by the operation of public transit vehicles.

4.5.8 Project Impacts

Threshold 4.5.1: Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies

Less than Significant Impact. As described in Chapter 3.0, Project Description, of this Draft Environmental Impact Report (EIR), major land use changes proposed as part of the LUE/UDE are identified as Major Areas of Change and include eight primary change areas associated with the updated LUE.

- The first Major Area of Change involves the creation of more open space throughout the City. Areas targeted for the establishment of the Open Space PlaceType include small pockets of land along the Los Angeles River, two strips of land along State Route 103 and an abandoned railroad in the northern area of the City, a large portion of the Southeast Area Development and Improvement Plan (SEADIP) area, and pockets of land scattered throughout the City.
- The second Major Area of Change proposes to buffer industrial activities from existing neighborhoods by encouraging the conversion of some industrial uses to neo-industrial uses. Areas targeted for the establishment of the Neo-Industrial PlaceType include existing industrial areas in the northern portion of the City and a larger industrial area along the Los Angeles River, just north of the City's Downtown.
- The third Major Area of Change aims to promote regional-serving uses by maintaining existing regional-serving facilities throughout the City.
- The fourth Major Area of Change proposes to provide land use transitions from industrial to commercial uses in small areas in the northern portion of the City and in the area directly east of Long Beach Airport.

- The fifth Major Area of Change aims to promote TOD along Long Beach Boulevard as part of a larger citywide effort to reduce automobile dependence in the City.
- The sixth Major Area of Change aims to continue development in the Downtown area.
- The seventh Major Area of Change aims to promote infill and redevelopment to support transit along Redondo and Cherry Avenues and near the Traffic Circle.
- The eighth Major Area of Change aims to redevelop sites within the City to their "highest and best use." The sites targeted for redevelopment are located within the SEADIP area, in the southeastern portion of the City.

In total, the LUE proposes changes to approximately 13 percent of the land area (or the equivalent of 4,180 acres) in the City. Construction associated with implementation of the LUE would occur over a period of approximately 15 to 24 years.

Short-Term Construction-Related Noise Impacts. Two types of short-term noise impacts could occur during construction of potential development allowed by the LUE. First, construction crew commutes and the transport of construction equipment and materials to the site for future projects would incrementally increase noise levels on access roads leading to the sites. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance (passing trucks at 50 ft would generate up to a maximum of 87 dBA), the effect on longer-term (hourly or daily) ambient noise levels would be small. Therefore, short-term construction-related impacts associated with worker commute and equipment transport to future project sites would be less than significant and no mitigation is required.

The second type of short-term noise impact is related to noise generated during demolition, site preparation, excavation, grading, and building erection on the future project sites. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

As shown below in Table 4.5.F, typical construction noise levels range up to 99 dBA L_{max} at 50 ft from construction during the noisiest construction phases. The site preparation phase, which would include excavation and grading, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Table 4.5.F: Typical Construction Equipment Maximum Noise Levels (L_{max})

Type of Equipment	Range of Maximum Sound Levels (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile drivers	81 to 96	93
Rock drills	83 to 99	96
Jackhammers	75 to 85	82
Pneumatic tools	78 to 88	85
Pumps	74 to 84	80
Scrapers	83 to 91	87
Haul trucks	83 to 94	88
Cranes	79 to 86	82
Portable generators	71 to 87	80
Rollers	75 to 82	80
Dozers	77 to 90	85
Tractors	77 to 82	80
Front-end loaders	77 to 90	86
Hydraulic backhoe	81 to 90	86
Hydraulic excavators	81 to 90	86
Graders	79 to 89	86
Air compressors	76 to 89	86
Trucks	81 to 87	86

Source: *Noise Impact Analysis*. LSA Associates, Inc. (March 2016) (Appendix C).
dBA = A-weighted decibels
L_{max} = maximum instantaneous noise level

Construction allowed under the LUE is expected to require the use of earthmovers, bulldozers, and water and pickup trucks. The maximum noise level generated by each scraper on future project sites would be approximately 87 dBA L_{max} at 50 ft from the scraper. Each bulldozer would generate approximately 85 dBA L_{max} at 50 feet. The maximum noise level generated by water and pickup trucks would be approximately 86 dBA L_{max} at 50 ft from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level during this phase of future construction would be 91 dBA L_{max} at a distance of 50 ft from the active construction area.

Construction noise is permitted by the City's Municipal Code when activities occur between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on Saturdays. No construction would be permitted on Sundays. Construction activities associated with development allowed under the LUE would be subject to compliance with the City's Noise Ordinance to ensure that noise impacts from construction sources are reduced to a less than significant level. No mitigation is required.

Long-Term Stationary-Source Noise Impacts. Development allowed under the proposed LUE may include the installation or creation of new stationary sources of noise, or could include the development of new sensitive land uses in the vicinity of existing noise sources. For commercial or industrial uses, these noise sources could include loading/unloading operations, generators, and

outdoor speakers; for residential uses, stationary noise sources may include air conditioners or pool pumps. These stationary sources of noise would have the potential to disturb adjacent sensitive receptors. However, noise generation would continue to be limited by the City's Noise Ordinance, Chapter 8.80.

Implementation of the LUE is not anticipated to result in increased railroad operations within the City. However, the LUE proposes the TOD PlaceType, which would allow future multifamily developments to be located along the Metro Blue Line fixed rail route. Locating multifamily developments near the light-rail corridor could expose sensitive land uses to operational rail noise.

The City's Municipal Code addresses noise in Title 8: Health and Safety, Chapter 8.80, Noise. The primary objective of Chapter 8.80 is to establish exterior and interior noise standards at receiving land uses and construction activity noise regulations. In addition to the policies identified the Noise Element of the General Plan to minimize the effects of noise on noise-sensitive uses, the LUE/UDE includes the following policies and land use strategies to protect sensitive receptors from stationary noise sources and encourage land use compatibility: LU Policy 8-1, LU Policy 15-4, Bixby Knolls Land Use Strategy 1, Westside and Wrigley Land Use Strategy 6, Central Land Use Strategy 3, Downtown Land Use Strategy 7, Policy UD 14-2, Policy UD 14-4, Policy UD 14-5, Policy UD 19-2, Policy UD 22-1, Policy UD 23-1, Policy UD 24-3, Policy UD 24-5, and Policy UD 26-2 (refer to Subsection 4.5.5).

Development allowed by the LUE and UDE may include the development of new sensitive land uses in the vicinity of existing noise sources and could potentially subject sensitive land uses to long-term noise impacts. However, several of the LUE and UDE policies, specifically Policy UD 26-2, require new development projects to incorporate site planning and project design strategies to separate or buffer neighborhoods from incompatible activities or land uses. Furthermore, to ensure new development would meet the interior noise standards identified by the State, the LUE has incorporated LU Policy 15-5 (as described further above). LU Policy 15-5 requires that all new developments in areas with noise levels greater than 60 dBA CNEL prepare an acoustical analysis and requires new residential land uses to be designed to maintain a standard of 45 dBA L_{dn} or less in building interiors. In addition, any new noise-generating sources would be subject to compliance with Chapter 8.80, Noise (including Table A: Exterior Noise Limits), of the City's Municipal Code (Table 4.5.C of this Draft EIR), which sets exterior noise standards for the various land uses within the City. As discussed above, implementation of the LUE/UDE would include policies and strategies that protect sensitive receptors from stationary noise sources in excess of acceptable levels. Therefore, implementation of the LUE/UDE would not expose persons to noise levels in excess of the City's Municipal Code and no mitigation measures are required.

Threshold 4.5.2: Expose persons to or generate excessive groundborne vibration or groundborne noise levels

Less than Significant Impact. As previously described, common sources of ground-borne vibration and noise include trains and construction activities such as blasting, pile driving, and operating heavy earthmoving equipment. Typically, the main effect of ground-borne vibration and noise is to cause

annoyance for occupants of nearby buildings. Ground-borne noise and vibration from construction activity would be mostly low to moderate except if pavement breaking or sheet-pile vibration is used on a site. Bulldozers and other heavy-tracked construction equipment generate approximately 92 VdB of ground-borne vibration when measured at 50 ft, based on the *Transit Noise and Vibration Impact Assessment* (FTA, May 2006). This level of ground-borne vibration exceeds the threshold of human perception, which is approximately 67 VdB. Based on the California Department of Transportation's (Caltrans) *Transportation Related Earthborne Vibration, Technical Advisory* (Rudy Hendricks, July 24, 1992), the vibration level at 100 ft is approximately 6 VdB lower than the vibration level at 50 ft. Vibration at 200 ft from the source is more than 6 VdB lower than the vibration level at 100 ft, or more than 12 VdB lower than the vibration level at 50 ft. Therefore, receptors at 100 ft and 200 ft from the construction activity may be exposed to ground-borne vibration up to 86 VdB and 80 VdB, respectively. Although this range of ground-borne vibration levels would result in potential annoyance at nearby receptors within these distances from construction activity, it would not cause any damage to buildings. Construction vibration, similar to vibration from other sources, would not have any significant effects on outdoor activities, such as those in the outdoor play area in the park adjacent to the project site.

Construction of future projects associated with implementation of the LUE/UDE could result in the generation of ground-borne vibration. However, Chapter 8.80 of the City's Noise Ordinance limits the operation of any device that creates vibration above the vibration perception threshold of 67 VdB. Any construction activities associated with implementation of the LUE/UDE would be required to comply with the Noise Ordinance requirements. Therefore, impacts from typical construction methods would not result in the exposure of sensitive receptors to excessive ground-borne vibration or noise levels, and no mitigation is required.

As noted in the *Noise Impact Analysis* (LSA, March 2016), potential ground-borne vibration and noise impacts may also occur from rail activity because the LUE/UDE would include TOD along the Metro Blue Line. Vibration levels inside proposed buildings would depend on the existing vibration levels and proposed building construction techniques. Based on the methodology for a "general vibration assessment" in the FTA guidance manual, vibration levels inside buildings are typically less than the vibration levels in the ground.[1] It is possible the existing ground-borne vibration levels would exceed maximum acceptable vibration levels for residential and institutional land uses. Impacts associated with ground-borne vibration and noise produced by rail rapid transit, such as the Metro Blue Line, are usually limited to areas within approximately 200 ft of the vibration source.[2] To ensure new land uses adjacent to the rail line are not exposed to excessive ground-borne vibration, LU Policy 15-6 has been incorporated into the LUE of the General Plan. Specifically, LU Policy 15-6 requires that new development within 200 ft of the Metro rail line conduct a vibration assessment demonstrating that FTA Ground-borne Vibration Impact Criteria for the proposed land use are not exceeded. If necessary, the vibration assessment shall also demonstrate project modifications required to ensure criteria compliance.

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1 Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* May.
2 Ibid.

As discussed above, implementation of the LUE and UDE would include policies and strategies that protect sensitive receptors from vibration in excess of acceptable levels. Therefore, implementation of the LUE/UDE would not expose persons to excessive ground-borne vibration and/or ground-borne noise levels, and no mitigation is required.

Threshold 4.5.3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

Less than Significant Impact.

Long-Term Off-Site Traffic Noise Impacts. The *Noise Impact Analysis* (Appendix C) prepared for the proposed project evaluated traffic-related noise conditions along the roadway segments that are considered to be major noise-contributing sources. Potential sources of a permanent increase in ambient noise include increases associated with an increase in traffic on roadways in the plan area. It is projected that traffic volumes on some streets within the City would increase due to the growth envisioned in the LUE/UDE. This increase in traffic volumes would result in greater traffic noise levels compared to existing conditions.

The significance criteria define a significant impact as occurring if the project would result in a substantial (3 dBA or greater) permanent increase in ambient noise levels in the project vicinity above levels existing without the project. For traffic noise to increase by 3 dBA, traffic volumes would have to double. As previously identified, noise increases of 3 dBA or more are generally considered to be the smallest increases in noise levels readily perceptible in suburban or urban outdoor environments. The *Traffic Impact Analysis* (LSA, March 2016) (Appendix E) prepared for the project indicates that most Major Areas of Change would result in an increase in average daily trips. The SEADIP area would experience the highest average daily trip increase (29 percent). The anticipated increase in traffic volumes associated with the LUE/UDE would be less than a doubling of traffic, resulting in a noise increase of less than 3 dBA; therefore, implementation of the LUE/UDE is not expected to result in the generation of substantial traffic noise increases. Thus, implementation of the LUE/UDE would not result in a permanent increase in ambient noise levels, and no mitigation is required.

Threshold 4.5.4: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

Less than Significant Impact. As described in Threshold 4.5.1, maximum combined noise levels from proposed project-related construction activities could reach up to 91 dBA L_{max} at 50 ft for limited times during future construction. As concluded above, construction noise is permitted by the City's Municipal Code when activities occur between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on Saturdays. No construction would be permitted on Sundays. Construction activities associated with development allowed under the LUE would be subject to compliance with the City's Noise Ordinance to ensure that noise impacts from construction sources are reduced to a less than significant level. No mitigation is required.

Threshold 4.5.5: **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, expose people residing or working in the project area to excessive noise levels;**

OR

Threshold 4.5.6: **For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels**

No Impact. As previously described, aircraft noise in the City of Long Beach is primarily related to aircraft operations at Long Beach Airport, Los Angeles International Airport, and John Wayne Airport. Long Beach Airport is located centrally within the City, approximately 3 miles northeast of the Downtown area. As stated in the Municipal Code, sensitive receptors are not permitted within the 65 dBA CNEL contour of Long Beach Airport. Implementation of the LUE/UDE would locate business parks and airport-related land uses surrounding the airport and would not introduce any new noise-sensitive receptors within the 65 dBA noise contour. Therefore, the LUE/UDE would not result in the exposure of sensitive receptors to excessive noise levels from aircraft noise sources. No mitigation measures are required.

4.5.9 Mitigation Measures

In the absence of a significant impact, no mitigation measures have been identified for noise.

4.5.10 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects. A cumulative noise or vibration impact would occur if multiple sources of noise and vibration combine to create impacts in close proximity to a sensitive receptor. Therefore, the cumulative area for noise impacts is the City's General Plan planning area and any sensitive receptors within the planning area.

The proposed project would not create a cumulatively considerable contribution to regional noise conditions. For traffic noise to increase by 3 dBA, traffic volumes would have to double. Implementation of the proposed project would not result in a doubling of average daily trips. Therefore, implementation of the LUE/UDE would not result in a 3 dBA increase in traffic noise levels in the City and would not generate a significant impact under cumulative noise conditions.

Additionally, as shown in the traffic noise impact discussion above, implementation of the LUE/UDE policies and land use strategies would require the City to consider noise and land use compatibility issues when evaluating individual development proposals. As described above, implementation of the LUE/UDE would not result in a substantial cumulative increase in noise. Therefore, under cumulative conditions, implementation of the proposed General Plan LUE/UDE would result in a less than significant cumulative impact.

4.5.11 Level of Significance After Mitigation

The proposed project would not result in significant unavoidable adverse impacts related to noise or vibration.

4.6 POPULATION AND HOUSING

4.6.1 Introduction

This section provides a discussion of the existing population, housing, and employment characteristics in the City of Long Beach (City), as well as an analysis of potential impacts that could result from implementation of the proposed General Plan Land Use and Urban Design Elements Project (proposed project) with regard to section topic. This section is based on sources of demographic information provided by agencies including the Southern California Association of Government (SCAG), the State of California Department of Finance (DOF), the United States Bureau of the Census (U.S. Census Bureau), the 2013–2021 Housing Element (2014) of the City's General Plan, the Draft Land Use Element (August 2016) (Appendix F), as well as the City's own records.

4.6.2 Methodology

The effects of the proposed project are evaluated below to determine whether they would result in a significant adverse impact on the environment. Using demographic information provided by agencies and the City, this section compares existing population, housing characteristics, and employment, goals, and projections to the potential impacts of the proposed project and evaluates consistency with agency information and requirements. Although socioeconomic information and impact analysis play a role in environmental impact assessment under the California Environmental Quality Act (CEQA), social and economic changes resulting from a project are not treated as significant effects on the environment (*State CEQA Guidelines,* Section 15064[e]). Socioeconomic data have four principal uses under CEQA:

- When a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. In such cases, the environmental analysis must include a discussion of economic and social changes, but only in sufficient detail to illuminate the chain of cause and effect, with the focus of the analysis being on the physical changes occurring at the end of the process.
- If a proposed project's physical changes in turn cause social or economic changes, then the magnitude of the social or economic changes can be used to determine the significance of the physical changes.
- In determining the feasibility of the proposed measures to mitigate significant effects identified in an Environmental Impact Report (EIR), the lead agency must consider social, economic, and housing factors along with technical and environmental factors. If this information is not entered into the public record in some other manner, it can be included in an EIR.
- CEQA allows economic or social information to be included in an EIR or another form. Such information can be related directly to the uses described in the previous three bullet points.

The impact discussion focuses on the direct growth in population and housing associated with the proposed project. The proposed project's potential to induce population growth is also assessed in terms of the creations of new employment opportunities and an evaluation of potential impacts to the city's job-to-housing ratio. While these impacts would not cause a direct physical change to the environment, it is important to understand the proposed project's effect on population and housing for the following reasons:

- Population growth generated by the proposed project could create indirect impacts, such as increased demand for public services, traffic, air quality, and noise. CEQA requires the evaluation of indirect impacts. These impacts are addressed in the respective sections of this Draft EIR.

- Understanding the impacts to population and housing from project implementation will help assess the adequacy of the policies intended to provide a balance between employment growth and the availability of housing to meet the needs of the current and future workers.

- Understanding the impacts to housing demand from project implementation will help address the adequacy of local policies intended to provide additional affordable housing for low-income and moderate-income households.

4.6.3 Existing Environmental Setting

Population, Housing, and Employment Trends in the City and County. The planning area includes the entire 50 square miles within the City's jurisdictional limits. The City is characterized by a variety of landscapes including waterfront and port facilities, recreational spaces, residential neighborhoods, and an urban downtown area.

In its existing condition, the City is largely urbanized and includes a range of housing types and land uses that provide housing and employment opportunities to its residents. It is anticipated that the proposed project would allow for these existing uses to remain while also allowing for future development to accommodate future employment and housing growth.

SCAG is a federally designated Metropolitan Planning Organization (MPO)[1] representing six counties (Ventura, Orange, San Bernardino, Riverside, Imperial, and Los Angeles). The six-county SCAG planning area encompasses a population exceeding 18 million persons in an area of more than 38,000 square miles. The City and County of Los Angeles are located within the SCAG planning area. SCAG divides its six-county planning area into 15 subregions. The City is located within the Gateway Cities Council of Governments subregion.[2] In 2012-2035, SCAG prepared a regional growth forecast that took into account a combination of recent and past trends, reasonable technical assumptions, and local or regional growth policies in an effort to predict the most likely growth scenario for the Southern California region in the future. SCAG is currently in the process of updating and replacing existing regional forecast assumptions with updated 2016–2040 projections. In December 2014, SCAG released a draft of the 2016-2040 Regional Transportation Plan (RTP) Growth Forecast for public review. The 2016–2040 RTP is meant to provide a common foundation for regional and local planning, policymaking, and infrastructure provision within the SCAG region as part of the RTP formulation process, which is closely interlinked with the region's Sustainable Communities Strategy (SCS) and Regional Housing Needs Assessment (RHNA).

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[1] An MPO is a federally mandated and federally funded transportation policymaking organization in the United States that is made up of representatives from local governments and governmental transportation authorities. In 1962, the United States Congress passed legislation that required the formation of a Metropolitan Planning Organization for any urbanized area with a population greater than 50,000.

[2] Gateway Cities Council of Governments. Gateway Cities Member Agency Contacts. Website: http://www.gatewaycog.org/who-we-are/gateway-cities-member-agency-contacts/.

While the 2012-2035 is the most recently adopted RTP, growth projections for the City and SCAG provided in the 2016–2040 RTP are included utilized for purposes of this analysis, as the planning period in the 2016-2040 RTP is congruent with the planning period for the proposed project. These growth projections are used as a reference point for discussing population, housing, and employment growth throughout this section of the Draft EIR.

Population. Currently, the City of Long Beach is the seventh largest city in the State of California. According to the population estimates by the California DOF Demographic Research Unit, the Estimated 2015 population for the City and County of Los Angeles were 472,779 and 10,136,559 persons, respectively.[1]

As shown below in Tables 4.6.A and 4.6.B, according to the growth forecast by SCAG and the City, the City's population is anticipated to grow by approximately 3.9 percent (approximately 0.14 percent per year) between 2012 and 2040. Comparatively, the County is expected to experience a higher increase of approximately 16.03 percent (approximately 0.57 percent per year) between 2012 and 2040.

Table 4.6.A: Population, Housing, and Employment Forecasts for the City of Long Beach

	2012	2040	Change 2012–2040	% Change 2012–2040	# of Years	Percentage of Change/Year
Total Population	466,300	484,500	18,200	3.9%	28	0.14%
Total Households[1]	163,800	175,500	11,700	7.14%	28	0.26%
Total Employment	153,200	181,700	28,500	18.6%	28	0.66%

Source: City of Long Beach General Plan Draft Land Use Element (August 2016) (Appendix F) and SCAG, Draft 2016 RTP/SCS Growth Forecast by Jurisdiction.

[1] SCAG's regional growth forecast utilizes "households," not housing units. As defined by the U. S. Census Bureau, "households" are equivalent to "occupied dwelling units."

Table 4.6.B: Population, Housing, and Employment Forecasts for the County of Los Angeles

	2012	2040	Change 2012–2040	% Change 2012–2040	# of Years	Percentage of Change/Year
Total Population	9,923,000	11,514,000	1,591,000	16.03%	28	0.57%
Total Households[1]	3,257,000	3,946,000	689,000	21.15%	28	0.76%
Total Employment	4,246,000	5,226,000	980,000	23.08%	28	0.82%

Source: SCAG, Draft 2016 RTP/SCS Growth Forecast by Jurisdiction.
RTP = Regional Transportation Plan
SCAG = Southern California Association of Governments

[1] SCAG's regional growth forecast utilizes "households," not housing units. As defined by the U. S. Census Bureau, "households" are equivalent to "occupied dwelling units."

[1] California Department of Finance. Report E-1 Population Estimates for Cities, Counties, and the State. Website: http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php (accessed December 22, 2015).

As identified in Tables 4.6.A and 4.6.B, recent growth trends projected by SCAG suggest that population, housing, and employment in both the City and County will increase through 2040. These projected increases in population are likely attributed to the net migration of individuals moving into the region due to the recent increase in job availability.

Age Characteristics. A City's age distribution often shapes its housing demand because different age groups prefer different types of housing. Specifically, age groups are marked by distinct differences in lifestyle, family type, housing preferences, and income levels. According to the most recent 2010 Census, the median age in the City is 33.2 years old, which is consistent with County, State, and national trends. Table 4.6.C, below, shows the age characteristics of residents in both the City and the County.

Table 4.6.C: Long Beach and Los Angeles County Age Characteristics (2010)

	Percentage Under 18 Years	Percentage Between 18 and 34 Years	Percentage Between 35 and 64 Years	Percentage Over 64 Years
Long Beach	24.9	27.6	38.2	9.3
County of Los Angeles	24.5	25.8	38.9	10.9

Source: U.S. Census Bureau (2010).

As shown above in Table 4.6.C, the City and County have similar proportions of residents under the age of 18 (24.9 percent and 24.5 percent, respectively). Compared to the County, the City has a slightly higher percentage of residents between the ages of 18 and 34 (27.6 percent and 25.8 percent, respectively). The City and County have similar proportions of residents between the ages of 35 to 64 (38.2 percent, and 38.9 percent, respectively). The County has a slightly higher percentage of residents older than age 64 (10.9 percent) than the City (9.3 percent).

According to the 2013-2021 Housing Element, the number of residents under the age of 18 increased over the past three decades from 1980 to 2010, but began to decline from 2000 to 2010 in association with the stagnant growth of the City. The senior population has steadily decreased over time; however, the senior population is expected to significantly increase through the year 2020 given the large number of middle age residents currently residing in the City.

Housing Units. As previously shown in Table 4.6.A, according to SCAG's growth forecast, the City is anticipated to experience an approximately 7.14 percent (approximately 0.26 percent per year) increase in housing units between 2012 and 2040. The County is anticipated to experience a higher increase in housing units than the City at approximately 21.15 percent (approximately 0.76 percent per year) between 2012 and 2040.

Housing Stock Characteristics. Housing in the City includes a wide range of housing types, including single-family homes, larger multi-family buildings, duplexes/triplexes/fourplexes, townhomes, condominiums, and mobile homes. According to the most recent U.S. Census, the City had an estimated 163,351 housing units as of 2010. The City's housing stock has continued to grow,

and as mentioned above, is expected to steadily increase through 2020. According to the City's 2013–2021 Housing Element and SCAG's growth forecasts for the City, single-family units comprise 44 percent, or 76,776 units, (refer to Table 3.C in Chapter 3.0, Project Description) of the City's existing housing stock. The majority are single-family detached units, with the balance composed of attached units, such as duplexes, apartments, and condominium units. The remainder of the City's current housing stock consists of multi-family units and mobile homes (99,355 units), with the mobile homes accounting for only 1 percent of the total housing stock.

Although a diverse housing stock ensures that all households have an opportunity to find housing that is suited for their lifestyle needs, it is also important to consider the age of a community's housing stock as an overall indicator of existing housing conditions. For example, housing over 30 years in age likely requires rehabilitation needs and housing over the age of 50 years in age may require total building replacement. According to the City's 2013-2021 Housing Element, approximately 22.1 percent of the City's housing stock is 30 to 50 years old and approximately 58 percent of the City's housing stock is 50 years or older.

Employment. As previously shown in Table 4.6.A, according to SCAG's growth forecasts, the percentage of residents employed in the City is anticipated to increase by approximately 18.6 percent between 2012 and 2040 (approximately 0.66 percent per year). The County's employment is also anticipated to increase, but to a slightly greater degree, at 23.08 percent between 2012 and 2040 (approximately 0.82 percent per year). As of January 2016, the City had a labor force of 238,000 and the County had a labor force of 4,973,600, with approximately 15,500 and 296,100 people unemployed, respectively.[1] The January 2016 unemployment rate was 6.5 percent for the City and 5.9 percent for the County.[2]

The City is home to small businesses and larger corporations that represent several employment sectors. Although the City's economy has historically been comprised of aerospace and manufacturing industries, over the last 25 years the City's economy has transitioned to a knowledge-based economy with the primary employment sectors consisting of medical and educational businesses, as illustrated by Table 4.6.D, largest employers in the City of Long Beach.

[1] California Employment Development Department. 2015. Monthly Labor Force and Unemployment Rate for Cities and Census Designated Places, Los Angeles County, January 2016. Website: http://www.labormarketinfo.edd.ca.gov/CES/Labor_Force_Unemployment_Data_for_Cities_and_Census_Areas.html (accessed on January 22, 2016).

[2] Ibid.

Table 4.6.D: Long Beach's Largest Employers (2012)

Rank	Employer	Number of Employees
1	Long Beach Unified School District (LBUSD)	11,334
2	City of Long Beach	5,758[1]
3	Long Beach Memorial Medical Center	5,743
4	The Boeing Company	5,186
5	California State University, Long Beach (CSULB)	3,527
6	Veteran Affairs Medical Center	2,200
7	Long Beach City College	1,785
8	California State University Long Beach Foundation	1,500
9	St. Mary Medical Center	1,432
10	United States Postal Service	1,306

Source: Economic Research Group, Department of Development Services, State of California Employment Development Department Labor 2012; and City of Long Beach Comprehensive Annual Finance Report (2012).

[1] Includes season and part time staff.

4.6.4 Regulatory Setting

Federal Policies and Regulations. There are no federal policies or regulations that are applicable to the proposed project with respect to population, housing, and employment.

State Policies and Regulations.

Regional Housing Needs Assessment. California General Plan Law (Government Code Section 65580 et seq.) requires each city and county to have land zoned to accommodate its fair share of the regional housing need. Housing unit construction goals are set by the State Department of Housing and Community Development (HCD) and allocated to cities through regional planning agencies such as SCAG. This share for the SCAG region is known as the Regional Housing Needs Assessment (RHNA). The RHNA is not a mandate to construct the full number of housing units for the region; rather, the RHNA allocation process establishes short-term construction needs and the fair distribution of housing needs among income groups.

HCD determined that the projected housing need for the Southern California region (including the Counties of Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial) is 412,721 new housing units for the 2014–2021 planning period. SCAG allocated this projected growth to the various cities and unincorporated county areas in the SCAG region, creating the RHNA. The RHNA is divided into four income group categories: extremely/very low, low, moderate, and above moderate income.

Future housing needs refers to the proportion of the region's future housing needs allocated to a community. Each jurisdiction's future housing need is calculated in terms of four factors: (1) the number of units needed to accommodate forecasted global household growth; (2) the number of units needed to replace demolition due to attrition in the housing stock (i.e., fire damage, obsolescence, and conversion to non-housing uses); (3) maintenance of an ideal vacancy rate for

a well-functioning housing market; and (4) an adjustment to avoid an overconcentration of lower-income households in any one jurisdiction.

As shown in Table 4.6.E, the City's fair share for the planning period between 2014 and 2021 (the last adopted RHNA period) was established by SCAG at 7,048 residential units. The RHNA target number was based on projected household growth and the resultant need for construction of additional housing units. This 7,048-residential-unit share was divided into five income groups according to median family income (MFI).

Table 4.6.E: City of Long Beach Regional Housing Need Allocation (2014–2021)

Income Group	Percentage of County AMI	RHNA 2014–2021 Housing Unit Allocation	Proportion to Total RHNA Allocation
Extremely	0–30	886	12 %
Very Low	31–50	887	13 %
Low	51–80	1,066	15 %
Moderate	81-120	1,170	17 %
Above Moderate	120+	3,039	43 %
Total	**-**	**7,048**	**100 %**

Source: City of Long Beach 2013–2021 Housing Element.
AMI = Area Median Income

As noted below, California State law requires local jurisdictions to update their General Plan Housing Element every 5 years due to the fact that housing needs are recognized as a statewide concern. Pursuant to State law, the Housing Element must identify the City's housing needs, sites that can accommodate those needs, and policies to assure that the housing units necessary to meet those needs could be provided. Consistent with the 5th Cycle RHNA requirements for 2014-2021, the City has updated their 2013-2014 General Plan Housing Element. According to the 2013-2021 Housing Element, the City would be able to accommodate the 2014-2021 RHNA allocation with the capacity to accommodate 7,044 new units.

Local and Regional Policies and Regulations.

Southern California Association of Governments. As stated above, SCAG is a federally designated MPO representing six counties (Ventura, Orange, San Bernardino, Riverside, Imperial, and Los Angeles) and more than 18 million residents. SCAG divides its six-county planning area into 15 subregions. The planning area is located within the Gateway Cities Council of Governments subregion.

As the designated MPO, SCAG is mandated by federal and State law to research and design plans for transportation, growth management, and hazardous waste management, as well as a regional growth forecast that is the foundation for these plans and regional air quality plans developed by the South Coast Air Quality Management District (SCAQMD). SCAG prepares several plans to address regional growth, including the Regional Comprehensive Plan, the Southern California Sustainability Planning Grant (formerly known as the Compass Growth Vision), the RHNA, the

RTP, the Regional Transportation Improvement Program, and annual State of the Region reports to measure progress toward achieving regional planning goals and objectives.

SCAG's policy direction is guided by the 86-member official governing board known as the Regional Council. The Regional Council is composed of 67 districts that include an elected representative of one or more cities of approximately equal population levels that have a geographic community of interest (except the City of Long Beach, which has two representatives). Additionally, membership on SCAG's Regional Council includes one representative from each county's Board of Supervisors (except the County of Los Angeles, which has two representatives). SCAG's Regional Council also includes one representative of the Southern California Native American Tribal Governments. All members of the Los Angeles City Council are considered members of the SCAG Regional Council, and the Mayor of the City of Los Angeles serves as the Los Angeles City At-Large Representative.

Regional Comprehensive Plan. In October 2008, SCAG adopted the RCP for the purpose of providing a comprehensive strategic plan for defining and solving housing, traffic, water, air quality, and other regional challenges. The 2008 RCP has two primary objectives in implementing this strategic plan: (1) integrating transportation, land use, and air quality planning approaches, and (2) outlining key roles for public and private sector stakeholders to implement reasonable policies regarding transportation, land use, and air quality approaches. While the 2008 RCP outlines several policies to inform local decision-makers within the SCAG region with respect to policy and planning decisions, these policies are considered recommendations and are not mandated by law.

With respect to land use policy, the 2008 RCP includes a Land Use and Housing Chapter that aims to link land use and transportation planning decisions to the projected population and economic growth in the SCAG region. Specifically, the Land Use and Housing Chapter of the 2008 RCP promotes sustainable planning for land use and housing in the SCAG region by maximizing the efficiency of the existing circulation network, providing a greater variety in housing types, promoting a diverse and growing economy, and protecting the existing natural environment. As previously stated, while the 2008 RCP identifies 2 Percent Strategy areas as part of the Compass Blueprint growth vision, these areas have since been updated and replaced by the High Quality Transit Areas (HQTAs) identified in the 2016-2040 RTP/SCS in an effort to implement the Sustainability Planning Grant Program.

Growth Projections. The regional growth forecasts undertaken by SCAG in its RCP are developed for two planning horizons, 2020 and 2035.The projected growth in population, household, and employment is the data that is relied upon during development of SCAG's RTP, SCS, and RHNA.

City of Long Beach General Plan 2013-2021 Housing Element. The City's Housing Element reflects the State's housing unit construction goals as allocated by SCAG in the RHNA for the years between 2014 and 2021. The Housing Element analyzes current housing needs, estimates future housing needs, considers potential sites for additional housing, and establishes goals,

policies, and programs in response to both current and future housing needs. The following housing goals and policies in the City's Housing Element are applicable to the proposed project.

Goal 1: Provide Housing Assistance and Preserve Publicly Assisted Units

Policy 1.6: Seek to preserve the existing stock of single room occupancy housing as a source of permanent, affordable housing. Work to identify additional SRO[1] housing opportunities.

Goal 2: Address the Unique Housing Needs of Special Needs Residents

Policy 2.4: Encourage universal design of housing products and environments, making them usable by a wide range of people with different physical and mental abilities.

Policy 2.5: Integrate and disperse special needs housing within the community and in close proximity to transit and public services.

Goal 3: Retain and Improve the Quality of Existing Housing and Neighborhoods

Policy 3.1: Encourage the maintenance and improvement of the housing stock and the neighborhood context.

Policy 3.2: Preserve and protect the character of established neighborhoods, with an emphasis on single-family neighborhoods and those beginning to decline.

Policy 3.4: Promote, where appropriate, the revitalization and/or rehabilitation of residential structures that are substandard or have fallen into disrepair.

Policy 3.6: Continue to preserve and maintain the City's historical and architecturally significant buildings and neighborhoods by establishing and maintaining historic landmarks and districts.

Goal 4: Provide Increased Opportunities for the Construction of High Quality Housing

Policy 4.1: Provide adequate sites, zoned at the appropriate densities and development standards, to facilitate the housing production and affordability goals set forth in the 2014-2021 RHNA.

Policy 4.2: Encourage a balance of rental and homeownership opportunities, including high quality apartments, townhomes, condominiums, and single

[1] Single Room Occupancy

family homes to accommodate the housing needs of all socioeconomic segments of the community, including large families.

Policy 4.5: Encourage residential development along transit corridors, in the downtown and close to employment, transportation and activity centers; and encourage infill and mixed-use developments in designated districts.

Policy 4.8: Support the development of housing that is technology-friendly and designed to meet the housing needs of the emerging information and technology industry workforce.

Policy 4.10: Promote mixed-generation housing that accommodates both families and elderly households.

Goal 5: Mitigate Government Constraints to Housing Investment and Affordability

Policy 5.3: Utilize Planned Developments (PD), form-based zoning and other planning tools to allow flexible residential development standards in designated areas.

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

The following proposed Goals, Strategies, and Policies are applicable to the analysis of Population and Housing:

Land Use Element.

Goal No. 2: Stimulate Continuous Economic Development and Job Growth

LU Policy 3-1: Implement land use regulations and economic development strategies that will help diversify the local economy and expand job growth. Accommodate a mix of industries in Long Beach, including high technology, telecommunications, aerospace, green technology, renewable energy, healthcare, higher education, manufacturing, port and shipping, professional services, restaurants, entertainment and the film industry.

LU Policy 3-5: Foster home-based and incubator businesses.

Goal No. 3: Accommodate Strategic Growth and Change

STRATEGY No. 6: Implement the major areas of change identified in [the] Land Use Plan.

LU Policy 6-7: Continue to develop the downtown into a city center that provides compact development, accommodates new growth, creates a walkable urban

environment, allows for diversified businesses and is easily accessible to surrounding neighborhoods and regional facilities.

LU Policy 6-9: Focus infill development in the downtown, Multi-Family residential neighborhoods and transit-oriented development areas, and along specific corridors.

LU Policy 6-12: Develop and implement a plan for SEADIP that establishes the area as an important gateway, builds on residential neighborhoods that are complemented by businesses and commercial services, protects wetlands and local coastal habitat and creates attractive streetscapes with buildings designed at appropriate scale and form.

Goal No. 5: Diversify Housing Opportunities

LU Policy 11-1: Allow a variety of housing types in new residential developments with the goal of establishing new opportunities for persons of varied income ranges, ages, lifestyles and family needs.

LU Policy 11-2: Allow new high-density residential growth to occur within Multi-Family neighborhoods in a manner that is context-sensitive and compatible to surrounding uses and buildings and provides a range of housing types and options that meets the needs of Long Beach residents.

LU Policy 11-3: Encourage major employers and higher education centers to participate in and contribute to planned housing development activities near their facilities.

LU Policy 11-4: Establish clear rules and locations for special housing types, such as congregate care, assisted living, senior housing, student housing, housing for temporary workers and housing with supportive services.

LU Policy 12-1: Promote an equitable distribution of housing types for all income and various cultural groups throughout the City; avoid creating concentrations of below-market-rate housing in underserved and low-income neighborhoods.

LU Policy 12-2: Provide new housing opportunities in neighborhood-serving centers and corridors, within transit-oriented development areas and downtown.

LU Policy 12-3: Provide more opportunities for college student housing in the east Traffic Circle neighborhood.

LU-M-42: Implement the Housing Element.

Urban Design Element..

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

Policy UD 5-2: Encourage provision of housing opportunities, services, and amenities for all income and age groups with opportunities to age in place.

Strategy No. 16: "Complete the neighborhood" by filling in gaps (e.g. functional needs like housing, new or missing services, new public amenities or services, healthy food options, flexible uses on larger streets and fostering a safe walkable environment within each PlaceType.).

Policy UD 16-1: Provide opportunities for mixed use development within focused locations (areas of change and target areas) to provide opportunities for live-work, affordable and mixed-income housing, and commercial and residential mixes in a medium to high density setting.

4.6.5 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *State CEQA Guidelines* and the City's *State CEQA Thresholds of Significance*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on population, housing, and employment if it would:

Threshold 4.6.1: Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);

Threshold 4.6.2: Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or

Threshold 4.6.3: Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Approval of the proposed project is considered a policy/planning action and does not include any physical improvements. Therefore, the Initial Study/Notice of Preparation (IS/NOP) (Appendix A) determined that the proposed project would result in less than significant impacts related to the displacement of substantial numbers of existing housing or people, necessitating the need for replacement housing elsewhere (Thresholds 4.6.2 and 4.6.3). As a result, these thresholds are not analyzed further in this Draft EIR.

4.6.6 Standard Conditions and Project Design Features

The proposed project would not be required to adhere to any standard conditions and would not include any project design features related to population and housing.

4.6.7 Project Impacts

Threshold 4.6.1: Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)

Less than Significant Impact. The *State CEQA Guidelines* identify a project as growth-inducing if it would foster economic or population growth or the construction of additional housing either directly or indirectly, in the surrounding environment (*State CEQA Guidelines* Section15126.2(d)). New employees of commercial or industrial development and new population from residential development represent direct forms of growth. These direct forms of growth can have a secondary effect of expanding the size of local markets and inducing additional economic activity in the area. Direct employment impacts reflect the initial or first-round increases in jobs and wages that result from the creation of on-site jobs. Indirect impacts occurring as a consequence of the direct impacts, elsewhere within the project area, may result from the production of goods and services required to support the proposed on-site uses, and/or the production of goods and services required to meet consumer demand generated by wages paid to new employees.

A project could also indirectly induce growth by reducing or removing barriers to growth or by creating a condition that attracts additional population or new economic activity. According to the *State CEQA Guidelines,* Section 15126.2(d), "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population in excess of what is assumed in pertinent master plans, land use plans, or in projections made by regional planning agencies (e.g., SCAG). Significant growth impacts could also occur if the project provides infrastructure or service capacity to accommodate growth beyond the levels currently permitted by local or regional plans and policies. In general, growth induced by a project is considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public utilities, or if it can be demonstrated that the potential growth significantly affects the environment in some other way.

The City's population has grown over the past several decades. As identified in Table 4.6.A, City's population is estimated to reach nearly 485,000 persons by 2040. The proposed project could result in the development of approximately 175,500 dwelling units, or an increase of 11,700 units. Utilizing the DOF factor of 3.03 people per household,[1] these residential uses would result in a population increase in the City of up to 531,765 people.[2] However, it should be noted that this projection assumes every resident was a new citizen of the City, and therefore represents an over-estimation of the projected population increase. Further, in developing the socioeconomic projections for the City, SCAG coordinated with the City to develop a more precise estimate of the City's population in 2040. Therefore, the estimated population of 484,500 represents a more accurate representation of the City's projected population base in the year 2040.

As previously noted, an additional 7,048 housing units are required to meet the City's 2014 and 2021 RHNA target. The City's 2013-2021 Housing Element was adopted as an amendment to the City's

[1] State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2015, with 2010 Benchmark.* Sacramento, California, January 2015.

[2] 3.03 people/household × 175,500 dwelling units = 531,880 people.

General Plan on January 7, 2014. The Housing Element contains policies designed to meet the housing needs of the City. State law requires that each jurisdiction evaluate its housing element every 5 years to determine its effectiveness in achieving City and State goals and objectives, and to adopt an Updated Housing Element that reflects the results of this evaluation. The Housing Element contains a detailed program to assure the adequate provision of housing for all economic segments of the City's population. Further, California Government Code requires that General Plans contain an integrated, consistent set of goals and policies. Therefore, the Housing Element is shaped by development policies contained in the Land Use Element, which establishes the location, type, intensity, and distribution of land uses in the City.

Implementation of the policies in the proposed LUE will achieve the goals outlined in the current Housing Element. Subsequent amendments to the General Plan will be reviewed to ensure consistency is maintained between future proposed General Plan Amendments and the updated Housing Element. Similarly, future updated Housing Elements and implementation of their policies will ensure that adequate housing opportunities are provided to all City residents. As identified in Section 4.4, Land Use and Planning, approval of the proposed project would ensure consistency with the City's General Plan and would establish new PlaceTypes in place of traditional land use designations established in the current LUE. As part of these proposed PlaceTypes, the project would allow for the increased intensity and density of mixed-use and residential uses in the City that would facilitate the future development of approximately 11,700 new housing units through the year 2040. As described in the City's 2013-2021 Housing Element, the City is anticipated to develop 7,044 of its 7,048 housing unit RHNA requirement by the year 2021. As such, approval of the proposed project would further the City's objective in allowing for the construction of sufficient new housing equal to or in excess of the RHNA requirement for the 2013-2021 Housing Element cycle. Furthermore, the continued implementation of the existing Housing Element policies and applicable City, Regional, and State regulations would ensure the City would meet its RHNA requirements and would reduce potential impacts associated with the provision of adequate housing opportunities with implementation of the proposed project to a less than significant level.

As previously stated, a project could indirectly induce growth at the local level by increasing the demand for additional goods and services associated with the increase in project population, thereby reducing or removing the barriers to growth. This can occur in areas where population growth results in an increased demand for service and commodity markets responding to the increased growth in population. However, this type of growth is a regional phenomenon resulting from the introduction of a major employment center or a significant housing project. Additional commercial uses may be drawn to the area by the increased number or residents as a result of the project; however it is expected that any such development associated with the proposed project would occur consistent with planned growth in the City's General Plan.

The proposed project would allow for a significant increase in population, employment, and housing in the City of Long Beach through the year 2040; however, this growth would be consistent with SCAG's regional growth forecasts for each of these topic areas for the same horizon year. Therefore, the project's growth-inducing potential would be less than significant, as it would not foster growth in excess of what is assumed in pertinent master plans, land use plans, or in projections made by regional planning agencies (e.g., SCAG). Further, because the proposed project would facilitate an increase in non-residential uses, the proposed project is anticipated to meet any increased demands for additional goods and services associated with the project-related increase in population.

The "jobs-to-housing ratio" measures the extent to which job opportunities in a given geographic area are sufficient to meet the employment needs of area residents. A sub-area of the region with a jobs-to-housing ratio that is lower than the standard of the region would be considered a "jobs poor" area, indicating that many of the residents must commute to places of employment outside of that sub-area. The projected 2040 jobs-to-housing ratios for the City, subregion (Los Angeles County), and SCAG region are 1.04, 1.32, and 1.33, respectively (Table 4.6.F). As the projected 2040 jobs-to-housing ratio for the City is lower than both the subregional and regional ratio, the City is "jobs poor," meaning it is projected that more residents will be required to commute outside the City for employment in 2040.

Table 4.6.F: Projected Future Jobs-to-Housing Ratios

Geographic Area	Employment in 2040	Number of Housing Units in 2040	2040 Jobs-to-Housing Ratio
City of Long Beach	181,700	175,500	1.04
Los Angeles County	5,226,000	3,946,000	1.32
SCAG Region	9,872,000	7,412,000	1.33

Source: City of Long Beach General Plan Draft Land Use Element (August 2016) (Appendix F); SCAG, Draft 2016 RTP/SCS Growth Forecast. Website: http://www.scag.ca.gov/forecast/downloads/excel/2012AdoptedGrowthForecast.xls (accessed September 24, 2015).
SCAG = Southern California Association of Governments

The extent to which the new jobs created by a project are filled by existing residents is a factor that tends to reduce the growth-related effect of a project. While the proposed project is considered a planning/policy action and does not include any physical improvements or projects at this time, future development facilitated by project approval would create a number of construction jobs that would be temporary or seasonal and specific to the variety of construction activities. This workforce would include a variety of craftspeople, such as grading equipment operators, cement finishers, ironworks, welders, carpenters, electricians, painters, and laborers. These short-term positions are anticipated to be filled by workers who, for the most part, reside in the project area. Therefore, construction of future projects facilitated by project approval will not generate a permanent increase in population within the project area.

Implementation of future projects facilitated by project approval would create a number of permanent jobs associated with new development, particularly within the Major Areas of Change. The new employment opportunities resulting from development of the proposed uses would maintain the City's current jobs-to-housing ratio by providing jobs to local residents. While the place of residence of the persons accepting employment provided by the proposed uses is uncertain, due to the City's projected jobs-to-housing ratio, it is reasonable that a large percentage of these jobs would be filled by persons already living within the City or project area; therefore, no significant increase in population of the City is anticipated to result from the development or operation of future development facilitated by the proposed project.

The planning area encompasses the entire area within the City's jurisdictional limits. As such, the majority of areas proposed for new development under the LUE contain the necessary public utilities (water, recycled water, sewer, storm drainage, electrical, natural gas, and transportation services) to

support future development envisioned under the proposed project. However, it should be noted that improvements to public utilities, including new water, sanitary sewer, and storm water services would be identified on a project-specific basis as new developments are proposed under the proposed LUE. Therefore, infrastructure improvements associated with future development facilitated by project approval would be sized appropriately for each project and would not be oversized to serve additional growth beyond that envisioned under the proposed LUE. Therefore, impacts would be less than significant impact, no mitigation is required.

4.6.8 Mitigation Measures

There are no potentially significant impacts related to housing, population, and employment, and no mitigation is required.

4.6.9 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for population, housing, and employment. The cumulative study area used to assess potential cumulative population and housing impacts includes the City of Long Beach and the County of Los Angeles because employees in the planning area may live within or outside the City's jurisdictional boundaries.

As shown in Table 4.6.A, the City's population is anticipated to increase by 18,200 persons by 2040. Similarly, the City's employment is anticipated to increase by 28,500 jobs by 2040 and the County's employment is anticipated to increase by 980,000 jobs by 2040. Project-related increases in population and employment have been accounted for SCAG's growth projections for the City. Therefore, the proposed project would not result in cumulative population or employment increases that would exceed projected regional forecasts for the City.

Approval of the proposed project would allow for the future development of a variety of uses, including industrial, residential, commercial, office, recreational, and mixed-uses. These uses would serve to provide a sound and diversified economic base and ample employment opportunities for the citizens of Long Beach. Furthermore, the proposed project will serve an existing demand for employment, while also meeting the cumulative demand of employment that will result from the City's projected future population. These increases for population, housing, and employment would be within the total projected growth forecasts for 2040. In addition, implementation of the proposed project would be consistent with the City's vision for the community. Therefore, implementation of the proposed project would not result in a cumulatively significant population or housing impact and the future development facilitated by project approval would not significantly induce growth in areas where growth was not previously anticipated.

4.6.10 Level of Significance after Mitigation

Therefore, there would be no significant and unavoidable adverse impacts of the proposed project related to population, housing, and employment.

4.7 PUBLIC SERVICES

4.7.1 Introduction

This section describes the public services currently serving the planning area and evaluates the potential impacts of the Long Beach General Plan Land Use and Urban Design Elements Project (proposed project) on public services. This section is based on multiple data sources, including the Public Safety Element (1975) of the City of Long Beach (City) General Plan and the proposed General Plan Land Use Element (August 2016) and the Urban Design Element (August 2016) **(**Appendix F), as well as coordination with potentially affected public service providers. Specific references are identified within the subsection for each respective issue. This section addresses the following public services and utilities (service providers are noted in parenthesis):

- Fire Protection (City of Long Beach Fire Department [LBFD])
- Law Enforcement (City of Long Beach Police Department [LBPD])
- Public Schools (Long Beach Unified School District [LBUSD])
- Public Libraries (Long Beach Public Library [LBPL] System)
- Electricity (Southern California Edison [SCE])
- Natural Gas (City of Long Beach Gas and Oil Department)

4.7.2 Methodology

The effects of the proposed project are evaluated below to determine whether they would result in a significant adverse impact on the environment. The impact analysis presented in this section is based on information related to public services and utilities as these services relate to the implementation of the proposed project.

The discussion focuses on current levels of service provided to the project area and information on possible constraints or impacts to the facilities and/or services at General Plan buildout in the year 2040. Public service providers (e.g., LBFD, LBPD, LBUSD, and LBPL) were sent a questionnaire requesting information regarding current services provided to the planning area and information on possible constraints or impacts to their services associated with General Plan buildout (2040). The impact analyses are based on responses to the questionnaires, information obtained through subsequent phone conversations with public service representatives, and/or data obtained through websites. Correspondence with public service providers is included in Appendix D.

In addition to the questionnaires that were sent to LBFD, LBPD, LBUSD, and LBPL, demands for electricity and natural gas were modeled based on generation rates provided in the *South Coast Air Quality Management District (SCAQMD) California Environmental Quality Act (CEQA) Air Quality Handbook* (1993). These calculations were modeled by land use type and were calculated on a citywide basis to the existing baseline year of 2012 and General Plan buildout (2040). The net difference between the 2040 demand for utilities was then compared with the existing 2012 demand to generate the project-related increase in demand for electricity and natural gas. This increase was then compared with the projected capacity of applicable service providers to continue to service existing and new development in the City through the year 2040.

4.7.3 Existing Environmental Setting

Fire Protection. The LBFD is the primary authority in the City responsible for providing fire protection, medical, rescue, disaster response, public safety education, community service, and environmental emergency services. The LBFD is divided into the bureaus of Operations, Fire Prevention, Support Services, and Administration. Each bureau is further divided into sections that report to the Fire Chief. The LBFD has a total of 527 full time equivalent (FTE) uniformed and non-uniformed personnel.[1] The LBFD currently protects over 472,779[2] residents from its 24 fire stations located throughout the City (including two fire boat stations in the Port of Long Beach, one urban search and rescue service station, and one airport station), nine lifeguard facilities (41 seasonal stations), a training center, an emergency communications and operations center, and the LBFD headquarters.

The planning area includes the entire area within the City's jurisdictional limits (approximately 50 square miles). As such, all 24 stations, the nine lifeguard facilities, and the related training centers and headquarters would serve the planning area.

According to the City's Adopted Budget for Fiscal Year (FY) 2016, it is the stated goal of the LBFD to respond to structure fire calls within 6 minutes and 20 seconds or less.[3] Response time is impacted by many factors, including increasing call volume and station location. Approximately 85 percent of the LBFD emergency responses are medical in nature. The LBFD goals for emergency response are to respond to 90 percent of emergency calls within 5 minutes or less. Currently, the average Citywide response time from dispatch to arrival is 4.7 minutes.[4]

The LBFD receives funding from the following four sources: (1) the City's General Fund (73 percent), (2) the Certified Unified Program Agency (CUPA) (1 percent), (3) the Tidelands Operations Fund (24 percent), and (4) the Police and Fire Public Safety Oil Production Act (Proposition H) (2 percent).[5] The City's FY 2016 adopted budget for LBFD was $98,181,760, which represents approximately 4 percent of the total budget for all departments ($2.684 billion).

Police Protection. The LBPD provides local police protection services to the City of Long Beach. The LBPD consists of four separate bureaus:[6] (1) the Investigation Bureau, (2) the Support Bureau, (3) the Patrol Bureau, and (4) the Administration Bureau. The Investigation Bureau consists of the

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1 City of Long Beach Fire Department. Website: http://www.longbeach.gov/fire/ (accessed December 17, 2015).

2 California Department of Finance. Report E-1 Population Estimates for Cities, Counties, and the State. Website: http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php (accessed December 21, 2015).

3 City of Long Beach Police Department. FY 2016 Adopted Budget. Website: http://www.longbeach.gov/Finance/Media-Library/Documents/City-Budget-and-Finances/Budget/Budget-Documents/20-Police/ (accessed February 22, 2016).

4 City of Long Beach Fire Department, Department Performance Measures, 2014.

5 City of Long Beach Fire Department. FY 2016 Adopted Budget. Website: http://www.longbeach.gov/Finance/Media-Library/Documents/City-Budget-and-Finances/Budget/Budget-Documents/12-Fire/ (accessed March 1, 2016).

6 City of Long Beach Police Department. Website: http://www.longbeach.gov/police/ (accessed June 10, 2015).

Detective Division, the Gang and Violent Crimes Division, the Forensic Science Services Division, and the Criminal Intelligence Division. This Investigation Bureau is responsible for investigating crimes, analyzing evidence, apprehending suspects, preventing abuse, and promoting positive relationships between police officers and youth. The Support Bureau consists of the Security Services, Communications and Training, the Port Police, and the Jail Divisions. This Support Bureau is responsible for providing specialized security functions, providing enhanced emergency communication services, developing police recruits, and training police officers. The Patrol Bureau is the largest bureau as it encompasses over 40 percent of the LBPD budget and more than half of its personnel. This Patrol Bureau is responsible for providing community policing services. The Administrative Bureau consists of the Fiscal, Personnel, and Records and Technology Divisions. This Administrative Bureau is responsible for processing payments and billings; preparing the annual budget; providing personnel and payroll services; and managing department records, fleet vehicles, and technological activities.

LBPD strives to respond to Priority 1 Calls for Service (crime in progress/life-threatening situations) in 5 minutes or less, on average. Priority 2 Calls are non-emergency calls for crimes that have been committed with possible evidence available. The LBPD goal is to respond to Priority 2 Calls for service in 20 minutes or less, on average. Priority 3 calls are generally related to crimes with no evidence potential, but are required or desire to take a report of a crime. The LBPD goal is to respond to Priority 3 calls for service in 30 minutes or less, on average.[1] As such, Priority 1 Calls receive LBPD's fastest response time. The LBPD states that existing resources, including personnel, equipment, and facilities, are able to adequately serve the City under current conditions.[2]

The LBPD currently serves a population of approximately 472,779 residents (refer to Section 4.6, Population and Housing, for further detail). The LBPD FY 2016 budget accounts for approximately 806 sworn officers and 360 civilian FTEs. This provides a ratio of approximately 1.7 sworn officers and 0.76 civilian FTEs per 1,000 residents.[3]

The LBPD is also a part of the Los Angeles County Law Enforcement Mutual Aid Organization, which is overseen by the Los Angeles County Sheriff's Department. In the event that mutual aid is required, the Emergency Operations Bureau of the Los Angeles County Sheriff's Department is notified and, in turn, notification of other cities in predetermined response groups would occur.

The LBPD receives funding from the following four sources: (1) the City's General Fund (91 percent), (2) General Grants (2 percent), (3) the Tidelands Operations Fund (6 percent), and (4) the Police and Fire Public Safety Oil Production Act (Proposition H) (1 percent). The City's FY 2016 adopted budget for the LBPD was $209,258,622, which represents approximately 8 percent of the total budget for all departments ($2.684 billion).

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1 City of Long Beach Police Department. FY 2016 Adopted Budget. Website: http://www.longbeach.gov/Finance/Media-Library/Documents/City-Budget-and-Finances/Budget/Budget-Documents/20-Police/ (accessed February 22, 2016).

2 City of Long Beach. Midtown Specific Plan EIR. 4.7 Public Services. Website: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=5634 (accessed February 22, 2016).

3 Long Beach Police Department. FY 2016 Adopted Budget. Website: http://www.longbeach.gov/Finance/Media-Library/Documents/City-Budget-and-Finances/Budget/Budget-Documents/20-Police/ (accessed February 22, 2016).

Public Schools. The provision of education and school facilities in the City is the responsibility of the LBUSD, which is currently the third largest school district in the State and serves approximately 80,000 students in 84 schools in the Cities of Long Beach, Lakewood, Signal Hill, and Avalon (on Catalina Island).[1] For the 2014–2015 school year, the LBUSD accommodated a total of 79,709 students in its elementary, middle, and high schools, of which a total of 71,861 students attended within the City of Long Beach. A breakdown of the most current enrollment and capacities available within the LBUSD are shown in Tables 4.7.A and 4.7.B, respectively.

Table 4.7.A: LBUSD Student Enrollment (2014–2015)

School Level	Existing Enrollment in LBUSD	Existing Enrollment in Schools outside the City of Long Beach	Existing Enrollment in Schools within the City of Long Beach
Elementary Schools	42,581	2,963	39,618
Middle Schools	11,758	922	10,836
High Schools	25,370	3,963	21,407
Total	**79,709**	**7,848**	**71,861**

Source: Ed Data Education Data Partnership. Website: http://www.ed-data.org/district/Los-Angeles/Long-Beach-Unified (accessed February 22, 2016).
LBUSD = Long Beach Unified School District

Table 4.7.B: LBUSD Capacity and Student Enrollment (2014–2015)

School Level	Facilities Capacity	Existing Enrollment in LBUSD	Excess/ (Shortage) Capacity
Elementary Schools	44,779	42,581	2,198
Middle Schools	13,776	11,758	2,018
High Schools	22,950	25,370	(2,420)
Total	**81,505**	**79,709**	**1,796**

Source: Long Beach Unified School District. *School Facilities Needs Analysis,* Table 6 (May 2015).
LBUSD = Long Beach Unified School District

Collectively, the LBUSD's school facilities in the 2014–2015 school year had a capacity of 81,505 seats per Section 17071.25 of the Education Code.[2] Of these 81,505 seats, 44,779 were at the elementary school level, 13,776 were at the middle school level, and 22,950 were at the high school level. These capacities included seats from all new school facility construction projects funded by the State. As shown in Table 4.7.B, LBUSD Capacity and Student Enrollment (2014–2015) student enrollment exceeded the facilities capacity at the high school level, while the facilities capacity exceeded student enrollment at the elementary school and middle school levels in the 2014–2015 school year.[3]

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1 Long Beach Unified School District (LBUSD). Website: http://www.lbschools.net/District/ (accessed June 10, 2015).

2 Section 17071.25 of the California Education Code outlines a four-part methodology for calculating the total school building capacity in any given school district. For further details related to this methodology, see website: http://law.onecle.com/california/education/17071.25.html.

3 LBUSD. *School Facilities Needs Analysis,* Table 6 (May 2015).

The LBUSD overall budget of $1.01 billion consists of the combined expenditure plans for ten separate funds. The General Fund accounts for the cost of direct institution and support services to LBUSD's elementary, middle, and high school students. Most of the LBUSD revenue comes from the State through the new Local Control Funding Formula (LCFF).[1]

Public Libraries. The LBPL system provides library services to the City and includes 12 branch locations throughout the City.[2] The Long Beach Main Library is located in the southern portion of the City at 101 Pacific Avenue, in the Civic Center. In total, the LBPL system has approximately 220,265 square feet (sf) of library facilities, approximately 806,988 library materials (includes hardcopies and online resources), and approximately 227 computers available for public use.[3] In FY 2015, the City's Library Services employed 119.33 FTE personnel.[4] Table 4.7.C, LBPL Statistics, details specific information such as library size, population served, and specific collection items for each library within the LBPL system.

Table 4.7.C: LBPL Statistics

Library	Year Built	Council	Library	Schools Served	Hours Open per Week	Items Circulated Annually	Reference Questions Answered Annually	Staff FTE	No. of Volumes	Square Feet
Main	1977	2	491,564	6	35	467,920	241,895	54.85	320,455	135,000
Alamitos	1929	2	53,536	3	34	51,409	8,305	4.19	34,303	7,475
Bach	1958	5	32,054	16	34	105,706	20,264	4.02	40,832	7,000
Bay Shore	1959	3	26,693	4	38	96,397	30,942	4.02	41,902	6,900
Brewitt	1948	4	32,577	8	34	60,798	10,873	4.19	31,351	5,225
Burnett	1969	6	47,802	9	38	49,691	34,917	5.04	50,043	7,500
Dana	1958	7	41,791	8	34	128,043	16,822	4.36	45,146	6,800
El Dorado	1970	5	20,055	11	34	170,890	20,975	5.92	56,836	8,160
Harte	1957	7	35,879	9	34	70,696	25,625	5.26	42,261	6,500
Los Altos	1957	4	39,296	11	34	113,132	9,370	4.09	43,587	6,750
Mark Twain	2007	6	57,433	5	34	147,111	19,416	8.94	63,837	16,000
North	1951	8	99,144	13	38	89,604	15,506	7.11	32,576	6,800

Source: Long Beach Public Library. Facts and Figures. Website. http://www.lbpl.org/info/about/facts_and_figures.asp (accessed February 23, 2016).
FTE = full time equivalent
LBPL = Long Beach Public Library

1 LBUSD 2015–2016 Adopted Budget. Website: http://www.lbschools.net/Asset/Files/Business_Services/Financial/Adopted%20Budget%202015-16%20Summary%20Book.pdf (accessed March 2, 2016).
2 Long Beach Public Library (LBPL). Website: Library Locations, http://www.lbpl.org/locations/library_locations.asp, (accessed December 21, 2015).
3 LBPL. 2016. Manager of Main Library Services, Susan Jones. Email Correspondence. January 19, 2016.
4 LBPL. FY 2016 Budget. Website: http://www.longbeach.gov/Finance/Media-Library/Documents/City-Budget-and-Finances/Budget/Budget-Documents/16-Library/(accessed December 24, 2015).

Libraries in the LBPL system are closed on Mondays and are open from 12:00 p.m. to 7:00 p.m. (Main Library, from 12:00 p.m. to 8:00 p.m.) on Tuesdays, from 12:00 p.m. to 6:00 p.m. on Wednesdays, from 12:00 p.m. to 7:00 p.m. on Thursdays, from 10:00 a.m. to 5:00 p.m. on Fridays and Saturdays, and from 12:00 p.m. to 4:00 p.m. on Sundays (Bay Shore Neighborhood Library only).[1]

While the City has not formally adopted a service standard of library space per capita, the City did establish a target of 0.45 sf per capita in its budget for FY 2007.[2] Using this standard and 472,779 as the estimated 2015 population, the LBPL currently provides approximately 0.47 sf per capita, thereby exceeding the standard of library space by 0.02 sf per capita.

The LBPL receives funding from the following three sources: (1) the City's General Fund (96 percent), (2) General Grants (3 percent), and (3) the Civic Center (1 percent). The City's FY 2016 adopted budget for LBPL was $13,343,257, which for LBPL represents about 0.5 percent of the total budget for all departments ($2.684 billion).

Energy. Appendix F, Energy Conservation, of the *State California Environmental Quality Act (CEQA) Guidelines* requires that Environmental Impact Reports (EIRs) include a discussion of potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. The discussion below provides information pertaining to existing energy supplies and energy use patterns in the region and locality.

Electricity. The planning area is within the service territory of SCE serviced through a grid of transmission lines, distribution lines, and related facilities. SCE, an independently owned utility, provides electrical service to 15 million people in 50,000 square miles across central, coastal, and southern California, including the City of Long Beach. Currently, SCE delivers electrical power to these areas through 12,782 miles of transmission lines, 90,401 miles of distribution lines, 1,433,336 electric poles, 720,800 distribution transformers, and 2,959 substation transformers.[3]

In December 2014, the California Energy Commission (CEC) published preliminary California Energy Demands for 2015 through 2025.[4] According to the CEC, the electricity consumption in the SCE service area was estimated to be 100,348 gigawatt hours (GWh) in the high-demand

1 LBPL. Library Hours. Website: http://www.lbpl.org/locations/library_hours.asp (accessed December 21, 2015).

2 FY 2007 is the most current year for which target library performance standards have been established. As noted above, these standards have not been formally adopted by the City.

3 Southern California Edison, Powering Southern California for 125+ Years, https://www.sce.com/wps/portal/home/about-us/who-we-are/!ut/p/b1/hc_BDkNAFAXQb_ED3msH1eUoYSzaKglm0yA6lWJEpfP7JbGtvt1Nzk3uAw4Z8L74NKKYGtkX7ZK5dd_ZPg1YjMxPDBOZsz8Q32Ek8cwZ5DPAH0fxXz8FvkVcw1jB0UcvCC8LiAgyEuE5ppQgWivY2BACF60s53_SE_DKbV-DWpbTviS2AD7Wj3qsR_0p3xNkSildSCnaWq9kB0OXYXPtbjnVtC-pQMWf/dl4/d5/L2dBISEvZ0FBIS9nQSEh/, (accessed December 22, 2015).

4 California Energy Commission (CEC), 2015–2015 Electricity Demand by Planning Area. http://www.energy.ca.gov/2014publications/CEC-200-2014-009/CEC-200-2014-009-SD.pdf, (accessed June 12, 2015).

scenario in 2016. According to the CEC, electricity consumption in the SCE service area is projected to reach between 119,741 GWh in the high-demand scenario by 2025. In addition, the CEC estimates that net peak demand and net energy load within SCE's service territory will continue to grow annually by up to 1.58 percent from 2014 to 2025.[1]

Based on electricity usage rates outlined in the 1993 CEQA Air Quality Handbook[2], the City of Long Beach had an estimated annual electricity demand of 1,634.20 GWh in 2012.

Natural Gas. The City of Long Beach Municipal Gas and Oil Department (LBGO) provides natural gas services to residents and businesses of Long Beach and Signal Hill and portions of surrounding communities, including the cities of Bellflower, Compton, Lakewood, Los Alamitos, Paramount, and Seal Beach. Currently, the LBGO is the fifth largest municipal gas utility in the nation, serving approximately 500,000 residents[3] and businesses through over 1,900 miles of LBGO pipelines.[4]

In addition to providing a summary of the existing and historic natural gas demands, the 2014 California Gas Report also provides projected annual gas supplies for future years through the year 2035. According to the 2014 California Gas Report, natural gas demand in LBGO's service area was 8,906 million cubic feet (MMcf) (8.9 billion cubic feet [bcf]) in 2012 and the future annual demand for natural gas is projected to reach 9,605 MMcf (9.6 bcf) in 2035.[5]

4.7.4 Regulatory Setting

Federal Policies and Regulations. At the federal level, the United States Department of Transportation (DOT), the United States Department of Energy (DOE), and the United States Environmental Protection Agency (EPA) are the three federal agencies with substantial influence over energy policies and programs. These agencies influence and regulate transportation energy consumption through the establishment and enforcement of fuel economy standards for automobiles and light trucks, through energy-related research and development projects, and through transportation infrastructure improvements.

Federal Energy Policy and Conservation Act. In 1975 the United States Congress adopted the Federal Energy Policy and Conservation Act as a means to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. The primary goals of this Act are to increase energy

1 California Energy Commission (CEC), 2015-2015 Electricity Demand by Planning Area. http://www.energy.ca.gov/2014publications/CEC-200-2014-009/CEC-200-2014-009-SD.pdf, (accessed June 12, 2015).

2 SCAQMD, CEQA Air Quality Handbook, Table A-9-11-A, 1993.

3 Long Beach Municipal Gas and Oil Department, http://www.longbeach.gov/lbgo/, (accessed December 22, 2015).

4 Fiscal Year 2015 Adopted Budget, Long Beach Gas & Oil, http://www.longbeach.gov/finance/media-library/documents/city-budget-and-finances/budget/budget-documents/fy-15-adopted-budget-webpage/long-beach-gas-and-oil/, (accessed December 22, 2015).

5 California Gas and Electric Utilities. 2014 California Gas Report. http://www.socalgas.com/regulatory/documents/cgr/2014-cgr.pdf (accessed June 12, 2015).

production and supply, reduce energy demand, provide energy-efficient alternatives, and grant additional authority to the executive branch to respond to changes in the nation's energy supply. In order to meet these goals, this Act established a reserve of petroleum, established energy conservation standards for consumer products, and established the first fuel economy standards for on-road motor vehicles. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon (mpg). Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. While compliance with federal fuel economy standards is not determined for each individual vehicle model, compliance is determined for each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by U.S. EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The U.S. EPA calculates a CAFE value for each manufacturer, based on fuel economy test results and vehicle sales. On the basis of the information from the CAFE program, the U.S. DOT is authorized to assess penalties for noncompliance. Consequently, this regulatory program has resulted in vastly improved fuel economy throughout the nation's vehicle fleet.

International Fire Code. The International Fire Code (IFC) regulates minimum fire safety requirements for new and existing buildings, facilities, storage, and processes. The IFC includes general and specialized technical fire and life safety regulations addressing fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, use and storage of hazardous materials, protection of emergency responders, industrial processes, and many other topics.

State Policies and Regulations.

California Health and Safety Code. Sections 13000 et seq. of the California Health and Safety Code include fire regulations for building standards (also contained in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

California Fire Code. The California Fire Code (CFC; California Code of Regulations Title 24, Part 9) sets forth requirements including emergency access, emergency egress routes, interior and exterior design and materials, fire safety features including sprinklers, and hazardous materials. The CFC is issued on a 3-year cycle; the 2013 Edition (the most recent version, which took effect January 1, 2014) of the CFC is adopted and incorporated by reference in Chapter 18.48 (Fire Code) of the City's Municipal Code.

California State Assembly Bill 2926: School Facilities Act of 1986. To assist in providing school facilities to serve students generated by new development, Assembly Bill (AB) 2926 was enacted in 1986 and authorizes a levy of impact fees on new residential and commercial/industrial development. The bill was expanded and revised in 1987 through the passage of AB 1600, which

added Sections 66000 et seq. to the Government Code. Under this statute, payment of impact fees by developers serves as California Environmental Quality Act (CEQA) mitigation to satisfy the impact of development on school facilities.

California Senate Bill 50. Senate Bill (SB) 50, passed in 1998, provides a comprehensive school facilities financing and reform program and enables a statewide bond issue to be placed on the ballot. Under the provisions of SB 50, school districts are authorized to collect fees to offset the costs associated with increasing school capacity as a result of development and related population increases. The funding goes toward acquiring school sites, constructing new school facilities, and modernizing existing school facilities. SB 50 establishes a process for determining fee amounts charged to developers to mitigate the development impacts on school districts from increased enrollment. According to Section 65996 of the California Government Code, development fees authorized by SB 50 are deemed to be "full and complete school facilities mitigation."

Under this legislation, there are three levels of developer fees that may be imposed upon new development by the governing school district. Level I fees are assessed based upon the proposed square footage of residential, commercial/industrial, and/or parking structure uses. Level II fees require the developer to provide one-half of the cost of accommodating students in new schools, and the State provides the remaining half. To qualify for Level II fees, the board of the governing school district must adopt a School Facilities Needs Analysis and meet other prerequisites in accordance with Section 65995.6 of the California Government Code. Level III fees apply if the State runs out of bond funds, allowing the governing school district to impose 100 percent of the cost of the school facility or mitigation, minus any local dedicated school monies, on the developer.

Title 24 of the California Code of Regulations. The California Energy Code (Title 24, Part 6 of the California Code of Regulations, California's Energy Efficiency Standards for Residential and Nonresidential Buildings), provides energy conservation standards for the new construction and rehabilitation of residential and nonresidential buildings and regulates energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings provided these standards meet or exceed Title 24 Building Code requirements. Title 24 regulates building energy consumption for heating, cooling, ventilation, water heating, and lighting with regard to both electricity and natural gas. These standards are typically updated every 3 years by the CEC. The California Green Building Standards Code (CALGreen Code) was most recently updated in 2016 to include new mandatory measures for residential as well as nonresidential uses; the new measures take effect on January 1, 2017. Compliance with Title 24 energy efficiency requirements can be achieved through following a prescriptive approach outlined in the standards or following a performance approach using computer modeling. The prescriptive approach offers relatively little design flexibility but is easy to use, while the performance approach allows design flexibility that can be used to find the most cost-effective solutions but that requires multiple calculations.

Appendix F of the *State CEQA Guidelines*. Appendix F, Energy Conservation, requires that EIRs include a discussion of the potential energy impacts of a proposed project, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (refer to Public Resources Code 21100[b][3]). In addition, Appendix F seeks inclusion of information in the EIR addressing the following:

- Measures to reduce wasteful, inefficient, and unnecessary consumption of energy during construction, operation, and maintenance of the project;
- The siting and orientation of buildings and structures to minimize energy consumption, including transportation energy;
- Measures for reducing peak energy demand;
- Incorporation of alternative fuels (particularly renewable ones) or energy systems; and
- Incorporation of recycling for nonrenewable resources.

Appendix F of the *State CEQA Guidelines* is an advisory document that assists Lead Agencies in determining whether a project would result in impacts related to energy.

Local Policies and Regulations.

City of Long Beach Municipal Code. The following provisions from the City's Municipal Code focus on public services impacts associated with new development projects and are relevant to the proposed project:

Chapter 18.22 (Police Facilities Impact Fees). This chapter sets forth fees that are imposed on residential and nonresidential development for the purpose of assuring that impacts created by new development be offset by payment of its fair share of costs required to support needed police facilities and related costs necessary to accommodate such development.

Chapter 18.23 (Fire Facilities Impact Fees). This chapter sets forth the fees that are imposed on residential and nonresidential development for the purpose of assuring that impacts created by new development be offset by payment of its fair share of the costs required to support needed fire facilities and related costs necessary to accommodate such development. The funds are to be utilized for payment of the actual or estimated costs of fire facilities, apparatuses, and equipment related to new residential and nonresidential construction.

Chapter 18.48 (Fire Code). This chapter formally adopts the 2013 Edition of the California Fire Code (CFC), excluding sections, chapters or appendices pursuant to Section 18.48.040. The CFC sets forth requirements including emergency access, emergency egress routes, interior and exterior design and materials, fire safety features including sprinklers, and hazardous materials.

City of Long Beach Proposition H. The Police and Fire Public Safety Oil Production Act Fund, Proposition H, was established to provide dedicated funds for police and fire services by assessing a special production tax on oil producers in Long Beach. The special tax proceeds support police and fire responses to public safety needs. As of June 1, 2015, the tax rate was $0.29 per barrel.[1]

City of Long Beach General Plan. The following public safety goals and recommendations are included in the Public Safety Element of the City General Plan (1975) and are applicable to the proposed project as they relate to the police and fire protection required for existing and proposed land uses. The following goals and recommendations are applicable to the proposed project.

Development Goal 1. Promote the redevelopment of areas which may present safety problems.

Development Goal 2. Utilize safety considerations as a means of encouraging and enhancing desired land use patterns.

Development Goal 5. Use physical planning as a means of achieving greater degrees of protection from safety hazards.

Development Goal 6. Encourage transportation systems, utilities, industries, and similar uses to locate and operate in a manner consistent with public safety goals.

Development Goal 7. Assure continued safe accessibility to all urban land uses throughout the City.

Development Goal 9. Encourage development that would augment efforts of other safety-related Departments of the City (i.e., design for adequate access for firefighting equipment and police surveillance).

Development Goal 10. Strive to encourage urbanizations patterns which preserve and/or create greater safety for residents and visitors.

Protection Goal 1. Use safety precautions as one means of preventing blight and deterioration.

[1] City of Long Beach Auditor's Office. 2016. Proposition H Police and Fire Public Safety Oil Production Act. January 29.

Protection Goal 10. Provide the maximum feasible level of public safety protection services.

Sustainable City Action Plan. The City adopted the Sustainable City Action Plan on February 2, 2010 with the purpose of moving the City towards becoming a more sustainable City. Sustainability is defined in this plan as maximizing individual benefits and minimizing negative environmental impacts to ensure the long-term health of the environment for the enjoyment and use of current and future generations. The Sustainable City Action Plan includes initiatives, goals, and actions that are meant to guide City decision-makers in striving towards achieving a sustainable City. The following goals, initiatives, and actions are applicable to the proposed project:

Sustainability Goal 2: Reduce electricity use in City operations by 25% by 2020.

Sustainability Goal 3: Reduce natural gas use in City operations by 15% by 2020.

Sustainability Goal 4: Facilitate the development of at least 2 Megawatts of solar energy on city facilities by 2020.

Sustainability Goal 5: Reduce community electricity use by 15% by 2020.

Sustainability Goal 6: Reduce community natural gas use by 10% by 2020.

Sustainability Goal 7: Facilitate the development of at least 8 Megawatts of solar energy within the community (private rooftops) by 2020.

Energy Initiative 2: Ensure all of the City of Long Beach's Operational needs are met through energy efficiency, conservation and renewable energy sources.

Energy Initiative 3: Reduce electricity and natural gas consumption of the Long Beach community.

Action 1: Increase energy efficiency in City facilities through ongoing energy audits, retrofits, weatherization and preventative maintenance.

Action 4: Encourage the use of energy efficient products including efficient lighting, energy monitoring systems, cool and green roods, insulation and efficient HVAC systems.

Action 9: Implement energy efficiency and conservation measures.

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

The following proposed Land Use Element (LUE) and Urban Design Element (UDE) strategies, policies, and implementation measures are applicable to the analysis of public services:

Land Use Element.

LU-M-2: Update the Zoning Regulations to include urban form standards that address the interface with street frontage, appropriate massing and compatibility standards based on context and location. Ensure the regulations allow a mix of uses and accommodate transit, walking, and biking facilities.

LU-M-55: Implement a City green business program that incorporates goals and strategies for waste reduction, energy efficiency, water conservation, green purchasing and similar strategies.

LU-M-66: Provide coordination between long-range land use planning and infrastructure improvements to ensure there are adequate infrastructure and community services to meet existing and future developments.

Urban Design Element.

Policy UD 1-1: Support the goals, strategies, and policies of the General Plan Elements.

Policy UD 5-3: Provide a range of passive and active areas that promote safe, healthy places for exercise, recreation, family gatherings, and respite within walking distance of all neighborhoods.
Strategy No. 6: Improve public infrastructure to serve new development, established neighborhoods, commercial centers, and industry and regional-serving facilities within areas of change and future growth areas.

Policy UD 7-1: Encourage public amenities and spaces in neighborhoods that allow for human contact, social activities, and community involvement to create an "eyes on the street" environment.

4.7.6 Thresholds of Significance

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

Threshold 4.7.1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for *fire protection;*

Threshold 4.7.2: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable

service ratios, response times, or other performance objectives for *police protection;*

Threshold 4.7.3: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for *public schools;*

Threshold 4.7.4: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for *parks*; or

Threshold 4.7.5: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for *any other public facilities.*

Approval of the proposed project is considered a policy/planning action for the entire City and does not include any physical improvements. Therefore, the Initial Study/Notice of Preparation (IS/NOP) (Appendix A) determined that the proposed project would result in less than significant impacts related to potential adverse physical impacts for parks (Threshold 4.7.4). As a result, this threshold is not analyzed further in this Draft EIR.

4.7.7 Standard Conditions and Project Design Features

The proposed project would not be required to adhere to any standard conditions and would not include any project design features related to public services.

4.7.8 Project Impacts

Threshold 4.7.1: **Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for *fire protection*?**

Less than Significant Impact. The proposed project does not include any physical improvements, but allows future development that is anticipated to create an increase in the typical range of fire protection service calls within the City. As noted in Section 4.6, Population and Housing, implementation of the proposed project could result in the development of approximately 11,744 dwelling units and the addition of approximately 51,230 persons. The estimated City population at General Plan buildout (2040) would be approximately 484,485. As a result of the increased population, overall demands for fire protection services and emergency services in the City would also increase.

Although current fire protection services meet the existing demand,[1] additional LBFD resources, including staffing, would be required to provide fire protection for new residents, workers, and structures. The City's costs to maintain facilities and equipment as well as train and equip personnel would also increase. In addition, the redistribution and increase of the population and traffic density into areas proposed for growth, such as the Downtown area, could necessitate the reorganization of fire protection resources. The costs of additional personnel and materials are anticipated to be offset through the increased revenues and fees, such as property taxes, generated by future development. Additionally, future development allowed under the proposed project would occur within the limits of the City, already served by the LBFD; therefore, the proposed project would not result in an expansion of the LBFD service area.

Future projects would be reviewed by the City of Long Beach on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted fire facilities impact fees. Per Chapter 18.23 (Fire Facilities Impact Fees) of the City's Municipal Code, the LBFD receives funding from Fire Facilities Impact fees, which are charged on all new residential and nonresidential development. These fees are calculated per dwelling unit or square footage, as detailed in Table 4.7.D. Fire Facilities Impact Fees (2015). The funds obtained from the fire facilities impact fees are required to be used to fund costs of providing additional fire services necessary to accommodate such development. The LBFD would also continue to be supported by Proposition H revenue, a per barrel tax on all oil producers in Long Beach; the City's General Fund; the City's Tidelands operation revenue; and other revenue sources such as paramedic fees, fire building plan and building check fees, various state and federal grants, and private donations. The additional personnel, building, and material costs for fire services in the City required due to increased demand from future development accommodated by the proposed project would be offset through these revenue sources. Therefore, sufficient revenue would be available for necessary improvements to provide for adequate fire facilities, equipment, and personnel upon buildout of the General Plan. Upon implementation of the proposed project, the LBFD would maintain appropriate firefighter staffing to ensure compliance with adopted standards for response time and coverage.

[1] City of Long Beach. Midtown Specific Plan EIR. 4.7 Public Services. Website: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=5634 (accessed February 22, 2016).

Table 4.7.D: Fire Facilities Impact Fees (2015)

Land Use Type	Fee
Residential	
Single-family	$496/dwelling
Multi-family	$378/unit
Non-Residential:	
Commercial	$0.267/sf
Office	$0.325/sf
Industrial	$0.132/sf

Source: City of Long Beach Developer Fees (updated September 30, 2015), http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=2506 (accessed January 14, 2016).
sf = square feet

All future projects allowed under the proposed LUE and UDE would also be required to undergo project-specific environmental review and comply with all applicable building code requirements requiring fire protection devices, such as sprinklers, alarms per Municipal Code Section 18.48.010 – (Adoption of the 2013 California Fire Code), adequately spaced fire hydrants, and fire access lanes. Adherence to applicable codes would ensure adequate facilities to provide for fire protection services meeting or exceeding established performance objectives and ensure that there is adequate emergency access on site. In addition, if construction impacts of a development project necessitate the closure of roadways that serve a particular project, the applicant would be required to coordinate road closures and emergency access with LBFD to ensure an adequate level of fire protection services at the adopted performance objectives.

As described in the proposed LUE, fire and police stations are two of the preferred land uses within the designated Founding and Contemporary Neighborhoods, Multi-Family Residential – Low and Moderate, Neighborhood-Serving Centers and Corridors – Low and Moderate, Transit-Oriented Development – Low and Moderate, and Industrial PlaceTypes. While there are no new fire facilities planned at this time, the proposed PlaceType designations would permit the future development and operation of new stations. The proposed project permits development of new stations, proposes no physical improvements, and all future projects would be required to assess project impacts on fire protection services. Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection. Project impacts related to fire protection would be less than significant, and no mitigation is required.

Threshold 4.7.2: **Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for *police protection*?**

Less than Significant Impact. The proposed project does not include any physical improvements, but allows future development that is anticipated to create an increase in the typical range of police

service calls within the City. As previously identified, implementation of the proposed project could result in the development of approximately 11,744 dwelling units and the addition of approximately 51,230 persons. The estimated City population at General Plan buildout (2040) would be 484,485. As a result of the increased population and employment in the City, the number of police service calls, patrols, and staff necessary to service the City would also increase.

To serve future growth, new and/or additional police resources would be needed to prevent an impact to service ratios. The City's costs to maintain facilities and equipment as well as train and equip personnel would also increase. In addition, the redistribution and increase of the population and traffic density into areas proposed for growth, such as the Downtown area, could necessitate the reorganization of police resources. The costs of additional personnel and materials are anticipated to be offset through the increased revenues and fees, such as property taxes, generated by future development.

Future projects would be reviewed by the City of Long Beach on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Prior to the issuance of building permits, future project applicants would be required to pay the adopted police facilities impact fees. Per Chapter 18.22 (Police Facilities Impact Fees) of the City's Municipal Code, the LBPD receives funding from police facilities impact fees which are charged on all new residential and non-residential development. These fees are calculated per dwelling unit or square footage, as detailed in Table 4.7.E, Police Facilities Impact Fees (2015). The funds obtained from the police facilities impact fees are required to be used to fund costs of providing additional police services attributed to new development, including the acquisition, construction, and furnishing of new law enforcement facilities, the purchasing of equipment and vehicles, and the funding of a master plan to identical capital facilities to serve the LBPD. In addition, the LBPD would continue to be supported by Proposition H revenue, a per barrel tax on all oil producers in Long Beach; the City's Tidelands operation revenue; and other revenue sources such as general grants (e.g., federal, State, and County grants).[1] The additional personnel, building, and materials costs for police services in the City required due to increased demand from future development accommodated by the proposed project would be offset through these revenue sources.

Table 4.7.E: Police Facilities Impact Fees (2015)

Land Use Type	Fee
Residential	
Single-family	$703/dwelling
Multi-family	$537/unit
Non-Residential	
Commercial	$0.442/sf
Office	$0.538/sf
Industrial	$0.218/sf

Source: City of Long Beach Developer Fees (effective September 30, 2015). Website: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=2506 (accessed January 14, 2016).
sf = square feet

[1] City of Long Beach Auditor's Office. 2016. Proposition H Police and Fire Public Safety Oil Production Act. January 29.

By following this process, sufficient revenue would be available for necessary service improvements to provide for adequate police facilities, equipment, and personnel upon buildout of the General Plan. To maintain the existing ratio of sworn officers and civilian FTE employees per capita— 1.7 and 0.76 per 1,000 residents, respectively—buildout of the General Plan would require the hiring of approximately 18 new sworn officers and 8 new civilian FTE employees.[1] However, impacts to police services are anticipated to be funded by an increase in tax revenues over an extended period of time. New development over time would increase contributions to the General Fund through tax revenues by which the fund would be expected to grow in rough proportion to any increase in residential dwelling units and/or nonresidential space. Additional police personnel and resources would be provided through the annual budget review process. Annually, the LBPD assesses and allocates its budget to ensure that adequate levels of service are maintained throughout the City. Additional resources and personnel funded by an increase in tax revenue, along with collection of Police Facilities Impact Fees, would maintain the level of service needed to support the increase in growth.

As previously stated, police and fire stations are two of the preferred land uses within the following designated PlaceTypes: Founding and Contemporary Neighborhood, Multi-Family Residential – Low and Moderate, Neighborhood-Serving Centers and Corridors–Low and Moderate, Transit-Oriented Development – Low and Moderate, and Industrial. While there are no new police facilities planned at this time, the proposed PlaceType designations would permit the future development and operation of new stations. The proposed project does not include physical improvements, and future projects would be required to assess project impacts on police services. Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities in order to maintain acceptable service ratios, response times, or other performance objectives for police protection. Project impacts related to police protection would be less than significant.

Threshold 4.7.3: Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for public schools?

Less than Significant Impact. Implementation of the proposed project would allow future development that would enable the generation of school-aged children within the LBUSD service area. General Plan buildout could include the addition of up to 11,744 dwelling units.[2] Table 3.C, in Chapter 3.0, Project Description, provides the number of dwelling units facilitated by project implementation, subdivided into single-family and multi-family housing types. Of the additional 11,744 dwelling units, 664 would be single-family and 11,080 would be multi-family residential units.

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1 There are currently 806 sworn officers and 306 civilian officers. The City's population is anticipated to be 484,485 in 2040. Using a ratio of 1.7 sworn officers per 1,000 persons and 0.76 civilian officers per 1,000 persons, the City would need approximately 824 and 368 sworn and civilian officers, respectively, at General Plan buildout.

2 Refer to Section 4.6, Population and Housing, of this Draft EIR.

The addition of these new housing units within the City has the potential to generate student growth in the LBUSD. This growth may strain existing and/or planned school facilities. While the proposed project does not include the approval of any specific development, student generation was estimated in order to determine whether the proposed project would impact the LBUSD.

The LBUSD uses generation factors to determine the number of students per dwelling unit, and uses different student generation rates for each school level for single-family detached, single-family attached, and multifamily dwelling unit types.[1] Calculations for all 664 single-family residential units associated with General Plan buildout utilized the single-family detached student generation rates, as opposed to the lower single-family attached generation rates, in order to provide a conservative, worst-case scenario estimate. As illustrated by Tables 4.7.F and 4.7.G, General Plan buildout of the 644 single-family and 11,080 multi-family dwelling units in 2040 would generate approximately 330 and 3,645 additional students, respectively (3,975 in total), in the City. The number of additional students generated per dwelling type is also estimated by school level, as shown in Tables 4.7.F and 4.7.G below.

Table 4.7.F: New Students Generated by the Proposed Project-Single-Family Units[1]

School Level	Projected Buildout Single-family Units	Generation Rate (Single-family detached units)[2]	LBUSD Students added by Proposed Project (2040)
Elementary Schools	664	0.2754	183
Middle Schools	664	0.0773	51
High Schools	664	0.1449	96
Total	**-**	**-**	**330**

1 Single family Detached Generation Rate used.
2 Long Beach Unified School District. *School Facilities Needs Analysis* (May 14, 2015).
LBUSD = Long Beach Unified School District

Table 4.7.G: New Students Generated by the Proposed Project-Multi-family Units

School Level	Projected Buildout Multi-family Units	Generation Rate (Multi-Family)[1]	LBUSD Students added by Proposed Project (2040)
Elementary Schools	11,080	0.1812	2,008
Middle Schools	11,080	0.0470	521
High Schools	11,080	0.1007	1,116
Total	**-**	**-**	**3,645**

1 Long Beach Unified School District. *School Facilities Needs Analysis* (May 14, 2015).
LBUSD = Long Beach Unified School District

1 LBUSD. 2015. *School Facilities Needs Analysis*. May 14.

Table 4.7.H displays the existing LBUSD (2014–2015) facilities capacity as compared to the projected student enrollment at General Plan buildout (2040). As shown in Table 4.7.H, student enrollment currently exceeds the LBUSD facilities capacity at the high school level, while the facilities capacity exceeds student enrollment at the elementary school and middle school levels in the 2014–2015 school year. With General Plan build out, elementary and middle school enrollment in LBUSD would continue to be within the 2014–2015 LBUSD facilities capacity, but high school and total estimated enrollment in LBUSD in 2040 would exceed the LBUSD current facilities capacity.

Table 4.7.H: LBUSD Current Facilities Capacity (2014–2015) and Projected Demand at 2040 General Plan Buildout

School Level	2014–2015 LBUSD Facilities Capacity[1]	2014–2015 LBUSD Student Enrollment[1]	New LBUSD Students added by Proposed Project (2040)	Total Enrollment (2040)	Excess/ (Shortage) Capacity
Elementary Schools	44,779	42,581	2,191	44,772	7
Middle Schools	13,776	11,758	572	12,330	1,446
High Schools	22,950	25,370	1,212	26,582	(3,632)
Total	**81,505**	**79,709**	**3,975**	**83,684**	**(2,179)**

Source: Long Beach Unified School District and LSA Associates, Inc.
[1] Long Beach Unified School District. *School Facilities Needs Analysis* (May 14, 2015).
LBUSD = Long Beach Unified School District

As noted above, all future development projects in the City would be required to pay school developer fees to LBUSD for the operation, maintenance, and development of schools to accommodate future student enrollment. Table 4.7.I displays the current (2015) developer fees adopted by LBUSD. These fees are calculated per square footage of residential, commercial, and industrial development. Project applicants would be required to pay the adopted school developer fees to LBUSD prior to the issuance of a building permit.

Table 4.7.I : LBUSD Current School Developer Fees (2015)

Type of Development	Fee Type	Fee per SF
Residential -Level I (Residential additions over 500 sf)	Statutory school fees	$3.36
Residential-Level II (New Residential Construction and Residential Redevelopment)	Alternative school fees	$4.32
Industrial or Commercial-Level I	Statutory school fees	$0.54

Source: Long Beach Unified School District. Developer Fees: Guide to School Facility Fees (revised July 21, 2015). Website: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=2506 (accessed January 14, 2016).
LBUSD = Long Beach Unified School District
sf = square feet

If student growth generated by General Plan buildout (2040) exceeds the estimates identified above, the acquisition, modernization, or modification of school sites to accommodate additional facilities could be required. The LBUSD reserves its right to negotiate schools impact fees with developers per square footage for residential units in order to fund school improvements. The proposed project does not include any physical improvements; therefore, future school facility needs would be funded by fees collected by future development projects within the City. Further, all future projects consistent with the proposed LUE and UDE would be required to undergo project-specific environmental review and comply with the provision of school developer fees for new/altered facilities. Additional school resources would also continue to be funded by an increase in tax revenue as a result of future growth. Therefore, impacts of the proposed project related to student generation and the potential need for additional school facilities would be less than significant, and no mitigation is required.

Threshold 4.7.5: Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any other *public facilities*?

Less than Significant Impact. The proposed project does not include any physical improvements but would allow for new PlaceTypes that would facilitate an increase in housing units in the City and could increase the demand for LBPL facilities. As previously identified, implementation of the proposed project could result in the development of approximately 11,744 dwelling units and the addition of 51,230 persons.

Public Library. Demand for library services is typically determined based on the size of the resident population. The City has not formally adopted a service standard of library space per capita, but the City did establish a target of 0.45 sf per capita in its budget for FY 2007. Using this standard and the estimated future population of approximately 484,485, the LBPL system would need to contain a total of 218,018[1] sf to meet this target. In total, the existing LBPL system has approximately 220,265 sf of library facilities, which is adequate to serve the City's existing population and sufficiently support the projected demand generated by the buildout of the General Plan. Additionally, the North Branch Library is scheduled to move to a new, larger facility later in 2016. The move to a larger facility will increase the LBPL square footage by approximately 17,700 sf.[2] Therefore, the proposed project's increase in demand on library services can be served by the existing facilities and would not adversely affect library services in the project area. As such, the proposed project would have less than significant impacts related to public libraries, and no mitigation is required.

[1] 0.45 square feet per the City's population of 484,485 in 2040.
[2] LBPL. Manager of Main Library Services, Susan Jones. Email Correspondence. January 19, 2016.

Electricity. Growth in the City would result in additional demand for electricity. The existing energy demand (2012) is 1,634.2 GWh. As illustrated by Table 4.7.J, Forecast Electricity Demands, future growth occurring under the proposed project would generate electricity demand of approximately 1,827.71 GWh in the General Plan buildout year of 2040. As such, the project-related increase in electricity demand would be approximately 11 percent greater than the existing electricity demand. Because no 2040 forecast was available, the 2025 high demand consumption forecast was extrapolated to the 2040 high demand consumption forecast.[1] Using this calculation, the 2040 high demand consumption would be 151,484 GWh in 2040. The 2040 proposed project build out would represent approximately 1 percent of the extrapolated 2040 peak demand. Therefore, it is anticipated that build out of the General Plan would be within the forecasted electricity demand for 2040 build out. The projected electricity demand does not include the State's 50 percent increase in energy efficiency Renewable Portfolio Standard (RPS) for new residences and buildings nor does not account for in Title 24 building energy efficiency as a result of changes to the proposed 2017 CalGreen Building and Energy Efficiency Standards for new residences and buildings.

New facilities to support the project-related demand for electricity would be constructed in accordance with the demand for the new service. Because developments that would be considered under the proposed project have not yet been designed or proposed, the specific electricity facilities that would need to be installed to serve such future developments are unknown at this time, as are the potential environmental impacts of such installations. Potential environmental impacts would be evaluated on a project-by-project basis. However, it is not anticipated that major new facilities would be necessary to serve new development facilitated by project approval at General Plan buildout (2040). Furthermore, because the City is largely built out, the construction of new electrical substations is also not expected to be necessary. Therefore, growth in demand for electricity is anticipated to be less than significant, and no mitigation is required.

Natural Gas. Future development occurring under the proposed project would result in additional demand for natural gas. According to the California Gas Report, the existing natural gas demand (2012) in the LBGO is 8,906 MMcf.[2] As illustrated by Table 4.7.K, Forecast Natural Gas Demands, future growth occurring under the proposed project would generate a natural gas demand of 13,303.22 MMcf, or an approximately 33 percent increase in natural gas demand. The projected natural gas demand does not include the State's 50 percent increase in energy efficiency RPS for new residences and buildings nor does not account for in Title 24 building energy efficiency as a result of changes to the proposed 2017 CalGreen Building and Energy Efficiency Standards for new residences and buildings.

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1 The high electricity demand annual growth rate of 1.58 percent was applied to the 2025 demand of 119,741 GWh and was carried forth through General Plan buildout (or a period of 15 years), resulting in an estimated demand of 151,483.74 in 2040.

2 While the SCAQMD's natural gas demand rates resulted in a higher (12,202.24 MMcf) natural gas usage for the year 2012, the 2012 natural gas demand of 8,906 MMcf (as reported in the SoCal Gas reported in the So Cal Gas Report) has been utilized for purposes of this analysis as it represents a more conservative analysis.

Table 4.7.J: Forecast Electricity Demands

Electricity Demand	Unit Type	Usage Factor[1]	2012	2040 Buildout	2012 Usage kwh/yr	2040 Buildout kwh/yr	Project-Related Increase kwh/yr	2012 Usage gwh/yr	2040 Buildout gwh/yr	Project-Related Increase gwh/yr	Percentage Increase
Residential	kwh/unit/yr	5626.5	163,794	175,538	921,586,941	987,664,557	66,077,616	921.59	987.66	66.08	7%
Commercial /Retail	kwh/sf/yr	13.55	21,015,600	24,484,100	284,761,380	331,759,555	46,998,175	284.76	331.76	47.00	14%
Office	kwh/sf/yr	12.95	7,984,400	8,977,500	103,397,980	116,258,625	12,860,645	103.40	116.26	12.86	11%
Industrial	kwh/sf/yr	4.35	17,571,000	25,240,600	76,433,850	109,796,610	33,362,760	76.43	109.80	33.36	30%
Public Facilities/Institutional	kwh/sf/yr	11.55	21,474,000	24,435,800	248,024,700	282,233,490	34,208,790	248.02	282.23	34.21	12%
Total	**-**	**-**	**-**	**-**	**1,634,204,851**	**1,827,712,837**	**193,507,986**	**1,634.20**	**1,827.71**	**193.51**	**11%**

Source: LSA Associates, Inc. (May 2016).
1 SCAQMD, CEQA Air Quality Handbook, Table A-9-11-A, 1993.

Table 4.7.K: Forecast Natural Gas Demands

Natural Gas Demand	Unit Type	Usage Factor[1]	2012	2040 Buildout	2012 Usage cf/month	2040 Buildout cf/month	Project-Related Increase cf/month	2012 Usage cf/yr	2040 Buildout cf/yr	Project-Related Increase cf/yr	2012 Usage MMcf/yr	2040 Buildout MMcf/yr	Project-Related Increase MMcf/yr
SF Residential	cf/unit/month	6,665	63,934	64,598	426,120,110	430,545,670	4,425,560	5,113,441,320	5,166,548,040	53,106,720	5,113.44	5,166.55	53.11
MF Residential	cf/unit/month	4,011.5	99,860	110,940	400,588,390	445,035,810	44,447,420	4,807,060,680	5,340,429,720	533,369,040	4,807.06	5,340.43	533.37
Commercial /Retail	cf/sf/month	2.9	21,015,600	24,484,100	60,945,240	71,003,890	10,058,650	731,342,880	852,046,680	120,703,800	731.34	852.05	120.70
Office	cf/sf/month	2	7,984,400	8,977,500	15,968,800	17,955,000	1,986,200	191,625,600	215,460,000	23,834,400	191.63	215.46	23.83
Industrial	cf/sf/month	2.9	17,571,000	25,240,600	50,955,900	73,197,740	22,241,840	611,470,800	878,372,880	266,902,080	611.47	878.37	266.90
Public Facilities/Institutional	cf/sf/month	2.9	21,474,000	24,435,800	62,274,600	70,863,820	8,589,220	747,295,200	850,365,840	103,070,640	747.30	850.37	103.07
Total	**-**	**-**	**-**	**-**	**1,016,853,040**	**1,108,601,930**	**91,748,890**	**12,202,236,480**	**13,303,223,160**	**1,100,986,680**	**12,202.24[2]**	**13,303.22**	**1,100.99**

Source: LSA Associates, Inc. (May 2016).
1 SCAQMD, CEQA Air Quality Handbook, Table A9-12-A, 1993.
2 While the natural gas demand rates provided in the SCAQMD CEQA Air Quality Handbook resulted in a natural gas demand of (12,202.24 MMcf for the year 2012, the 2012 natural gas demand of 8,906 MMcf, as reported in the SoCal Gas reported in the So Cal Gas Report, has been utilized for purposes of this analysis as it represents a more conservative analysis.

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Gas service will be added to the existing system operated and maintained by the City of Long Beach Gas and Oil Department, as necessary to meet the requirements of individual projects within the City. Because developments that would be considered under the proposed project have not yet been designed or proposed, the specific improvements to existing natural gas facilities that would need to be implemented to serve future developments are unknown at this time, as are the potential environmental impacts of such improvements. Potential environmental impacts would be evaluated on a project-by-project basis. However, it is not anticipated that major improvements would be necessary to serve the City and new development facilitated by the project approval. Therefore, growth in demand for natural gas is anticipated to be less than significant, and no mitigation is required.

Table 4.7.L includes a project-specific consistency analysis with applicable Appendix F considerations.

Table 4.7.L: Proposed Project Comparison to *State CEQA Guidelines* Appendix F

Appendix F Items for Consideration	Proposed Project
1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.	Energy use during construction of future development facilitated by project approval would primarily involve gasoline and diesel fuel and represents a short-term use of readily available resources. Potential impacts would be less than significant, and no mitigation is required. Operational energy needs include natural gas and electricity. Build out of the proposed project, including new development proposed within the Areas of Change, would result in a 2040 natural gas demand of 13,303.22 MMcf. Demand for electricity under buildout of the General Plan would be 1,827.71 GWh. Future development under the proposed project would be required to meet or exceed the provisions included in the Title 24 Green Building Code. Additionally, because developments that would be considered under the proposed project have not been designed or proposed at this time, potential improvements to the current energy and natural gas facilities would be identified at the time such projects are considered. Therefore, potential impacts would be less than significant, and no mitigation is required.
2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.	The proposed project does not include physical improvements, but future development facilitated by the proposed project would be required to meet or exceed the provisions included in the Title 24 Green Building Code. The 2040 with project demand for energy supplies would be an increase over the current General Plan build out, but would remain within the forecasted demands for each utility.
3. The effects of the project on peak and base period demands for electricity and other forms of energy.	The proposed project's impact relative to peak and base demands for electricity and other forms of energy is discussed in Section 4.9.10, Cumulative Impacts. Future projects would implement a variety of energy conservation measures and would be required to meet the California Building Energy Efficient Standards contained in Title 24. Additionally, because developments that would be considered under the proposed project have not been designed or proposed at this time, potential improvements to the current energy and natural gas facilities would be identified at the time such projects are proposed and considered. Potential impacts would be less than significant, and no mitigation is required.

Table 4.7.L: Proposed Project Comparison to *State CEQA Guidelines* Appendix F

Appendix F Items for Consideration	Proposed Project
4. The degree to which the project complies with existing energy standards.	Future development under the proposed project would be required to meet or exceed the provisions included in the Title 24 Green Building Code. Potential impacts would be less than significant, and no mitigation is required.
5. The effects of the project on energy resources.	Future development under the proposed project would be required to meet or exceed the provisions included in the Title 24 Green Building Code. Further, the energy demands of the proposed project would be included in the calculation of delivery capabilities and projected loads for SCE and LBGO. The estimated amount of natural gas consumption for the General Plan build out is approximately 13,303.22 MMCf, or an 11 percent overall increase in electricity demand. Electricity use is projected to be 1,8277.71 GWh at General Plan build out, or a 33 percent overall increase in natural gas demand. The increased demand for natural gas and electricity does not account energy efficiency standards. Future improvements to existing electricity and natural gas facilities would be determined on a project-by-project basis. However, it is not anticipated that major new facilities would be necessary to serve new development facilitated by project approval at General Plan build out (2040). Potential impacts would be less than significant, and no mitigation is required
6. The Project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.	The proposed project would be located in an urban area currently served by public transportation. Transit service is provided within the project vicinity by Los Angeles County Metropolitan Transportation Authority (Metro) and Long Beach Transit. It is anticipated that the existing transit service in the project area would be able to accommodate the project-generated transit trips. The estimated traffic from the proposed project Areas of Change was addressed in Section 4.8, Transportation/ Traffic, in the Draft EIR and the T*raffic Impact Analysis* (TIA) (LSA 2016). The growth in traffic is expected to generate an additional 87,564 ADTs in year 2040 within the Areas of Change. Commuting distances would likely be reduced for a portion of those trips due to the design of the proposed project with mixed uses. For example, the proposed project concentrates new growth within the TOD PlaceType (along the Metro Blue Line in the City's Downtown) to encourage new residents to utilize public transit. Furthermore, the proposed project encourages the creation of bicycle and pedestrian paths and proposes improvements to existing paths to improve the City's bikability and walkability. The project also establishes PlaceTypes in place of traditional land use types, which allow for increased flexibility and promote mixed uses, which would improve the City's walkability. While the project would promote new development which would increase transportation energy use in the City, the project would result in a reduction in transportation in energy usage over existing and currently projected growth patterns due to the project's focus on improving alternative transportation modes within the City.

CEQA = California Environmental Quality Act
EIR = Environmental Impact Report
Metro = Los Angeles County Metropolitan Transportation Authority
SCE = Southern California Edison

Table 4.7.L: Proposed Project Comparison to *State CEQA Guidelines* Appendix F

Appendix F Items for Consideration	Proposed Project

LBGO = Long Beach Gas and Oil

4.7.9 Mitigation Measures

There would be no significant adverse impacts of the proposed project related to public services. No mitigation is required.

4.7.10 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for public services and utilities. The planning area includes the entire 50 square miles within the limits of the City of Long Beach; therefore, the cumulative area for public services is listed below for each individual public service provider.

Fire Protection. The geographic area for cumulative analysis of fire protection services is defined as the LBFD service territory, which is defined as the City of Long Beach. Each future project within the City would be evaluated individually, and project-specific mitigation would be required as needed.

The City is almost entirely built out, with most new development occurring as in-fill projects. The LBFD anticipates cumulative demand in order to plan for overall service. This cumulative demand is anticipated to be met through project implementation as the LUE establishes the development of future fire stations as a preferred land use type in the following PlaceTypes: Founding and Contemporary Neighborhood, Multi-Family Residential – Low and Moderate, Neighborhood-Serving Centers and Corridors – Low and Moderate, and Transit-Oriented Development – Low and Moderate, and Industrial. Furthermore, through implementation of the proposed project, the City will reduce the potential for dangerous fires by concentrating development within urban areas where there is a low fire risk and by requiring that future projects comply with applicable City and State regulations related to fire. Therefore, the proposed project's contribution to fire protection impacts would not be cumulatively considerable, and no mitigation is required.

Police Protection. The geographic area for cumulative analysis of police projection is defined as the service area for the LBPD, which is defined as the City of Long Beach. Each future project within the project area would be evaluated individually, and project-specific mitigation would be required as needed.

The City is almost entirely built out, with most new development occurring as in-fill projects. This cumulative demand is anticipated to be met through project implementation as the LUE establishes the development of future police stations as a preferred land use type in the following PlaceTypes: Founding and Contemporary Neighborhood, Multi-Family Residential – Low and Moderate, Neighborhood-Serving Centers and Corridors – Low and Moderate, Transit-Oriented Development – Low and Moderate, and Industrial. In addition, the need for additional law enforcement associated

with cumulative growth would be addressed through the annual budgeting process when budget adjustments would be made in an effort to meet changes in service demand. Therefore, the proposed project's contribution to police protection impacts would not be cumulatively considerable, and no mitigation is required.

Public Schools. The geographic area for the cumulative analysis of public schools is defined as the service territory for the LBUSD. Each future project within the project area would be evaluated individually, and project-specific mitigation would be required as needed.

The proposed project would generate approximately 3,977 school-aged children, which would lead to an increased demand on existing educational school facilities. Future projects consistent with the LUE would be accounted for on a project-by-project basis. Residential projects located within the LBUSD service area, but outside the City of Long Beach, would have the potential to generate school-aged children, and, as a result, increase demand on educational school facilities. As noted above, LBUSD would assess developer fees to future projects within its service area in an effort to fund future schools needed to meet the project-related increase in school-aged children. Further, while the City acknowledges that new development would increase demand for school facilities, the City is precluded by Senate Bill 50 from considering this a significant CEQA impact where the collection of school impacts fees occurs. Therefore, the proposed project would not contribute to any cumulative school impacts, and no mitigation is required.

Public Libraries. The geographic area for the cumulative analysis of public libraries is defined as the service territory for the LBPL system. Each future project within the project area would be evaluated individually, and project-specific mitigation would be required as needed. The City currently meets the LBPL system's square footage requirements, and the proposed project would not exceed the LBPL system's ability to meet project demand at General Plan buildout with existing library services. Therefore, the proposed project's contribution to library impacts would not be cumulatively considerable, and no mitigation is required.

Electricity. The geographic area for the cumulative analysis of impacts to the provision of electricity is the service territory of SCE. SCE's service area covers approximately 50,000 square miles, spanning central, coastal, and southern California, with a total of 15 million business and residential accounts. The CEC estimates that both the net peak demand and the net energy load within SCE's service territory will continue to grow annually by 0.63 percent and 1.15 percent, respectively.

Buildout of the General Plan would result in an operational electricity demand of 1,827.71 GWh (an 11 percent increase in demand over existing 2012 conditions). The SCE service territory is forecasted to have high demand consumption of 119,741 GWh in 2025. Because no 2040 forecast was available, the 2025 high demand consumption forecast was extrapolated to the 2040 high demand consumption forecast. Using this calculation, the 2040 high demand consumption would be 151,484 GWh in 2040. The 2040 proposed project build out would represent approximately 1 percent of the extrapolated 2040 peak demand. Therefore, it is anticipated that build out of the General Plan would be within the forecasted electricity demand for 2040 build out.

Although the proposed project has the potential to increase electrical demand in the area, SCE has identified adequate capacity to handle increase in electrical demand, and any increase in electrical demand resulting from the proposed project would be incremental compared to an increase in regional electrical demand. Compliance with Title 24 of the California Administrative Code regulates energy consumption in new construction and regulates building energy consumption for heating, cooling, and lighting for future development under the proposed project. Therefore, in relation to the cumulative study area, the proposed project's incremental contribution to increased demand for electricity would not be cumulatively considerable, and no mitigation is required.

Natural Gas. The geographic area for the cumulative analysis of impacts to the provision of natural gas is the service territory for LBGO. LBGO's service area covers the Cities of Long Beach and Signal Hill and portions of surrounding communities, including the cities Bellflower, Compton, Lakewood, Los Alamitos, Paramount, and Seal Beach. According to the 2014 California Gas Report, the future LBGO annual demand for natural gas is projected to reach 9,605 MMcf in 2035. Build out of the General Plan (2040) would result in an operational natural gas demand of 13,303.22 MMcf. Therefore, the anticipated 2040 natural gas demand represents would exceed the LBGO's projected natural gas demand for the year 2035. While future development under the General Plan buildout (2040) scenario would exceed current projections for the year 2035, all future development under the proposed project would be subject to Title 24 requirements and would be evaluated on a case-by-case basis to determine the need for specific distribution infrastructure improvements. Furthermore, gas service would be added to the existing system by LBGO, as necessary, to meet the requirements of individual development projects in the City. Therefore, the proposed project's contribution to cumulative natural gas impacts would be considered less than significant.

4.7.11 Level of Significance after Mitigation

No mitigation measures are required and all potential impacts related to public services would remain less than significant.

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4.8 TRANSPORTATION/TRAFFIC

4.8.1 Introduction

This section analyzes the existing and planned transportation/traffic and circulation conditions for the planning area, and identifies circulation impacts that may result during, or subsequent to, the implementation of the proposed General Plan Land Use and Urban Design Elements project (proposed project). The analysis contained in this section is based on the *Traffic Impact Analysis, General Plan Land Use and Urban Design Elements, City of Long Beach, California* (TIA) prepared by LSA Associates, Inc. (LSA) (May 2016) (Appendix E).

4.8.2 Methodology

The TIA prepared for the proposed project is consistent with the objectives and requirements of the City of Long Beach (City), the Los Angeles County (County) Congestion Management Program (CMP) (2010), and applicable provisions of the California Environmental Quality Act (CEQA), including disclosure of project impacts in both existing and cumulative horizon years.

Background Information: The Mobility Element. The City adopted its General Plan Mobility Element in October 2013. The Mobility Element analyzed existing and future (2035) traffic conditions. Future traffic conditions reflected growth in the City's population and employment, as well as growth in regional traffic. No changes to land use were presumed in future conditions.

The Mobility Element outlines goals for a transportation system that is more responsive to all travel modes, with a particular emphasis on the mobility of people. Some of these goals (e.g., increased abilities to walk, bike, and use transit) would be supported by the changes in the proposed Land Use Element (LUE). These goals would also be consistent with the intent of Senate Bill (SB) 375 and the Climate Protection Act of 2008, which mandates closer linkage between land use and transportation infrastructure.

Given that the Mobility Element places an emphasis on alternative modes of transportation, measuring the performance of the transportation system based solely on the convenience of travel for private automobiles will be replaced with other accessibility and mobility metrics. Consequently, the City's Mobility Element states the intent of the City to adopt a multimodal level of service (LOS) policy; however, at the present time, the vehicle LOS policy is still in place.

The Mobility Element included a vehicular LOS analysis of 88 intersections throughout the City. The locations of these intersections are illustrated on Figure 4.8.1, Study Intersections.

Project Study Area. The project study area includes the 88 intersections that were analyzed in the Mobility Element. The project study area was reviewed and approved by the City's Traffic Engineer.

Intersection Level of Service Methodology. As previously stated, while the City views mobility as the movement of people and desires to analyze the performance of the circulation system for all travel modes, a robust methodology for multimodal analysis is not currently available. Therefore, the

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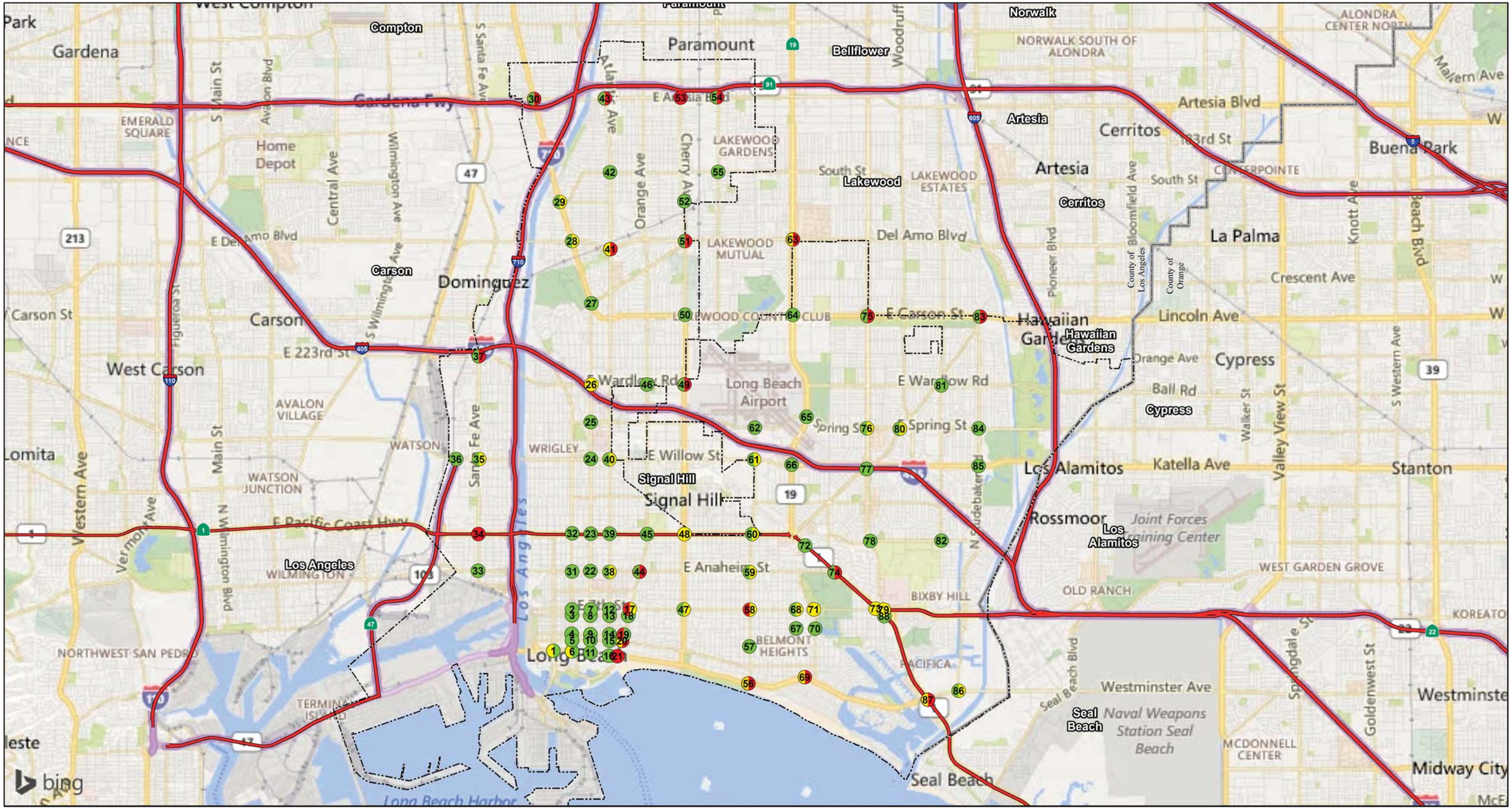

LSA

LEGEND

City Boundary

2008 Intersections
(AM left side/PM right side)

- Los A, B, C
- Los D
- Los E, F

0 0.625 1.25
Miles

SOURCE: Bing Maps (2013)

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FIGURE 4.8.1

Long Beach General Plan
Land Use and Urban Design Elements

Study Intersections

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current methodology, which focuses on the movement of automobiles, has been utilized for the purposes of this analysis. Because the movement of automobiles through a roadway network is metered by the performance of intersections along the network, the City's methodology requires the analysis of intersection performance. Specifically, the performance of intersections was examined during the busiest morning commute hour (a.m. peak hour) and the busiest afternoon commute hour (p.m. peak hour) using intersection capacity utilization (ICU methodology).

The ICU methodology compares the volume-to-capacity (v/c) ratios of conflicting turn movements at an intersection, sums up these critical conflicting v/c ratios for each intersection approach, and determines the overall ICU. The resulting ICU is expressed in terms of LOS, where LOS A represents free-flow activity and LOS F represents overcapacity operation. Typical intersection operations by LOS grade are described below in Table 4.8.A.

Table 4.8.A: LOS Descriptions

LOS	Description
A	No approach phase is fully utilized by traffic, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are nearing full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally, drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is attained no matter how great the demand.
F	This level describes forced-flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream.

Source: *Traffic Impact Analysis,* LSA Associates, Inc. (May 2016) (Appendix E).

The relationship between LOS and the ICU value (i.e., v/c ratio) is shown in Table 4.8.B.

Table 4.8.B: LOS/ICU Value Comparison

LOS	Volume-to-Capacity Ratio (ICU Methodology)
A	≤ 0.60
B	>0.60 and ≤ 0.70
C	>0.70 and ≤ 0.80
D	>0.80 and ≤ 0.90
E	>0.90 and ≤ 1.00
F	>1.00

Source: *Traffic Impact Analysis,* LSA Associates, Inc. (May 2016) (Appendix E).
ICU = Intersection Capacity Utilization
LOS = level of service

The City considers LOS D as the upper limit of satisfactory operations for total intersection operation. The City determines that a significant impact has occurred where project traffic causes an intersection to deteriorate from LOS D to LOS E or F, or if the project causes an increase in v/c ratio of 0.02 or greater when the intersection is operating at LOS E or F in the baseline conditions.

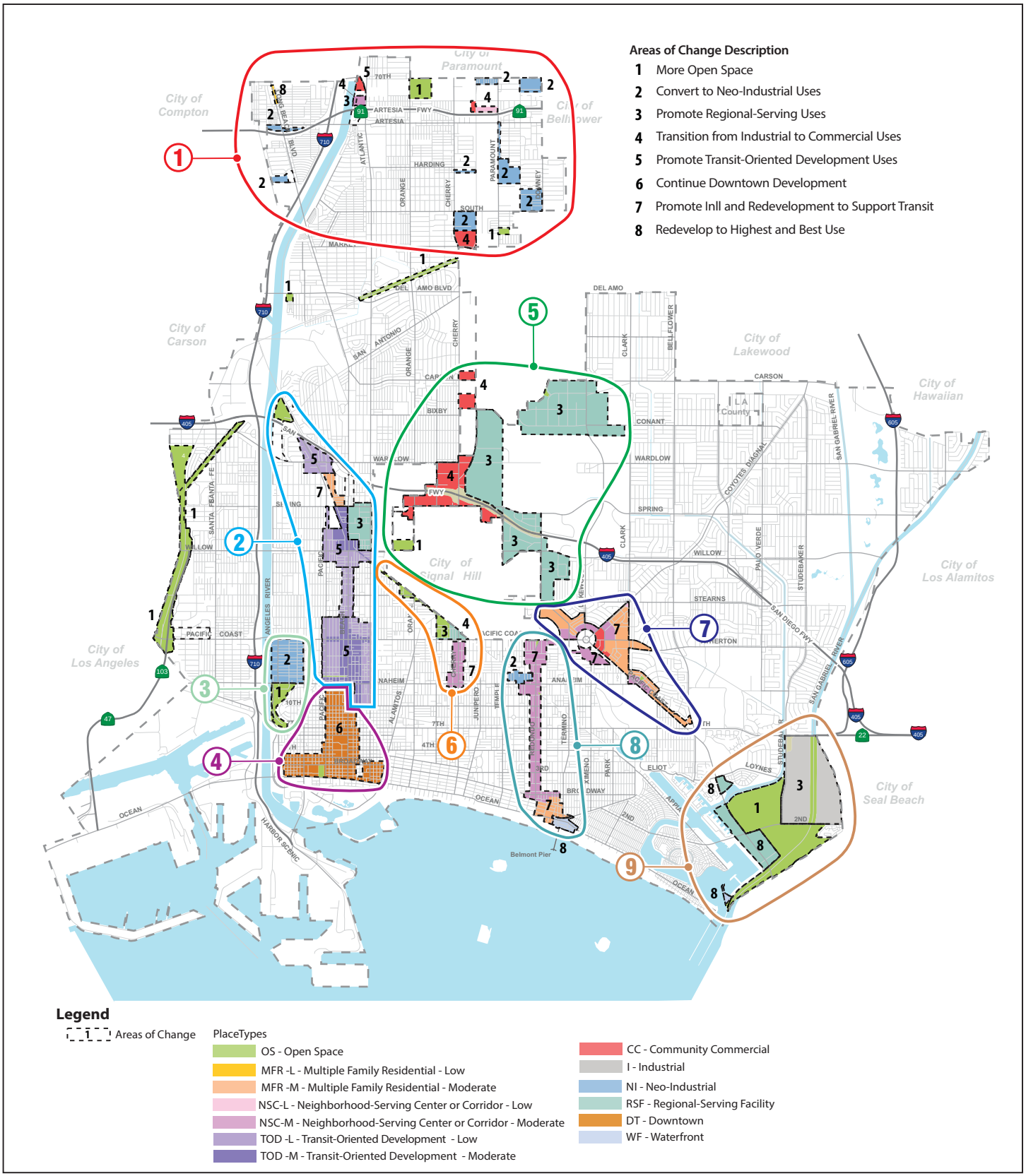
Trip Generation and Assignment. The LUE identifies eight Major Areas of Change throughout the City. These areas have been identified by the City as areas where changes associated with the proposed LUE would be focused. Specifically, these changes could result in changes to land use classification and/or increases in land use density that have the potential to increase the number of vehicle trips. The effects of increased traffic are felt most acutely near the area of change. The eight Major Areas of Change are listed below.

Major Areas of Change:

1. More Open Space
2. Convert to Neo-Industrial Uses
3. Promote Regional Serving Uses
4. Transition from Industrial to Commercial Uses
5. Promote Transit-Oriented Development Uses
6. Continue Downtown Development
7. Promote Infill and Redevelopment to Support Transit
8. Redevelop to Highest and Best Use

Because the proposed project includes the potential to alter land use classifications and increase land use density within these Major Areas of Change, these eight areas have been grouped together in specific City districts. Figure 4.8.2, Districts of Change, illustrates these groupings and the districts where they occur. To ease reference to these districts, they are labeled as North Long Beach, Mid-City, Riverside, Downtown, Airport, Pacific Coast Highway (PCH), Traffic Circle, Redondo, and Southeast Area Development Improvement Plan (SEADIP). Although traffic volumes would increase throughout the City in the General Plan horizon year (2040), traffic volume increases as a result of the proposed LE would be concentrated within these districts. As such, this analysis focuses on the increase in traffic within these districts.

Traffic volume projections for the future (2040) conditions for the proposed project were based on projections established in the Mobility Element. The Mobility Element established future traffic volume projections (2035) based on conditions established by the Southern California Association of Governments (SCAG) traffic model. The SCAG model uses socioeconomic data (e.g., housing, population, and employment) to calculate travel demand. The SCAG model does not reflect the proposed changes to the City's General Plan LUE and was not available to reexamine traffic conditions for the 2040 horizon, as proposed by the project. However, comparisons have been made between the socioeconomic data for future (2035) conditions and socioeconomic data associated with the proposed project (2040). For example, if socioeconomic factors for population and employment are anticipated to increase by 10 percent within a Major Area of Change, then traffic to and from that Major Area of Change could also be anticipated to increase by 10 percent.



LSA

LEGEND

1. North Long Beach
2. Mid City
3. Riverside
4. Downtown
5. Airport
6. PCH
7. Traffic Circle
8. Redondo
9. SEADIP

N

FIGURE 4.8.2

Long Beach General Plan
Land Use and Urban Design Elements
Districts of Change

SOURCE: Proposed Land Use Element, City of Long Beach, June 2015

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Socioeconomic projections were available for purposes of forecasting the total new housing, population, and employment growth attributable to each of the Major Areas of Change. These socioeconomic factors were allocated to each Major Area of Change based on the size (percentage) of each Major Area of Change. For example, if one Major Area of Change that called for the conversion of Neo-Industrial uses was 10 percent of the total area targeted for the conversion of existing uses to Neo-Industrial uses, then it was allocated 10 percent of the socioeconomic growth attributable to the total area targeted for the conversion of uses to Neo-Industrial uses. One hundred percent of all socioeconomic growth anticipated for each Major Area of Change was allocated in this manner to ensure that growth in socioeconomic factors for each City district was captured and then compared to baseline socioeconomic factors.

Baseline socioeconomic factors and traffic volumes were queried from the SCAG traffic model. Data for socioeconomic factor input and traffic volume output were available for reach traffic analysis zone (TAZ) within the City. A TAZ is the unit of analysis within a traffic model. Traffic models examining a focused area could have smaller TAZs, whereas traffic models analyzing a larger area (like the SCAG regional traffic model) have larger TAZs by necessity. Socioeconomic data associated with each SCAG-level TAZ was then utilized to generate trips that were then distributed within the roadway network. TAZ-level socioeconomic factors and traffic volume were allocated to the areas affected by change based on a proportionate size of the Major Area of Change compared to the SCAG-level TAZ. For example, if a Major Area of Change was 15 percent of the size of the TAZ, it was allocated 15 percent of the socioeconomic factors and traffic of the TAZ.

Growth in socioeconomic factors was then compared and used to project traffic volumes, assuming the relationship between socioeconomic factors and traffic remained constant. For example, in the Mid-City area, socioeconomic factors were estimated to increase by 23.3 percent in the Major Areas of Change. Therefore, traffic volume to and from the Major Areas of Change was estimated to increase by 23.3 percent. In the Mid-City area, this meant approximately 1,700 more trips in the a.m. peak hour and approximately 2,300 more trips in the p.m. peak hour. Based on the total traffic volume for all the TAZs within the district, traffic volumes would increase by 11 percent within the Mid-City area.

For the purposes of this analysis, it was presumed that the general increase in traffic volume within a City district would affect intersections within that district equally. If traffic volumes were believed to be increasing by 11 percent, then the v/c ratio at intersections could be estimated to increase by 0.11. This procedure was applied to all 88 study intersections.

4.8.3 Existing Environmental Setting

Existing Circulation System. The project study area includes the 88 intersections analyzed in the Mobility Element. As illustrated by Figure 4.8.1, Study Intersections, these intersections are located throughout the City.

Existing Baseline. The Mobility Element disclosed the existing (2008) v/c and LOS at the 88 intersections. Table 4.8.C, Mobility Element Existing Levels of Service, summarizes the LOS analysis at these intersections. As illustrated by Table 4.8.C, 6 intersections operate at LOS E or F in the a.m. peak hour and 19 intersections operate at LOS E or F in the p.m. peak hour.

Table 4.8.C: Mobility Element Existing Levels of Service

		Existing 2008			
		AM		PM	
	Intersection	V/C	LOS	V/C	LOS
1	Magnolia Ave/Ocean Blvd	0.848	D	0.744	C
2	Pacific Ave/7th St	0.677	B	0.525	A
3	Pacific Ave/6th St	0.415	A	0.630	B
4	Pacific Ave/3rd St	0.532	A	0.387	A
5	Pacific Ave/Broadway	0.360	A	0.699	B
6	Pacific Ave/Ocean Blvd	0.814	D	0.713	C
7	Long Beach Blvd/7th St	0.730	C	0.550	A
8	Long Beach Blvd/6th St	0.455	A	0.614	B
9	Long Beach Blvd/3rd St	0.512	A	0.382	A
10	Long Beach Blvd/Broadway	0.315	A	0.613	B
11	Long Beach Blvd/Ocean Blvd	0.723	C	0.632	B
12	Atlantic Ave/7th St	0.762	C	0.521	A
13	Atlantic Ave/6th St	0.458	A	0.559	A
14	Atlantic Ave/3rd St	0.487	A	0.356	A
15	Atlantic Ave/Broadway	0.261	A	0.604	B
16	Atlantic Ave/Shoreline Ave, Ocean Blvd	0.649	B	0.607	B
17	Alamitos Ave/7th St	**0.902**	**E**	0.759	D
18	Alamitos Ave/6th St	0.368	A	0.436	A
19	Alamitos Ave/3rd St	**1.048**	**F**	0.659	B
20	Alamitos Ave/Broadway	0.900	D	**0.945**	**E**
21	Alamitos Ave/Shoreline Ave, Ocean Blvd	**1.107**	**F**	**1.040**	**F**
22	Long Beach Blvd/Anaheim St	0.527	A	0.685	B
23	Long Beach Blvd/Pacific Coast Hwy	0.694	B	0.797	C
24	Long Beach Blvd/Willow St	0.694	B	0.756	C
25	Long Beach Blvd/Spring St	0.570	A	0.709	C
26	Long Beach Blvd/Wardlow Rd	0.837	D	0.827	D
27	Long Beach Blvd/San Antonio	0.482	A	0.773	C
28	Long Beach Blvd/Del Amo Blvd	0.799	C	0.833	D
29	Long Beach Blvd/Market St	0.581	A	0.878	D
30	Long Beach Blvd/Artesia Blvd	0.712	C	**1.027**	**F**
31	Pacific Ave/Anaheim St	0.614	B	0.706	C
32	Pacific Ave/Pacific Coast Hwy	0.663	B	0.636	B
33	Santa Fe Ave/Anaheim St	0.557	A	0.669	B
34	Santa Fe Ave/Pacific Coast Hwy	**0.990**	**E**	**0.942**	**E**
35	Santa Fe Ave/Willow St	0.751	C	0.851	D
36	Terminal Island Fwy/Willow St	0.390	A	0.500	A
37	Santa Fe Ave/Wardlow Rd	0.799	C	**0.910**	**E**
38	Atlantic Ave/Anaheim St	0.647	B	0.818	D
39	Atlantic Ave/Pacific Coast Hwy	0.603	B	0.758	C
40	Atlantic Ave/Willow St	0.681	B	0.890	D
41	Atlantic Ave/Del Amo Blvd	0.803	D	**0.986**	**E**
42	Atlantic Ave/South St	0.451	A	0.785	C
43	Atlantic Ave/Artesia Blvd	0.744	C	**0.976**	**E**
44	Alamitos Ave/Anaheim St	0.636	B	**0.914**	**E**
45	Orange Ave/Pacific Coast Hwy	0.608	B	0.793	C
46	Orange Ave/Wardlow Rd	0.708	C	0.773	C
47	Cherry Ave/7th St	0.686	B	0.801	D

Table 4.8.C: Mobility Element Existing Levels of Service

Intersection		Existing 2008			
		AM		PM	
		V/C	LOS	V/C	LOS
48	Cherry Ave/Pacific Coast Hwy	0.805	D	0.896	D
49	Cherry Ave/Wardlow Rd	0.766	C	**0.948**	**E**
50	Cherry Ave/Carson St	0.544	A	0.706	C
51	Cherry Ave/Del Amo Blvd	0.742	C	**0.960**	**E**
52	Cherry Ave/Market St	0.708	C	0.742	C
53	Cherry Ave/Artesia Blvd	**0.916**	**E**	**1.020**	**F**
54	Paramount Blvd/Artesia Blvd	0.764	C	**0.932**	**E**
55	Paramount Blvd/South St	0.580	A	0.787	C
56	Redondo Ave/Ocean Blvd	0.867	D	**0.916**	**E**
57	Redondo Ave/3rd St	0.552	A	0.629	B
58	Redondo Ave/7th St	**0.913**	**E**	0.877	D
59	Redondo Ave/Anaheim St	0.769	C	0.833	D
60	Redondo Ave/Pacific Coast Hwy	0.733	C	0.855	D
61	Redondo Ave/Willow St	0.698	B	0.895	D
62	Redondo Ave/Spring St	0.646	B	0.769	C
63	Lakewood Blvd/Del Amo Blvd	0.825	D	**1.103**	**F**
64	Lakewood Blvd/Carson St	0.646	B	0.685	B
65	Lakewood Blvd/Spring St	0.764	C	0.763	C
66	Lakewood Blvd/Willow St	0.779	C	0.768	C
67	Ximeno Ave/4th St	0.594	A	0.719	C
68	Ximeno Ave/7th St	0.690	B	0.807	D
69	Livingston Dr/2nd St	0.843	D	**0.948**	**E**
70	Park Ave/4th St	0.599	A	0.724	C
71	Park Ave/7th St	0.808	D	0.873	D
72	Pacific Coast Hwy/Ximeno Ave	0.573	A	0.698	B
73	Pacific Coast Hwy/7th St	0.873	D	0.835	D
74	Pacific Coast Hwy/Anaheim St	0.736	C	**0.922**	**E**
75	Bellflower Blvd/Carson St	0.727	C	**0.950**	**E**
76	Bellflower Blvd/Spring St	0.788	C	0.861	D
77	Bellflower Blvd/Los Coyotes Diagonal	0.642	B	0.771	C
78	Bellflower Blvd/Atherton St	0.609	B	0.775	C
79	Bellflower Blvd/7th St	0.863	D	0.838	D
80	Los Coyotes Diagonal/Spring St	0.663	B	0.801	D
81	Palo Verde Ave/Wardlow Rd	0.412	A	0.597	A
82	Palo Verde Ave/Atherton St	0.518	A	0.718	C
83	Los Coyotes Diagonal/Carson St	0.658	B	**1.018**	**F**
84	Studebaker Rd/Spring St	0.593	A	0.724	C
85	Studebaker Rd/Willow St	0.563	A	0.715	C
86	Studebaker Rd/2nd St	0.746	C	0.887	D
87	Pacific Coast Hwy/2nd St	0.871	D	**1.053**	**F**
88	Bellflower Blvd/Pacific Coast Hwy	0.553	A	0.684	B

Source: *Traffic Impact Analysis*, LSA Associates, Inc. (May 2016) (Appendix E).

Ave = Avenue
Blvd = Boulevard
Dr = Drive
Fwy = Freeway
Hwy = Highway
LOS = level(s) of service
Rd = Road
St = Street
V/C = volume-to-capacity

Future Baseline Condition. The Mobility Element also disclosed the future (2035) v/c and LOS at the 88 intersections. Future (2035) conditions demonstrate the effects of organic growth in traffic volumes associated with growth in population and employment unrelated to land use changes in the City, regional traffic originating from outside the City, or land use changes proposed as part of the LUE.

Table 4.8.D, Mobility Element Future (2035) No Project Levels of Service, shows the future (No Project) conditions in comparison to existing (2008) conditions. As illustrated by Table 4.8.D, 9 intersections operate at LOS E or F in the a.m. peak hour and 30 intersections operate at LOS E or F in the p.m. peak hour. The Mobility Element used this disclosure to identify congestion hot spots within the City that could be addressed with a variety of tools.

Table 4.8.D: Mobility Element Future (2035) No Project Levels of Service

		Existing 2008				Future 2035				Change Without Project	
		AM		PM		AM		PM			
	Intersection	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM
1	Magnolia Ave/Ocean Blvd	0.848	D	0.744	C	0.859	D	0.758	C	0.011	0.014
2	Pacific Ave/7th St	0.677	B	0.525	A	0.712	C	0.608	B	0.035	0.083
3	Pacific Ave/6th St	0.415	A	0.630	B	0.440	A	0.700	B	0.025	0.070
4	Pacific Ave/3rd St	0.532	A	0.387	A	0.548	A	0.446	A	0.016	0.059
5	Pacific Ave/Broadway	0.360	A	0.699	B	0.371	A	0.781	C	0.011	0.082
6	Pacific Ave/Ocean Blvd	0.814	D	0.713	C	0.828	D	0.738	C	0.014	0.025
7	Long Beach Blvd/7th St	0.730	C	0.550	A	0.762	C	0.586	A	0.032	0.036
8	Long Beach Blvd/6th St	0.455	A	0.614	B	0.485	A	0.671	B	0.030	0.057
9	Long Beach Blvd/3rd St	0.512	A	0.382	A	0.533	A	0.425	A	0.021	0.043
10	Long Beach Blvd/Broadway	0.315	A	0.613	B	0.328	A	0.665	B	0.013	0.052
11	Long Beach Blvd/Ocean Blvd	0.723	C	0.632	B	0.747	C	0.659	B	0.024	0.027
12	Atlantic Ave/7th St	0.762	C	0.521	A	0.865	D	0.577	A	0.103	0.056
13	Atlantic Ave/6th St	0.458	A	0.559	A	0.514	A	0.608	B	0.056	0.049
14	Atlantic Ave/3rd St	0.487	A	0.356	A	0.513	A	0.406	A	0.026	0.050
15	Atlantic Ave/Broadway	0.261	A	0.604	B	0.290	A	0.666	B	0.029	0.062
16	Atlantic Ave/Shoreline Ave, Ocean Blvd	0.649	B	0.607	B	0.668	B	0.636	B	0.019	0.029
17	Alamitos Ave/7th St	**0.902**	**E**	0.759	D	**0.930**	**E**	0.814	D	0.028	0.055
18	Alamitos Ave/6th St	0.368	A	0.436	A	0.406	A	0.475	A	0.038	0.039
19	Alamitos Ave/3rd St	**1.048**	**F**	0.659	B	**1.099**	**F**	0.717	C	0.051	0.058
20	Alamitos Ave/Broadway	0.900	D	**0.945**	**E**	**0.954**	**E**	**1.012**	**F**	0.054	0.067
21	Alamitos Ave/Shoreline Ave, Ocean Blvd	**1.107**	**F**	**1.040**	**F**	**1.128**	**F**	**1.076**	**F**	0.021	0.036
22	Long Beach Blvd/Anaheim St	0.527	A	0.685	B	0.565	A	0.723	C	0.038	0.038
23	Long Beach Blvd/Pacific Coast Hwy	0.694	B	0.797	C	0.754	C	0.847	D	0.060	0.050
24	Long Beach Blvd/Willow St	0.694	B	0.756	C	0.746	C	0.805	D	0.052	0.049
25	Long Beach Blvd/Spring St	0.570	A	0.709	C	0.616	B	0.760	C	0.046	0.051
26	Long Beach Blvd/Wardlow Rd	0.837	D	0.827	D	0.884	D	0.854	D	0.047	0.027
27	Long Beach Blvd/San Antonio	0.482	A	0.773	C	0.513	A	0.881	D	0.031	0.108

Table 4.8.D: Mobility Element Future (2035) No Project Levels of Service

		Existing 2008				Future 2035				Change Without Project	
		AM		PM		AM		PM			
	Intersection	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM
28	Long Beach Blvd/Del Amo Blvd	0.799	C	0.833	D	0.853	D	0.893	D	0.054	0.060
29	Long Beach Blvd/Market St	0.581	A	0.878	D	0.627	B	**0.943**	**E**	0.046	0.065
30	Long Beach Blvd/Artesia Blvd	0.712	C	**1.027**	**F**	0.755	C	**1.100**	**F**	0.043	0.073
31	Pacific Ave/Anaheim St	0.614	B	0.706	C	0.673	B	0.783	C	0.059	0.077
32	Pacific Ave/Pacific Coast Hwy	0.663	B	0.636	B	0.750	D	0.700	B	0.087	0.064
33	Santa Fe Ave/Anaheim St	0.557	A	0.669	B	0.657	B	0.776	C	0.100	0.107
34	Santa Fe Ave/Pacific Coast Hwy	**0.990**	**E**	**0.942**	**E**	**1.153**	**F**	**1.018**	**F**	0.163	0.076
35	Santa Fe Ave/Willow St	0.751	C	0.851	D	0.817	D	**0.905**	**E**	0.066	0.054
36	Terminal Island Fwy/Willow St	0.390	A	0.500	A	0.397	A	0.518	A	0.007	0.018
37	Santa Fe Ave/Wardlow Rd	0.799	C	**0.910**	**E**	0.837	D	**0.959**	**E**	0.038	0.049
38	Atlantic Ave/Anaheim St	0.647	B	0.818	D	0.708	C	0.885	D	0.061	0.067
39	Atlantic Ave/Pacific Coast Hwy	0.603	B	0.758	C	0.683	B	0.816	D	0.080	0.058
40	Atlantic Ave/Willow St	0.681	B	0.890	D	0.766	C	**0.945**	**E**	0.085	0.055
41	Atlantic Ave/Del Amo Blvd	0.803	D	**0.986**	**E**	0.877	D	**1.086**	**F**	0.074	0.100
42	Atlantic Ave/South St	0.451	A	0.785	C	0.496	A	0.853	D	0.045	0.068
43	Atlantic Ave/Artesia Blvd	0.744	C	**0.976**	**E**	0.813	D	**1.078**	**F**	0.069	0.102
44	Alamitos Ave/Anaheim St	0.636	B	**0.914**	**E**	0.687	B	**0.963**	**E**	0.051	0.049
45	Orange Ave/Pacific Coast Hwy	0.608	B	0.793	C	0.654	B	0.839	D	0.046	0.046
46	Orange Ave/Wardlow Rd	0.708	C	0.773	C	0.755	C	0.845	D	0.047	0.072
47	Cherry Ave/7th St	0.686	B	0.801	D	0.717	C	0.869	D	0.031	0.068
48	Cherry Ave/Pacific Coast Hwy	0.805	D	0.896	D	**0.906**	**E**	**1.048**	**F**	0.101	0.152
49	Cherry Ave/Wardlow Rd	0.766	C	**0.948**	**E**	0.818	D	**1.019**	**F**	0.052	0.071
50	Cherry Ave/Carson St	0.544	A	0.706	C	0.576	A	0.754	C	0.032	0.048
51	Cherry Ave/Del Amo Blvd	0.742	C	**0.960**	**E**	0.791	C	**1.032**	**F**	0.049	0.072
52	Cherry Ave/Market St	0.708	C	0.742	C	0.771	C	0.806	D	0.063	0.064
53	Cherry Ave/Artesia Blvd	**0.916**	**E**	**1.020**	**F**	**0.987**	**E**	**1.091**	**F**	0.071	0.071
54	Paramount Blvd/Artesia Blvd	0.764	C	**0.932**	**E**	0.830	D	**1.002**	**F**	0.066	0.070
55	Paramount Blvd/South St	0.580	A	0.787	C	0.646	B	0.888	D	0.066	0.101
56	Redondo Ave/Ocean Blvd	0.867	D	**0.916**	**E**	**0.901**	**E**	**0.941**	**E**	0.034	0.025
57	Redondo Ave/3rd St	0.552	A	0.629	B	0.581	A	0.735	C	0.029	0.106
58	Redondo Ave/7th St	**0.913**	**E**	0.877	D	**0.960**	**E**	**0.934**	**E**	0.047	0.057
59	Redondo Ave/Anaheim St	0.769	C	0.833	D	0.828	D	**0.904**	**E**	0.059	0.071
60	Redondo Ave/Pacific Coast Hwy	0.733	C	0.855	D	0.806	D	**0.947**	**E**	0.073	0.092
61	Redondo Ave/Willow St	0.698	B	0.895	D	0.744	C	**0.930**	**E**	0.046	0.035
62	Redondo Ave/Spring St	0.646	B	0.769	C	0.794	C	0.791	C	0.148	0.022
63	Lakewood Blvd/Del Amo Blvd	0.825	D	**1.103**	**F**	0.857	D	**1.172**	**F**	0.032	0.069
64	Lakewood Blvd/Carson St	0.646	B	0.685	B	0.678	B	0.737	C	0.032	0.052
65	Lakewood Blvd/Spring St	0.764	C	0.763	C	0.836	D	0.813	D	0.072	0.050
66	Lakewood Blvd/Willow St	0.779	C	0.768	C	0.812	D	0.817	D	0.033	0.049

Table 4.8.D: Mobility Element Future (2035) No Project Levels of Service

		Existing 2008				Future 2035				Change Without Project	
		AM		PM		AM		PM			
	Intersection	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM
67	Ximeno Ave/4th St	0.594	A	0.719	C	0.712	C	0.793	C	0.118	0.074
68	Ximeno Ave/7th St	0.690	B	0.807	D	0.735	C	0.866	D	0.045	0.059
69	Livingston Dr/2nd St	0.843	D	**0.948**	**E**	0.861	D	**0.991**	**E**	0.018	0.043
70	Park Ave/4th St	0.599	A	0.724	C	0.619	B	0.757	C	0.020	0.033
71	Park Ave/7th St	0.808	D	0.873	D	0.835	D	**0.907**	**E**	0.027	0.034
72	Pacific Coast Hwy/Ximeno Ave	0.573	A	0.698	B	0.627	B	0.731	C	0.054	0.033
73	Pacific Coast Hwy/7th St	0.873	D	0.835	D	0.891	D	0.863	D	0.018	0.028
74	Pacific Coast Hwy/Anaheim St	0.736	C	**0.922**	**E**	0.766	C	**0.980**	**E**	0.030	0.058
75	Bellflower Blvd/Carson St	0.727	C	**0.950**	**E**	0.759	C	**0.995**	**E**	0.032	0.045
76	Bellflower Blvd/Spring St	0.788	C	0.861	D	0.855	D	**0.938**	**E**	0.067	0.077
77	Bellflower Blvd/Los Coyotes Diagonal	0.642	B	0.771	C	0.698	B	0.819	D	0.056	0.048
78	Bellflower Blvd/Atherton St	0.609	B	0.775	C	0.690	B	0.886	D	0.081	0.111
79	Bellflower Blvd/7th St	0.863	D	0.838	D	0.886	D	0.876	D	0.023	0.038
80	Los Coyotes Diagonal/Spring St	0.663	B	0.801	D	0.711	C	0.872	D	0.048	0.071
81	Palo Verde Ave/Wardlow Rd	0.412	A	0.597	A	0.459	A	0.656	B	0.047	0.059
82	Palo Verde Ave/Atherton St	0.518	A	0.718	C	0.585	A	0.806	D	0.067	0.088
83	Los Coyotes Diagonal/Carson St	0.658	B	**1.018**	**F**	0.688	B	**1.080**	**F**	0.030	0.062
84	Studebaker Rd/Spring St	0.593	A	0.724	C	0.661	B	0.835	D	0.068	0.111
85	Studebaker Rd/Willow St	0.563	A	0.715	C	0.602	B	0.763	C	0.039	0.048
86	Studebaker Rd/2nd St	0.746	C	0.887	D	0.761	C	**0.903**	**E**	0.015	0.016
87	Pacific Coast Hwy/2nd St	0.871	D	**1.053**	**F**	0.895	D	**1.092**	**F**	0.024	0.039
88	Bellflower Blvd/Pacific Coast Hwy	0.553	A	0.684	B	0.579	A	0.751	C	0.026	0.067

Source: *Traffic Impact Analysis,* LSA Associates, Inc. (May 2016) (Appendix E).

Ave = Avenue
Blvd = Boulevard
Dr = Drive
Fwy = Freeway
Hwy = Highway
LOS = level(s) of service
Rd = Road
St = Street
V/C = volume-to-capacity

Existing Transit Network. Transit service is provided within the project vicinity by Long Beach Transit (LBT). The routes and times of bus lines within the planning area are described in Table 4.8.E, Long Beach Transit Routes Summary, and are illustrated on Figure 4.8.3, Long Beach Transit System Map. In addition, the Los Angeles County Metropolitan Transit Authority (Metro) operates the Metro Blue Line in the City. Specifically, the Metro Blue Line runs in a north-south fashion from 7th Street/Metro Center to the Downtown Long Beach stop. An Amtrak unstaffed throughway bus stop is also located in Downtown Long Beach at the Transit Gallery.

Table 4.8.E: Long Beach Transit Routes Summary

Route Number	Route Name	Origin	Destination	Hours of Operation	Direction
1	Downtown Long Beach/Easy Ave/CSUDH	Downtown Long Beach at the Transit Gallery Shelter/CSUDH	CSUDH/Downtown Long Beach at the Transit Gallery Shelter	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
21/22	Cherry Ave/Downey Ave	Downtown Long Beach at the Transit Gallery/Alondra/Downey Ave	Alondra/Downey Ave & Downtown Long Beach at the Transit Gallery	Route 21: Monday through Sunday. Route 22: Monday through Sunday	North/South
-	Passport- Downtown Long Beach/Queen Mary	Queen Mary/Downtown Long Beach at 3rd and Promenade	Downtown Long Beach at 3rd & Promenade/Queen Mary	Northbound: Monday through Friday, and Saturday and Sunday. Southbound: Monday through Friday, and Saturday and Sunday.	-
45	Anaheim to Santa Fe	Downtown Long Beach at the Transit Gallery Shelter/Anaheim/PCH	Anaheim/PCH & Downtown Long Beach at the Transit Gallery Shelter	Eastbound: Monday through Sunday. Westbound: Monday through Sunday.	East/West
46	Anaheim Street to Downtown	Downtown Long Beach at the Transit Gallery Shelter/Anaheim/PCH	Anaheim/PCH & Downtown Long Beach at the Transit Gallery Shelter	Eastbound: Monday through Sunday. Westbound: Monday through Sunday.	East/West
51	Long Beach Blvd to Artesia Station	Downtown Long Beach at the Transit Gallery Shelter/Artesia Station	Artesia Station/ Downtown Long Beach at the Transit Gallery Shelter	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
52	Long Beach Blvd/Victoria/ Artesia Station	Downtown Long Beach at the Transit Gallery Shelter/Artesia Station	Artesia Station/ Downtown Long Beach at the Transit Gallery Shelter	Northbound: Monday through Friday, and is not in operation on Saturday or Sunday. Southbound: Monday through Friday, and is not in operation on Saturday or Sunday.	North/South
61	Atlantic Ave to Artesia Station	Downtown Long Beach at the Transit Gallery Shelter/Artesia Station	Artesia Station/ Downtown Long Beach at the Transit Gallery Shelter	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
71	Alamitos/Orange Ave	Downtown Long Beach at the Transit Gallery Shelter & Garfield/Petrol	Garfield/Petrol & Downtown Long Beach at the Transit Gallery Shelter	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
72	Alamitos/Orange Ave/Hunsaker Ave	Downtown Long Beach at the Transit Gallery Shelter & Garfield/Petrol	Garfield/Petrol & Downtown Long Beach at the Transit Gallery Shelter	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
81	10th St to CSULB	Downtown Long Beach at the Transit Gallery Shelter & Studebaker/Anaheim	Studebaker/Anaheim & Downtown Long Beach at the Transit Gallery Shelter	Eastbound: Monday through Friday, and is not in operation on Saturday and Sunday. Westbound: Monday through Friday, and is not in operation on Saturday and Sunday.	East/West
91	7th St/ Bellflower Boulevard	Downtown Long Beach at the Transit Gallery Shelter & Alondra/Woodruff	Alondra/Woodruff & Downtown Long Beach at the Transit Gallery Shelter	Eastbound: Monday through Sunday. Westbound: Monday through Sunday.	East/West
92	7th St/ Woodruff Ave	Downtown Long Beach at the Transit Gallery Shelter & Alondra/Woodruff	Alondra/Woodruff & Downtown Long Beach at the Transit Gallery Shelter	Eastbound: Monday through Friday, and is not in operation on Saturday and Sunday. Westbound: Monday through Friday, and is not in operation on Saturday and Sunday.	East/West
93	7th St/Clark Ave	Downtown Long Beach at the Transit Gallery Shelter & Clark/Del Amo	Clark/Del Amo Downtown Long Beach at the Transit Gallery Shelter	Eastbound: Monday through Friday, and is not in operation on Saturday and Sunday. Westbound: Monday through Friday, and is not in operation on Saturday and Sunday.	East/West
94	7th St/ Los Altos Only	Downtown Long Beach at the Transit Gallery Shelter & Bellflower/Stearns	Bellflower/Stearns & Downtown Long Beach at the Transit Gallery Shelter	Eastbound: Monday through Sunday. Westbound: Monday through Sunday.	East/West
96	ZAP - 7th Street	6th Street/Long Beach Boulevard stop & Woodruff/Del Amo stop	Woodruff/Del Amo stop & 7th Street/Long Beach Boulevard stop	Eastbound: Monday through Friday, and is not in operation on Saturday and Sunday. Westbound: Monday through Friday, and is not in operation on Saturday and Sunday.	East/West
101	Carson Street/Norwalk Boulevard	Santa Fe/25th & Carson/Norwalk	Carson/Norwalk & Santa Fe/25th	Eastbound: Monday through Sunday. Westbound: Monday through Sunday.	East/West
102	Willow/Spring/Wardlow	Santa Fe/25th & Carson/Norwalk	Carson/Norwalk & Santa Fe/25th	Eastbound: Monday through Friday, and is not in operation on Saturday and Sunday. Westbound: Monday through Friday, and is not in operation on Saturday and Sunday.	East/West
103	Carson Street to Lakewood Mall	Santa Fe/25th & Lakewood/Candlewood	Lakewood/Candlewood & Santa Fe/25th	Eastbound: Monday through Sunday. Westbound: Monday through Sunday.	East/West
104	Willow/Spring/Nature Center	Santa Fe/25th & Carson/Norwalk	Carson/Norwalk & Santa Fe/25th	Eastbound: Monday through Sunday. Westbound: Monday through Sunday.	East/West
111	Broadway/Lakewood Boulevard	Downtown Long Beach at the Transit Gallery & South/Downey	South/Downey & Downtown Long Beach at the Transit Gallery	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
112	Broadway/Clark Ave	Downtown Long Beach at the Transit Gallery & South/Downey	South/Downey & Downtown Long Beach at the Transit Gallery	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
121	Ocean/Belmont Shore/CSULB/PCH at Ximeno	Catalina Landing & PCH/Clark	Atherton/Ximeno & Downtown Long Beach at the Transit Gallery	Eastbound: Monday through Sunday. Westbound: Monday through Sunday.	East/West
131	Redondo Ave to Seal Beach	Alamitos Bay Landing/Wardlow	Wardlow/Alamitos Bay Landing	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
151	4th Street	4th/Ximeno stop & Transit Gallery in Downtown Long Beach	Transit Gallery in Downtown Long Beach & 4th/Ximeno stop	Eastbound: Monday through Sunday. Westbound: Monday through Sunday.	East/West
171	PCH/Seal Beach	Technology Place & Electric/Main	Electric/Main & Technology Place	Eastbound: Monday through Sunday. Westbound: Monday through Sunday	East/West
172	PCH/ Palo Verde	Transit Gallery in Downtown Long Beach/Norwalk Station	Norwalk Station/Transit Gallery in Downtown Long Beach	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South

Table 4.8.E: Long Beach Transit Routes Summary

Route Number	Route Name	Origin	Destination	Hours of Operation	Direction
173	PCH/Studebaker	Transit Gallery in Downtown Long Beach/Norwalk Station	Norwalk Station/Transit Gallery in Downtown Long Beach	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
174	PCH to Ximeno Only	Transit Gallery in Downtown Long Beach/Norwalk Station	Norwalk Station/Transit Gallery in Downtown Long Beach	Northbound: Monday through Sunday.	North/South
176	ZAP – PCH/LBCC/Lakewood Mall	Technology Place & Lakewood/Hardwick	Lakewood/Hardwick & Technology Place	Northbound: Monday through Friday, and is not in operation on Saturday or Sunday. Southbound: Monday through Friday, and is not in operation on Saturday or Sunday.	North/South
181	Magnolia Ave	Transit Gallery in Downtown Long Beach & Wardlow Station	Wardlow Station & Transit Gallery in Downtown Long Beach	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
182	Pacific Ave	Transit Gallery in Downtown Long Beach & Wardlow Station	Wardlow Station & Transit Gallery in Downtown Long Beach	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
191	Santa Fe/Del Amo Boulevard	Transit Gallery in Downtown Long Beach/Los Cerritos Center	Los Cerritos Center/Transit Gallery in Downtown Long Beach	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South
192	Santa Fe/South Street	Transit Gallery in Downtown Long Beach/Los Cerritos Center	Los Cerritos Center/Transit Gallery in Downtown Long Beach	Northbound: Monday through Sunday. Southbound: Monday through Sunday.	North/South

Source: Compiled by LSA (May 2016); Long Beach Transit (http://www.lbtransit.com/Services/).
Ave = Avenue
Blvd = Boulevard
CSUDH = California State University, Dominguez Hills
CSULB = California State University, Long Beach
LBCC = Long Beach Community College
PCH = Pacific Coast Highway
St = Street

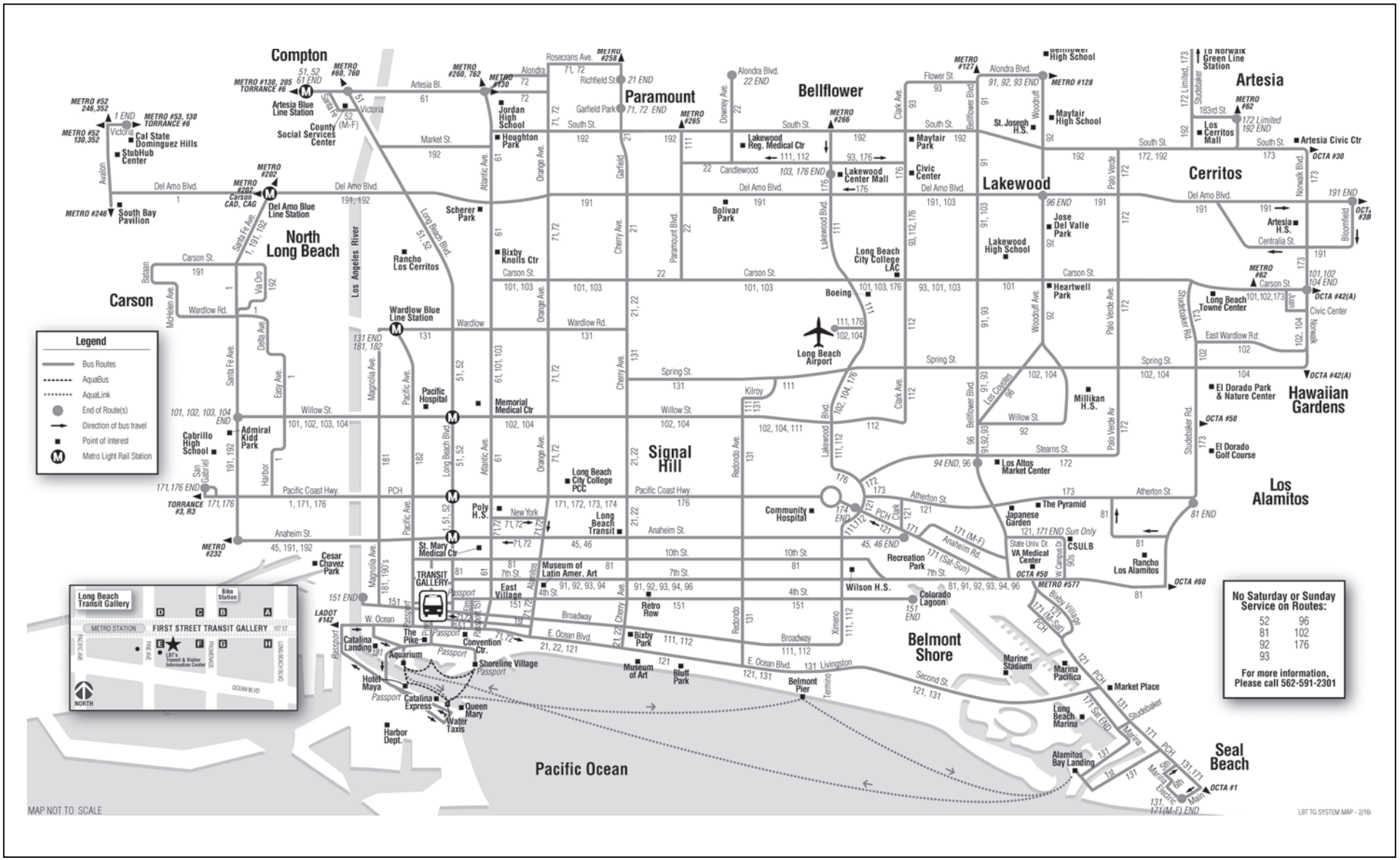

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FIGURE 4.8.3

Long Beach General Plan
Land Use and Urban Design Elements

Long Beach Transit System Map

SOURCE: City of Long Beach

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Existing Bicycle Network. As previously explained, it is the stated priority of the City to provide alternative modes of transportation in place of private automobiles. As part of this effort, the City has established a bicycle transportation network and has adopted a Bicycle Master Plan (2001). As illustrated by Figure 4.8.4, City of Long Beach Bike Map, the City has established a three-tier ranking system by which existing bicycle routes in the City are identified as "high comfort," "medium comfort," or "low comfort" bicycle routes.

The City has 120 miles of different types of bike paths, including 40 miles of Class 1 bikeways, 50 miles of Class II bikeways, and 30 miles of Class III bike routes,[1] as described further below.

- **Class I:** Variously called a bike path or multi-use trail. Provides for bicycle travel on a paved right of way completely separated from any street or highway.
- **Class II Bikeway:** Referred to as a bike lane. Provides a striped lane for one-way travel on a street or highway.
- **Class III Bikeway:** Referred to as a bike route. Provides for shared use with pedestrian or motor vehicle traffic.

To provide connections to other transportation modes, bicycle racks are included at several of the transit stops within the City. In addition, the Long Beach Bikestation is located in downtown Long Beach, near the Metro Blue Line. The Bikestation provides valet bicycle parking, bicycle rentals, and other amenities.

Existing Pedestrian Network. The existing conditions within the City include an elaborate network of pedestrian facilities, such as sidewalk coverage, curb cuts, crosswalks, street lighting, landscaping, and signalized intersections that serve the needs of pedestrians.

In recent years, the City has made a concerted effort to improve the walkability of its Downtown and surrounding communities. Buildings, sidewalk lighting, sidewalks, landscaping, and street furniture have been implemented to encourage walking between the transit stations, housing, shopping, employment centers, and nearby recreation uses.

4.8.4 Regulatory Setting

Federal Regulations. There are no relevant federal traffic and circulation regulations applicable to the proposed project.

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[1] Bike Long Beach. 2015. Website: http://www.bikelongbeach.org/welcome/infrastructure/bikeways (accessed May 3, 2016).

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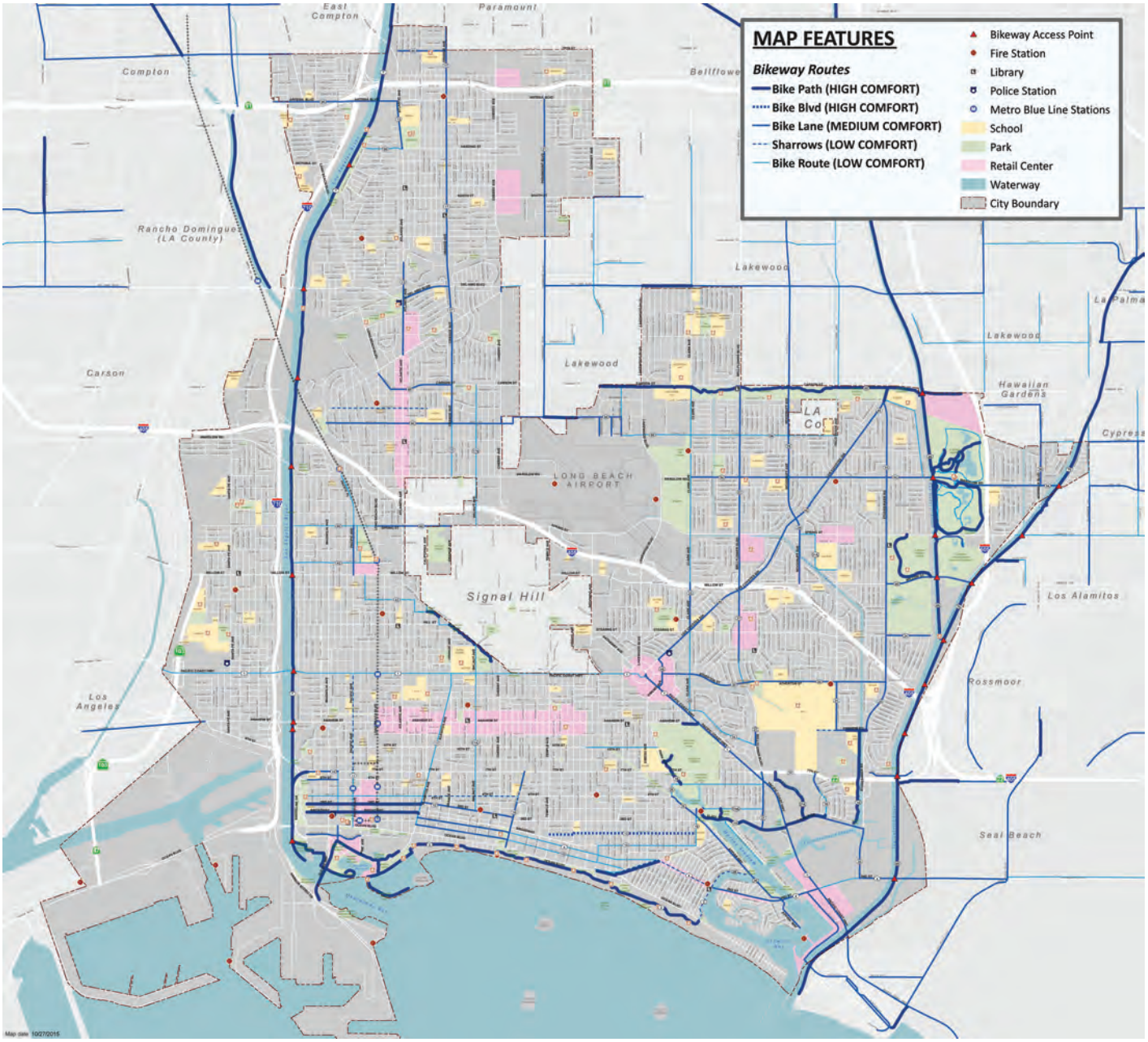

LSA

FIGURE 4.8.4

N

0 0.75 1.5
MILES

SOURCE: City of Long Beach Public Works Department

I:\CLB1505\G\Traffic\Bike Map.cdr (5/16/2016)

Long Beach General Plan
Land Use and Urban Design Elements

City of Long Beach Bike Map

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State Regulations.

Congestion Management Program. In Los Angeles County, the CMP is the program by which County agencies have agreed to monitor and report on the status of regional roadways. In June 1990, the passage of the Proposition 111 gas tax increase required urbanized areas in the State with a population of 50,000 or more to adopt a CMP. The CMP is intended to link transportation, land use, and air quality decisions, as well as address the impact of local growth on the regional transportation system. State legislation requires that the CMP contain a process to analyze the impacts of land use decisions by local governments on the regional transportation system. For CMP purposes, the regional transportation system is defined by the legislation as all State highways and principal arterials. The identification and analysis of impacts along with estimated mitigation costs are determined with respect to this CMP Highway System.

As the Congestion Management Agency for Los Angeles County, Metro is responsible for the preparation of the CMP. The latest CMP (Metro, 2010) states that a significant impact would occur if intersection LOS with the project is LOS F and the proposed project causes a 0.02 or greater increase in volume-to-capacity ratio. The CMP includes 10 monitored intersections within the City of Long Beach. These intersections are as follows, and are also included in the project study area:

- (16) Atlantic Avenue/Shoreline Avenue-Ocean Boulevard
- (17) Alamitos Avenue/7th Street
- (34) Santa Fe Avenue/Pacific Coast Highway
- (45) Orange Avenue/Pacific Coast Highway
- (58) Redondo Avenue/7th Street
- (64) Lakewood Boulevard/Carson Street
- (66) Lakewood Boulevard/Willow Street
- (72) Pacific Coast Highway/Ximeno Avenue
- (73) Pacific Coast Highway/7th Street
- (87) Pacific Coast Highway/2nd Street

Local Regulations.

City of Long Beach General Plan Mobility Element. In October 2013, the City approved the Mobility Element of the City's General Plan. The Mobility Element seeks to guide development and improvements to the existing circulation system. As previously stated, the Mobility Element establishes several goals aimed at improving the existing transportation system so that it is responsive to all travel modes. Some of these goals (e.g., increased ability to walk, bike, and use transit) would be supported by the changes in the proposed LUE. The following transportation/traffic goals and policies in the City's Mobility Element are applicable to the proposed project.

Goal 1: Create a safe, efficient, balanced, and multimodal mobility network.

Mobility of People (MOP) Policies:

MOP Policy 1-1: To improve the performance and visual appearance of Long Beach's streets, design streets holistically using the "complete streets approach" which considers walking, those with mobility constraints, bicyclists, public transit users, and various other modes of mobility in parallel.

MOP Policy 1-12: Continue to assist Long Beach Transit in implementing a comprehensive Citywide transit service that meets future needs.

MOP Policy 1-13: Increase multimodal access to major employers and educational institutions, including Long Beach Community College.

MOP Policy 1-14: Use universal design techniques to accommodate pedestrians of all ages and abilities and ensure compliance with the Americans with Disabilities Act.

MOP Policy 1-17: Develop land use policies that focus development potential in locations best served by transit.

MOP Policy 1-18: Focus development densities for residential and nonresidential land uses around the eight Metro Blue Line stations within City boundaries.

MOP Policy 2-2: Design the character and scale of the street to support its street type and place-type designation and overlay networks (for example, create a bike boulevard or bicycle-friendly retail district, transit street, or green street).

MOP Policy 2-15: Ensure that all new development is consistent with the applicable provisions of the Bicycle Master Plan.

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

MOP Policy 6-12: Promote transit-oriented development with reduced parking requirements around appropriate transit hubs and stations to facilitate the use of available transit systems.

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

The following proposed Goals, Strategies, and Policies are applicable to the analysis of Transportation and Traffic:

Land Use Element.

STRATEGY No. 1: Support sustainable urban development patterns.

LU Policy 1-1: Promote sustainable development patterns and development intensities that use land.

STRATEGY No. 6: Implement the major areas of change identified in this Land Use Plan (Map LU-19).

LU Policy 6-6: Promote transit-oriented development around passenger rail stations and along major transit corridors.

LU Policy 6-7: Continue to develop the downtown into a city center that provides compact development, accommodates new growth, creates a walkable urban environment, allows for diversified businesses and is easily accessible to surrounding neighborhoods and regional facilities.

LU Policy 6-9: Focus infill development in the downtown, Multi-Family residential neighborhoods and transit-oriented development areas, and along specific corridors.

LU Policy 6-11: Support infill and transit-oriented development projects by utilizing available tools, such as public-private partnerships and assistance with land assembly and consolidation.

Urban Design Element.

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

Policy UD 1-5: Prioritize and revitalize streetscapes in existing neighborhoods and targeted areas of change to provide well-lit streets, continuous sidewalks, consistent paving treatment and improved crosswalks at intersections.

Policy UD 1-6: Identify streets that can be reconfigured to accommodate a variety of improvements, such as wider sidewalks with trees, bike paths, dedicated transit lanes, and landscape medians or curb extensions that make the streets more attractive and usable, consistent with Complete Streets principles.

Policy UD 1-7: Employ timeless and durable materials in streetscape designed amenities.

STRATEGY No. 2: Beautify and improve efficiency of corridors, gateways, and private and public spaces.

Policy UD 4-4: Identify opportunities for "walking loops" through neighborhoods that provide easy-to-follow routes (with distances noted) for exercise and pleasure.

Policy UD 8-3: Enhance walkable streets and neighborhoods to create pedestrian-friendly environments that support business vitality.

Policy UD 16-2: Continue to develop the Downtown into a city center that provides compact development, accommodates new growth, creates a walkable environment, allows for diversified businesses and is easily accessible to surrounding neighborhoods and regional facilities.

Policy UD 16-3: Focus new development with the greatest intensity and broadest mix of uses, along transit-supportive corridors, downtown, and near transit stations.

Policy UD 19-8: Provide better connections to these neighborhoods by improving bikeways and pedestrian paths, especially along the arterial streets. Capture opportunity for pedestrian paths to improve walkability (e.g., utility easement, vacant parcels).

Policy UD 19-9: Encourage streets to be repurposed to accommodate slower speeds and better serve pedestrians, cyclists, and local transit where the City Transportation Engineer determines that streets are overdesigned for estimated traffic loads.

Policy UD 20-6: Provide traffic calming measures such as roundabouts or narrowed intersections, where appropriate, to slow automobile speeds and allow pedestrians and cyclists to safely share the street.

Policy UD 21-3: Promote pedestrian activity by establishing well-designed streetscapes, active ground floor uses, and tree-canopied sidewalks that are unique to the individual neighborhood and transit stations.

Policy UD 21-8: Provide access to parking/loading from alleys or side streets to minimize curb cuts along the main boulevard where pedestrian activity will be the heaviest. Require a well-designed interface between pedestrians, bicyclists, and transit users. Bicycle facilities and pedestrian amenities should be integrated throughout the PlaceType.

Policy UD 23-8: Provide access to auto-oriented uses with the minimum required curb cut to make the sidewalk more navigable for pedestrians. Consider sidewalk extensions wherever possible to slow automobile traffic into the residential areas and to improve pedestrian crossings at side streets. Provide bicycle parking within commercial developments.

Policy UD 28-6: Encourage pedestrian activity through the controlling of vehicles, the use of tree-canopied, landscaped pathways and sidewalks, pedestrian-scaled lighting, and active and inviting ground floor uses.

Policy UD 28-7: Provide transit stops that are conveniently located.

Policy UD 38-8: Provide a clear zone for through-pedestrian traffic along the sidewalk. See the Mobility Element for specific sidewalk widths for each Street Type.

Policy UD 40-2: Provide well-marked and convenient pedestrian access through parking areas to separate pedestrian and vehicular traffic.
Policy UD 41-1: Encourage new developments to incorporate pedestrian amenities and pathways that provide direct, convenient, and safe access to public sidewalks and streets.

Policy UD 41-2: Explore opportunities to improve connections among the downtown, corridors, campuses, and neighborhoods to create interconnected walking environments.

Policy UD 41-3: Maintain and enhance the street grid network and short blocks that support all modes of transportation in Long Beach.

Policy UD 41-4: Provide street furnishings in the pedestrian zone to encourage walking and areas to stop and rest.

Policy UD 41-5: Promote enhancement, repair, and maintenance of alleys, paseos, paths, and trails.

Policy UD 41-6: Encourage the use of specialty paving or artistic ground treatment, such as painted concrete, where alleys intersect to enhance pedestrian activity.

Policy UD 41-7: Provide wayfinding signs, pedestrian lighting for safety and security, benches, and public art along alleys, paseos, paths, and trails to enhance neighborhood character and walkability.

Policy UD 41-8: Provide mid-block pedestrian connections between the street and alley on commercial blocks to encourage pedestrian discovery and safe passages.

STRATEGY No. 42: Continue promoting the City's vision to become the most bicycle-friendly city in the United States. Refer to additional policies provided in the Mobility Element.

Policy UD 42-1: Support and enhance bicycle streets by strategically locating bicycle facilities (like bicycle boulevards, bike racks and corrals, bike stations, and bike rental/share facilities), and reducing conflicts between pedestrians, bicyclists, and vehicles.

Policy UD 42-2: Encourage the integration of bike corrals and other transit amenities into projects located at heavily used transit stops, retail areas, and activity centers.

Policy UD 42-3: Support Long Beach's bike share program.

Policy UD 42-4: Provide bicycle facilities that connect activity centers.

STRATEGY No. 43: Establish comfortable and safe transit infrastructure. Refer to additional policies provided in the Mobility Element.

Policy UD 43-1: Promote the integration of transit stop amenities into the site or landscape design of a project, such as rain or sun protection, seating, and trash receptacle, where appropriate and feasible.

Policy UD 43-2: Create and encourage the use of a route/bus information theme to transit centers (or elements), so that they are visually similar, recognizable, and have an identity that is specific to Long Beach.

Policy UD 43-3: Provide transit infrastructure within 1/4 mile of all bus and transit stops.

4.8.6 Thresholds of Significance

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

Threshold 4.8.1: Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

Threshold 4.8.2: 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;

Threshold 4.8.3: 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;

Threshold 4.8.4: Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

Threshold 4.8.5: Result in inadequate emergency access; or

Threshold 4.8.6: Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Approval of the proposed project is considered a policy/panning action for the entire City and does not include any physical improvements at this time. Therefore, the Initial Study/Notice of Preparation (IS/NOP) (Appendix A) determined that the proposed project would result in less than significant

impacts related to changes in air traffic patterns (Threshold 4.8.3), the exposure to hazards due to a design feature (Threshold 4.8.4), inadequate emergency access (Threshold 4.8.5), and potential conflicts with adopted plans, policies, and/or programs regarding public transit (Threshold 4.8.6). These thresholds will be analyzed at the time that future development projects subject to CEQA are being evaluated. As a result, these thresholds are not analyzed further in this Draft EIR.

4.8.7 Standard Conditions and Project Design Features

The proposed project would not be required to adhere to any standard conditions and would not include any project design features related to transportation and traffic.

4.8.8 Project Impacts

Threshold 4.8.1: Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

Significant and Unavoidable Impact. In support of the multimodal goals established in the adopted Mobility Element, the proposed LUE concentrates growth along corridors and in the districts previously identified. Many of these corridors and districts are supported by infrastructure for alternative transportation modes. Concentrating future growth in these areas would provide residents and employees with alternatives for travel aside from a private automobile. However, concentrating future growth in these areas also has the potential to concentrate new automobile trips.

As previously described, increases in socioeconomic factors as a result of changes in land use classifications or densities were used to project the increase in traffic for each Major Area of Change. The total new traffic within each district was compared to the total baseline traffic within the district to determine the percentage of increase in traffic volume. In other words, changes in the land use classifications would increase traffic volume compared to the 2035 traffic volumes that would be anticipated without changes to the land use classifications. Table 4.8.F shows the resulting traffic increase for each district.

Figure 4.8.5, Intersections and District Boundaries, illustrates the location of the study area intersections and the boundaries of the City districts to identify which intersections lay within each district. The increases in v/c ratio provided in Table 4.8.G were applied to each of the intersections within the districts. For intersections not located within any of the City districts affected by new development proposed within the Major Areas of Change, no increase in v/c ratio was added to the 2035 condition.

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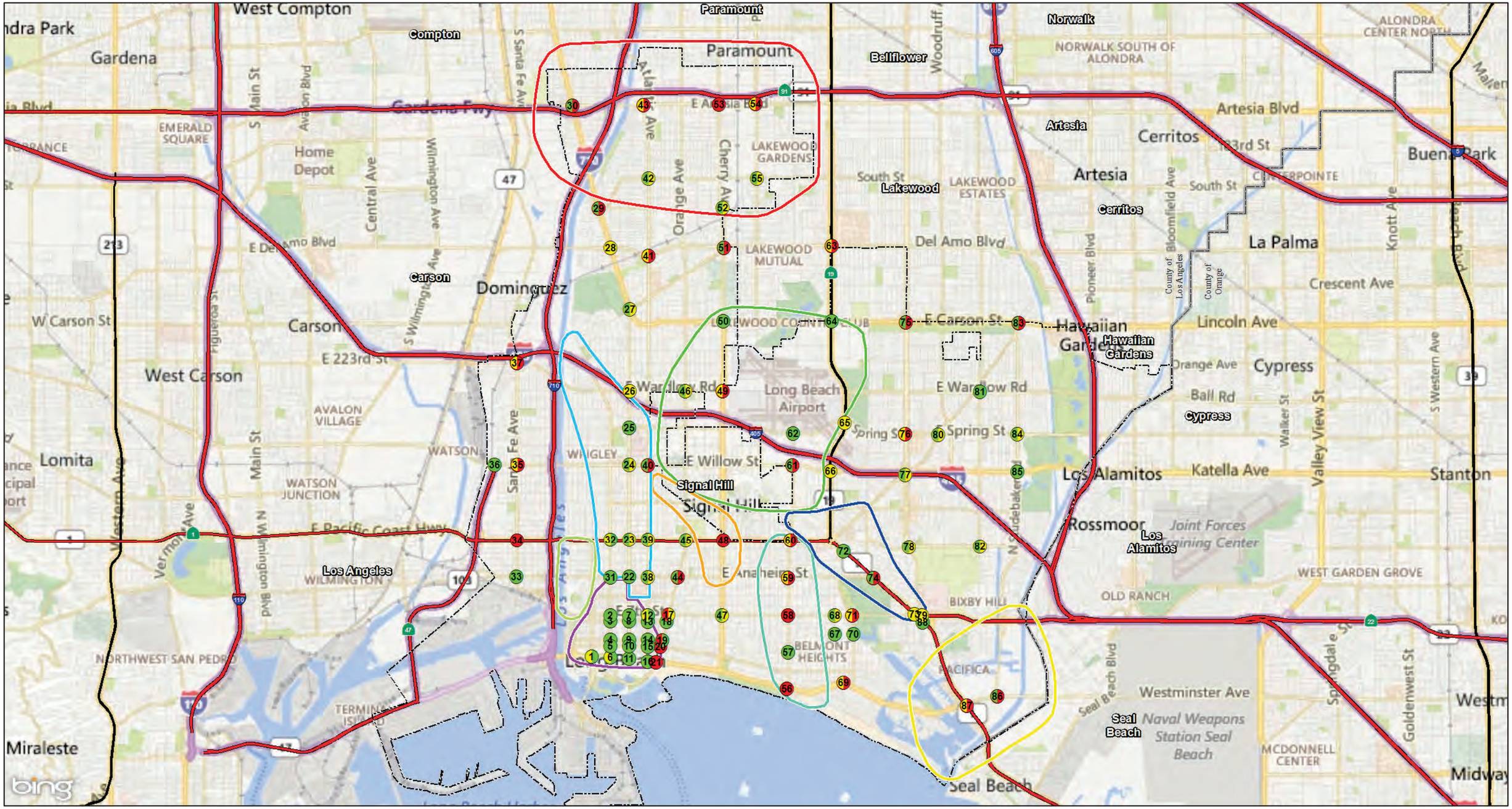

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LEGEND

City Boundary

2035 Intersections (AM left side/PM right side)

- Los A, B, C
- Los D
- Los E, F

Neighborhoods of Change

1. North Long Beach
2. Mid City
3. Riverside
4. Downtown
5. Airport
6. PCH
7. Traffic Circl
8. Redondo
9. SEADIP

0 0.625 1.25 Miles

SOURCE: Bing Maps (2013)

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FIGURE 4.8.5

Long Beach General Plan
Land Use and Urban Design Elements

Intersections and District Boundaries

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Table 4.8.F: Traffic Increase as a Result of Land Use Element Major Areas of Change

City District	Total 2035 District Traffic[1]			New Traffic Within Major Areas of Change			Percent Increase		
	ADT	AM Peak Hour	PM Peak Hour	ADT	AM Peak Hour	PM Peak Hour	ADT	AM Peak Hour	PM Peak Hour
1. North Long Beach	158,427	11,083	14,409	4,630	309	422	3%	3%	3%
2. Mid-City	211,287	15,169	20,349	23,457	1,682	2,284	11%	11%	11%
3. Riverside	23,051	1,619	2,072	1,595	112	144	7%	7%	7%
4. Downtown	186,874	12,419	17,102	17,167	1,105	1,569	9%	9%	9%
5. Airport	164,778	11,843	15,297	11,790	846	1,084	7%	7%	7%
6. PCH	70,613	4,869	6,391	1,773	128	159	3%	3%	2%
7. Traffic Circle	77,210	5,019	7,072	7,139	458	653	9%	9%	9%
8. Redondo	175,416	12,008	16,403	7,177	471	657	4%	4%	4%
9. SEADIP	46,221	2,884	4,247	12,836	780	1,182	28%	27%	28%

Source: *Traffic Impact Analysis,* LSA Associates, Inc. (May 2016) (Appendix E).
[1] Total traffic for all traffic analysis zones within the district as shown in the SCAG traffic model.
ADT = Average Daily Traffic
SCAG = Southern California Association of Governments
PCH = Pacific Coast Highway
SEADIP = Southeast Area Development and Improvement Plan

Table 4.8.G: Change in Volume-to-Capacity from Major Areas of Change

City District	Percent Increase			Change in Volume-to-Capacity Ratio	
	ADT	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
1. North Long Beach	3%	3%	3%	0.03	0.03
2. Mid-City	11%	11%	11%	0.11	0.11
3. Riverside	7%	7%	7%	0.07	0.07
4. Downtown	9%	9%	9%	0.09	0.09
5. Airport	7%	7%	7%	0.07	0.07
6. PCH	3%	3%	2%	0.03	0.02
7. Traffic Circle	9%	9%	9%	0.09	0.09
8. Redondo	4%	4%	4%	0.04	0.04
9. SEADIP	28%	27%	28%	0.27	0.28

Source: *Traffic Impact Analysis,* LSA Associates, Inc. (May 2016) (Appendix E).
ADT = Average Daily Traffic
PCH = Pacific Coast Highway
SEADIP = Southeast Area Development and Improvement Plan

The 2035 No Project conditions reflect future traffic conditions in Long Beach where population and employment would grow in the City and in surrounding areas, but no changes to the land use classifications in the City would occur as proposed under the project. However, because there would be potential increases in travel demand within the districts seeing changes in land use classifications as proposed in the LUE, the 2040 With Project conditions reflect the potential increases in traffic within the districts where changes in land use classifications would occur.

The increase in traffic volume in each City district is presumed to affect the v/c ratio of intersections within the City districts. Table 4.8.G shows the increase in v/c ratio applied to the intersections within each district.

For the purposes of a CEQA comparison, the baseline of analysis is the existing condition or the 2008 baseline used in the Mobility Element analysis of the 88 study area intersections. Table 4.8.H compares the future 2040 With Project conditions to the 2008 existing baseline. Based on the City's criteria, the following 44 intersections could be significantly impacted by the proposed General Plan LUE:

- (1) Magnolia Avenue/Ocean Boulevard
- (6) Pacific Avenue/Ocean Boulevard
- (12) Atlantic Avenue/7th Street
- (17) Alamitos Avenue/7th Street
- (19) Alamitos Avenue/3rd Street
- (20) Alamitos Avenue/Broadway
- (21) Alamitos Avenue/Shoreline Avenue, Ocean Boulevard
- (23) Long Beach Boulevard/Pacific Coast Highway
- (24) Long Beach Boulevard/Willow Street
- (26) Long Beach Boulevard/Wardlow Road
- (29) Long Beach Boulevard/Market Street
- (30) Long Beach Boulevard/Artesia Boulevard
- (34) Santa Fe Avenue/Pacific Coast Highway
- (37) Santa Fe Avenue/Wardlow Road
- (38) Atlantic Avenue/Anaheim Street
- (39) Atlantic Avenue/Pacific Coast Highway
- (40) Atlantic Avenue/Willow Street
- (41) Atlantic Avenue/Del Amo Boulevard
- (43) Atlantic Avenue/Artesia Boulevard
- (44) Alamitos Avenue/Anaheim Street
- (46)Orange Avenue/Wardlow Road
- (48) Cherry Avenue/Pacific Coast Highway
- (49) Cherry Avenue/Wardlow Road
- (51) Cherry Avenue/Del Amo Boulevard
- (53) Cherry Avenue/Artesia Boulevard
- (54) Paramount Boulevard/Artesia Boulevard
- (55) Paramount Boulevard/South Street
- (56) Redondo Avenue/Ocean Boulevard
- (58) Redondo Avenue/7th Street
- (59) Redondo Avenue/Anaheim Street
- (60) Redondo Avenue/Pacific Coast Highway
- (61) Redondo Avenue/Willow Street
- (63) Lakewood Boulevard/Del Amo Boulevard
- (65) Lakewood Boulevard/Spring Street
- (69) Livingston Drive/2nd Street
- (71) Park Avenue/7th Street
- (73) Pacific Coast Highway/7th Street
- (74) Pacific Coast Highway/Anaheim Street
- (75) Bellflower Boulevard/Carson Street
- (76) Bellflower Boulevard/Spring Street
- (79) Bellflower Boulevard/7th Street
- (83) Los Coyotes Diagonal/Carson Street
- (86) Studebaker Road/2nd Street
- (87) Pacific Coast Highway/2nd Street

Figure 4.8.6, Affected Intersections, illustrates the locations of these affected intersections. The forecasted intersection LOS deficiencies are caused by future traffic volume growth from the projected project-related traffic volumes. For this reason, impacts to these intersections represent a potentially significant impact, and mitigation is required.

Table 4.8.H: General Plan Land Use Element Project Impacts (Year 2040)

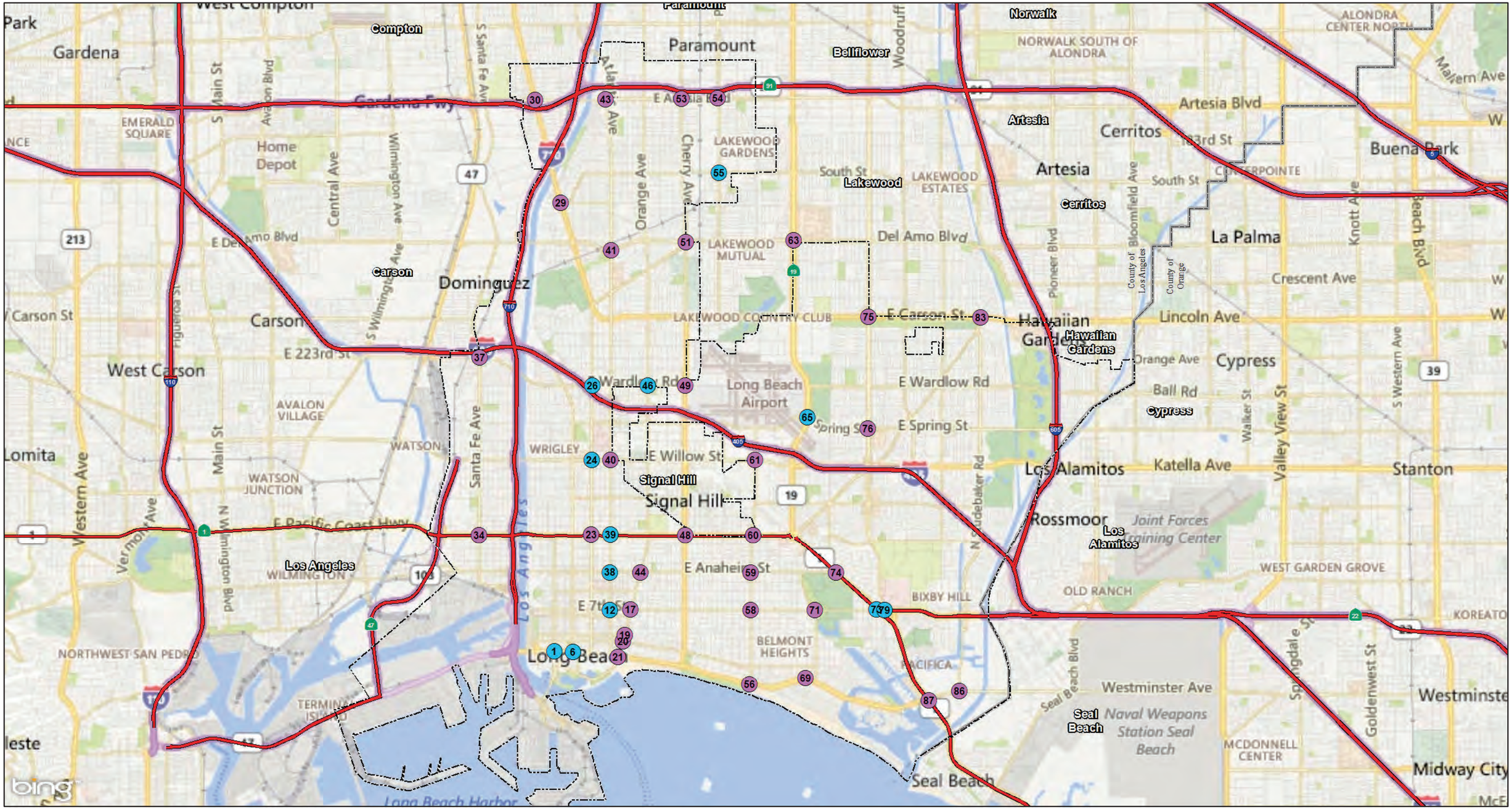
		Existing 2008				General Plan Build Out with Project				Change with Project	
		AM		PM		AM		PM			
	Intersection	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM
1	Magnolia Ave/Ocean Blvd	0.85	D	0.74	C	**0.95**	**E**	0.85	D	0.10	0.10
2	Pacific Ave/7th St	0.68	B	0.53	A	0.80	D	0.70	B	0.13	0.17
3	Pacific Ave/6th St	0.42	A	0.63	B	0.53	A	0.79	C	0.12	0.16
4	Pacific Ave/3rd St	0.53	A	0.39	A	0.64	B	0.54	A	0.11	0.15
5	Pacific Ave/Broadway	0.36	A	0.70	B	0.46	A	0.87	D	0.10	0.17
6	Pacific Ave/Ocean Blvd	0.81	D	0.71	C	**0.92**	**E**	0.83	D	0.10	0.12
7	Long Beach Blvd/7th St	0.73	C	0.55	A	0.85	D	0.68	B	0.12	0.13
8	Long Beach Blvd/6th St	0.46	A	0.61	B	0.58	A	0.76	C	0.12	0.15
9	Long Beach Blvd/3rd St	0.51	A	0.38	A	0.62	B	0.52	A	0.11	0.13
10	Long Beach Blvd/Broadway	0.32	A	0.61	B	0.42	A	0.76	C	0.10	0.14
11	Long Beach Blvd/Ocean Blvd	0.72	C	0.63	B	0.84	D	0.75	C	0.11	0.12
12	Atlantic Ave/7th St	0.76	C	0.52	A	**0.96**	**E**	0.67	B	0.19	0.15
13	Atlantic Ave/6th St	0.46	A	0.56	A	0.60	B	0.70	B	0.15	0.14
14	Atlantic Ave/3rd St	0.49	A	0.36	A	0.60	B	0.50	A	0.12	0.14
15	Atlantic Ave/Broadway	0.26	A	0.60	B	0.38	A	0.76	C	0.12	0.15
16	Atlantic Ave/Shoreline Ave, Ocean Blvd	0.65	B	0.61	B	0.76	C	0.73	C	0.11	0.12
17	Alamitos Ave/7th St	**0.90**	**E**	0.76	D	**1.02**	**F**	0.90	D	0.12	0.15
18	Alamitos Ave/6th St	0.37	A	0.44	A	0.50	A	0.57	A	0.13	0.13
19	Alamitos Ave/3rd St	**1.05**	**F**	0.66	B	**1.19**	**F**	0.81	D	0.14	0.15
20	Alamitos Ave/Broadway	0.90	D	**0.95**	**E**	**1.04**	**F**	**1.10**	**F**	0.14	0.16
21	Alamitos Ave/Shoreline Ave, Ocean Blvd	**1.11**	**F**	**1.04**	**F**	**1.22**	**F**	**1.17**	**F**	0.11	0.13
22	Long Beach Blvd/Anaheim St	0.53	A	0.69	B	0.66	B	0.81	D	0.13	0.13
23	Long Beach Blvd/Pacific Coast Hwy	0.69	B	0.80	C	0.86	D	**0.96**	**E**	0.17	0.16
24	Long Beach Blvd/Willow St	0.69	B	0.76	C	0.86	D	**0.92**	**E**	0.16	0.16
25	Long Beach Blvd/Spring St	0.57	A	0.71	C	0.73	C	0.87	D	0.16	0.16
26	Long Beach Blvd/Wardlow Rd	0.84	D	0.83	D	**0.99**	**E**	**0.96**	**E**	0.16	0.14
27	Long Beach Blvd/San Antonio	0.48	A	0.77	C	0.51	A	0.88	D	0.03	0.11
28	Long Beach Blvd/Del Amo Blvd	0.80	C	0.83	D	0.85	D	0.89	D	0.05	0.06
29	Long Beach Blvd/Market St	0.58	A	0.88	D	0.63	B	**0.94**	**E**	0.05	0.06
30	Long Beach Blvd/Artesia Blvd	0.71	C	**1.03**	**F**	0.79	C	**1.13**	**F**	0.07	0.10
31	Pacific Ave/Anaheim St	0.61	B	0.71	C	0.76	C	0.87	D	0.15	0.17
32	Pacific Ave/Pacific Coast Hwy	0.66	B	0.64	B	0.86	D	0.81	D	0.20	0.17
33	Santa Fe Ave/Anaheim St	0.56	A	0.70	B	0.66	B	0.78	C	0.10	0.11
34	Santa Fe Ave/Pacific Coast Hwy	**0.99**	**E**	**0.94**	**E**	**1.15**	**F**	**1.02**	**F**	0.16	0.08
35	Santa Fe Ave/Willow St	0.75	C	0.85	D	0.82	D	**0.91**	**E**	0.07	0.05
36	Terminal Island Fwy/Willow St	0.39	A	0.50	A	0.40	A	0.52	A	0.01	0.02
37	Santa Fe Ave/Wardlow Rd	0.80	C	**0.91**	**E**	0.84	D	**0.96**	**E**	0.04	0.05
38	Atlantic Ave/Anaheim St	0.65	B	0.82	D	0.82	D	**1.00**	**E**	0.17	0.18
39	Atlantic Ave/Pacific Coast Hwy	0.60	B	0.76	C	0.79	C	**0.93**	**E**	0.19	0.17
40	Atlantic Ave/Willow St	0.68	B	0.89	D	0.88	D	**1.06**	**F**	0.20	0.17
41	Atlantic Ave/Del Amo Blvd	0.80	D	**0.99**	**E**	0.88	D	**1.09**	**F**	0.07	0.10
42	Atlantic Ave/South St	0.45	A	0.79	C	0.53	A	0.88	D	0.08	0.10
43	Atlantic Ave/Artesia Blvd	0.74	C	**0.98**	**E**	0.84	D	**1.11**	**F**	0.10	0.13
44	Alamitos Ave/Anaheim St	0.64	B	**0.91**	**E**	0.69	B	**0.96**	**E**	0.05	0.05
45	Orange Ave/Pacific Coast Hwy	0.61	B	0.79	C	0.65	B	0.84	D	0.05	0.05
46	Orange Ave/Wardlow Rd	0.71	C	0.77	C	0.83	D	**0.92**	**E**	0.12	0.14

Table 4.8.H: General Plan Land Use Element Project Impacts (Year 2040)

		Existing 2008				General Plan Build Out with Project				Change with Project	
		AM		PM		AM		PM			
	Intersection	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM
47	Cherry Ave/7th St	0.69	B	0.80	D	0.72	C	0.87	D	0.03	0.07
48	Cherry Ave/Pacific Coast Hwy	0.81	D	0.90	D	**0.94**	**E**	**1.07**	**F**	0.13	0.17
49	Cherry Ave/Wardlow Rd	0.77	C	**0.95**	**E**	0.89	D	**1.09**	**F**	0.12	0.14
50	Cherry Ave/Carson St	0.54	A	0.71	C	0.65	B	0.82	D	0.10	0.12
51	Cherry Ave/Del Amo Blvd	0.74	C	**0.96**	**E**	0.79	C	**1.03**	**F**	0.05	0.07
52	Cherry Ave/Market St	0.71	C	0.74	C	0.80	D	0.84	D	0.09	0.09
53	Cherry Ave/Artesia Blvd	**0.92**	**E**	**1.02**	**F**	**1.02**	**F**	**1.12**	**F**	0.10	0.10
54	Paramount Blvd/Artesia Blvd	0.76	C	**0.93**	**E**	0.86	D	**1.03**	**F**	0.10	0.10
55	Paramount Blvd/South St	0.58	A	0.79	C	0.68	B	**0.92**	**E**	0.10	0.13
56	Redondo Ave/Ocean Blvd	0.87	D	**0.92**	**E**	**0.94**	**E**	**0.98**	**E**	0.07	0.06
57	Redondo Ave/3rd St	0.55	A	0.63	B	0.62	B	0.78	C	0.07	0.15
58	Redondo Ave/7th St	**0.91**	**E**	0.88	D	**1.00**	**E**	**0.97**	**E**	0.09	0.10
59	Redondo Ave/Anaheim St	0.77	C	0.83	D	0.87	D	**0.94**	**E**	0.10	0.11
60	Redondo Ave/Pacific Coast Hwy	0.73	C	0.86	D	0.81	D	**0.95**	**E**	0.07	0.09
61	Redondo Ave/Willow St	0.70	B	0.90	D	0.81	D	**1.00**	**E**	0.12	0.11
62	Redondo Ave/Spring St	0.65	B	0.77	C	0.86	D	0.86	D	0.22	0.09
63	Lakewood Blvd/Del Amo Blvd	0.83	D	**1.10**	**F**	0.86	D	**1.17**	**F**	0.03	0.07
64	Lakewood Blvd/Carson St	0.65	B	0.69	B	0.75	C	0.81	D	0.10	0.12
65	Lakewood Blvd/Spring St	0.76	C	0.76	C	**0.91**	**E**	0.88	D	0.14	0.12
66	Lakewood Blvd/Willow St	0.78	C	0.77	C	0.88	D	0.89	D	0.10	0.12
67	Ximeno Ave/4th St	0.59	A	0.72	C	0.71	C	0.79	C	0.12	0.07
68	Ximeno Ave/7th St	0.69	B	0.81	D	0.74	C	0.87	D	0.05	0.06
69	Livingston Dr/2nd St	0.84	D	**0.95**	**E**	0.86	D	**0.99**	**E**	0.02	0.04
70	Park Ave/4th St	0.60	A	0.72	C	0.62	B	0.76	C	0.02	0.03
71	Park Ave/7th St	0.81	D	0.87	D	0.84	D	**0.91**	**E**	0.03	0.03
72	Pacific Coast Hwy/Ximeno Ave	0.57	A	0.70	B	0.72	C	0.82	D	0.14	0.12
73	Pacific Coast Hwy/7th St	0.87	D	0.84	D	**0.98**	**E**	**0.95**	**E**	0.11	0.12
74	Pacific Coast Hwy/Anaheim St	0.74	C	**0.92**	**E**	0.86	D	**1.07**	**F**	0.12	0.15
75	Bellflower Blvd/Carson St	0.73	C	**0.95**	**E**	0.76	C	**1.00**	**E**	0.03	0.05
76	Bellflower Blvd/Spring St	0.79	C	0.86	D	0.86	D	**0.94**	**E**	0.07	0.08
77	Bellflower Blvd/Los Coyotes Diagonal	0.64	B	0.77	C	0.70	B	0.82	D	0.06	0.05
78	Bellflower Blvd/Atherton St	0.61	B	0.78	C	0.69	B	0.89	D	0.08	0.11
79	Bellflower Blvd/7th St	0.86	D	0.84	D	**0.98**	**E**	**0.97**	**E**	0.11	0.13
80	Los Coyotes Diagonal/Spring St	0.66	B	0.80	D	0.71	C	0.87	D	0.05	0.07
81	Palo Verde Ave/Wardlow Rd	0.41	A	0.60	A	0.46	A	0.66	B	0.05	0.06
82	Palo Verde Ave/Atherton St	0.52	A	0.72	C	0.59	A	0.81	D	0.07	0.09
83	Los Coyotes Diagonal/Carson St	0.66	B	**1.02**	**F**	0.69	B	**1.08**	**F**	0.03	0.06
84	Studebaker Rd/Spring St	0.59	A	0.72	C	0.66	B	0.84	D	0.07	0.11
85	Studebaker Rd/Willow St	0.56	A	0.72	C	0.60	B	0.76	C	0.04	0.05
86	Studebaker Rd/2nd St	0.75	C	0.89	D	**1.04**	**F**	**1.18**	**F**	0.30	0.30
87	Pacific Coast Hwy/2nd St	0.87	D	**1.05**	**F**	**1.18**	**F**	**1.37**	**F**	0.30	0.32
88	Bellflower Blvd/Pacific Coast Hwy	0.55	A	0.68	B	0.70	B	0.84	D	0.12	0.16

Source: *Traffic Impact Analysis,* LSA Associates, Inc. (May 2016) (Appendix E).

Ave = Avenue
Blvd = Boulevard
Dr = Drive
Fwy = Freeway
Hwy = Highway
LOS = level(s) of service
St = Street
Rd = Road
V/C = volume-to-capacity



LSA

LEGEND

City Boundary

New Los E or F Compared to Mobility Element

Impact Compared to Existing

0 0.625 1.25
Miles

SOURCE: Bing Maps (2013)

I:\CLB1505\G\Traffic\A fected Intersections.cdr (5/4/2016)

FIGURE 4.8.6

Long Beach General Plan
Land Use and Urban Design Elements

Affected Intersections

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Table 4.8.I shows the LOS conditions at study area intersections for the year 2040 (General Plan Build Out) without and with project traffic. As shown in Table 4.8.I, under the No Project scenario, 18 study area intersections are forecast to operate at LOS E or F in the a.m. peak hour and 39 intersections are forecast to operate at LOS E or F in the p.m. peak hour. Table 4.8.I shows the anticipated change in intersection performance caused by the LUE compared to the No Project conditions (i.e., the increase in travel demand within districts where land use classifications would change).

With the proposed changes in land use classifications, as compared to the No Project scenario, nine more intersections would operate at LOS E or F in the a.m. peak hour and nine more intersections would operate at LOS E or F in the p.m. peak hour.

As compared to the conclusions in the Mobility Element traffic study, an additional 12 intersections are now forecast to operate at LOS E or F. In total, 12 intersections that were projected to function at LOS D or better when the Mobility Element analyzed traffic conditions are now forecast to function at LOS E or F. These intersections are as follows:

North Long Beach:

- (55) Paramount Boulevard/South Street

Mid-City:

- (24) Long Beach Boulevard/Willow Street
- (26) Long Beach Boulevard/Wardlow Road
- (38) Atlantic Avenue/Anaheim Street
- (39) Atlantic Avenue/Pacific Coast Highway

Downtown:

- (1) Magnolia Avenue/Ocean Boulevard
- (6) Pacific Avenue/Ocean Boulevard
- (12) Atlantic Avenue/7th Street

Airport:

- (46) Orange Avenue/Wardlow Road
- (65) Lakewood Boulevard/Spring Street

Traffic Circle:

- (73) Pacific Coast Highway/7th Street
- (79) Bellflower Boulevard/7th Street

Table 4.8.I: Future (2040) With Project Levels of Service

			General Plan Build Out No Project				Effect of Land Use Element		General Plan Build Out With Project			
			AM		PM				AM		PM	
District		Intersection	V/C	LOS	V/C	LOS	AM	PM	V/C	LOS	V/C	LOS
1. North Long Beach	30	Long Beach Blvd/Artesia Blvd	0.76	C	**1.10**	**F**	0.03	0.03	0.79	C	**1.13**	**F**
	42	Atlantic Ave/South St	0.50	A	0.85	D			0.53	A	0.88	D
	43	Atlantic Ave/Artesia Blvd	0.81	D	**1.08**	**F**			0.84	D	**1.11**	**F**
	52	Cherry Ave/Market St	0.77	C	0.81	D			0.80	D	0.84	D
	53	Cherry Ave/Artesia Blvd	**0.99**	**E**	**1.09**	**F**			**1.02**	**F**	**1.12**	**F**
	54	Paramount Blvd/Artesia Blvd	0.83	D	**1.00**	**F**			0.86	D	**1.03**	**F**
	55	Paramount Blvd/South St	0.65	B	0.89	D			0.68	B	**0.92**	**E**
2. Mid-City	23	Long Beach Blvd/Pacific Coast Hwy	0.75	C	0.85	D	0.11	0.11	0.86	D	**0.96**	**E**
	24	Long Beach Blvd/Willow St	0.75	C	0.81	D			0.86	D	**0.92**	**E**
	25	Long Beach Blvd/Spring St	0.62	B	0.76	C			0.73	C	0.87	D
	26	Long Beach Blvd/Wardlow Rd	0.88	D	0.85	D			**0.99**	**E**	**0.96**	**E**
	32	Pacific Ave/Pacific Coast Hwy	0.75	D	0.70	B			0.86	D	0.81	D
	38	Atlantic Ave/Anaheim St	0.71	C	0.89	D			0.82	D	**1.00**	**E**
	39	Atlantic Ave/Pacific Coast Hwy	0.68	B	0.82	D			0.79	C	**0.93**	**E**
	40	Atlantic Ave/Willow St	0.77	C	**0.95**	**E**			0.88	D	**1.06**	**F**
4. Downtown	1	Magnolia Ave/Ocean Blvd	0.86	D	0.76	C	0.09	0.09	**0.95**	**E**	0.85	D
	2	Pacific Ave/7th St	0.71	C	0.61	B			0.80	D	0.70	B
	3	Pacific Ave/6th St	0.44	A	0.70	B			0.53	A	0.79	C
	4	Pacific Ave/3rd St	0.55	A	0.45	A			0.64	B	0.54	A
	5	Pacific Ave/Broadway	0.37	A	0.78	C			0.46	A	0.87	D
	6	Pacific Ave/Ocean Blvd	0.83	D	0.74	C			**0.92**	**E**	0.83	D
	7	Long Beach Blvd/7th St	0.76	C	0.59	A			0.85	D	0.68	B
	8	Long Beach Blvd/6th St	0.49	A	0.67	B			0.58	A	0.76	C
	9	Long Beach Blvd/3rd St	0.53	A	0.43	A			0.62	B	0.52	A
	10	Long Beach Blvd/Broadway	0.33	A	0.67	B			0.42	A	0.76	C
	11	Long Beach Blvd/Ocean Blvd	0.75	C	0.66	B			0.84	D	0.75	C
	12	Atlantic Ave/7th St	0.87	D	0.58	A			**0.96**	**E**	0.67	B
	13	Atlantic Ave/6th St	0.51	A	0.61	B			0.60	B	0.70	B
	14	Atlantic Ave/3rd St	0.51	A	0.41	A			0.60	B	0.50	A
	15	Atlantic Ave/Broadway	0.29	A	0.67	B			0.38	A	0.76	C
	16	Atlantic Ave/Shoreline Ave, Ocean Blvd	0.67	B	0.64	B			0.76	C	0.73	C
	17	Alamitos Ave/7th St	**0.93**	**E**	0.81	D			**1.02**	**F**	0.90	D
	18	Alamitos Ave/6th St	0.41	A	0.48	A			0.50	A	0.57	A
	19	Alamitos Ave/3rd St	**1.10**	**F**	0.72	C			**1.19**	**F**	0.81	D
	20	Alamitos Ave/Broadway	**0.95**	**E**	**1.01**	**F**			**1.04**	**F**	**1.10**	**F**
	21	Alamitos Ave/Shoreline Ave, Ocean Blvd	**1.13**	**F**	**1.08**	**F**			**1.22**	**F**	**1.17**	**F**
	22	Long Beach Blvd/Anaheim St	0.57	A	0.72	C			0.66	B	0.81	D
	31	Pacific Ave/Anaheim St	0.67	B	0.78	C			0.76	C	0.87	D
5. Airport	46	Orange Ave/Wardlow Rd	0.76	C	0.85	D	0.07	0.07	0.83	D	**0.92**	**E**
	49	Cherry Ave/Wardlow Rd	0.82	D	**1.02**	**F**			0.89	D	**1.09**	**F**
	50	Cherry Ave/Carson St	0.58	A	0.75	C			0.65	B	0.82	D
	61	Redondo Ave/Willow St	0.74	C	**0.93**	**E**			0.81	D	**1.00**	**E**
	62	Redondo Ave/Spring St	0.79	C	0.79	C			0.86	D	0.86	D
	64	Lakewood Blvd/Carson St	0.68	B	0.74	C			0.75	C	0.81	D
	65	Lakewood Blvd/Spring St	0.84	D	0.81	D			**0.91**	**E**	0.88	D
	66	Lakewood Blvd/Willow St	0.81	D	0.82	D			0.88	D	0.89	D

Table 4.8.I: Future (2040) With Project Levels of Service

District		Intersection	General Plan Build Out No Project				Effect of Land Use Element		General Plan Build Out With Project			
			AM		PM				AM		PM	
			V/C	LOS	V/C	LOS	AM	PM	V/C	LOS	V/C	LOS
6. PCH	48	Cherry Ave/Pacific Coast Hwy	**0.91**	**E**	**1.05**	**F**	0.03	0.02	**0.94**	**E**	**1.07**	**F**
7. Traffic Circle	72	Pacific Coast Hwy/Ximeno Ave	0.63	B	0.73	C	0.09	0.09	0.72	C	0.82	D
	73	Pacific Coast Hwy/7th St	0.89	D	0.86	D			**0.98**	**E**	**0.95**	**E**
	74	Pacific Coast Hwy/Anaheim St	0.77	C	**0.98**	**E**			0.86	D	**1.07**	**F**
	79	Bellflower Blvd/7th St	0.89	D	0.88	D			**0.98**	**E**	**0.97**	**E**
	88	Bellflower Blvd/Pacific Coast Hwy	0.58	A	0.75	C			0.67	B	0.84	D
8. Redondo	56	Redondo Ave/Ocean Blvd	**0.90**	**E**	**0.94**	**E**	0.04	0.04	**0.94**	**E**	**0.98**	**E**
	57	Redondo Ave/3rd St	0.58	A	0.74	C			0.62	B	0.78	C
	58	Redondo Ave/7th St	**0.96**	**E**	**0.93**	**E**			**1.00**	**E**	**0.97**	**E**
	59	Redondo Ave/Anaheim St	0.83	D	**0.90**	**E**			0.87	D	**0.94**	**E**
9. SEADIP	86	Studebaker Rd/2nd St	0.76	C	**0.90**	**E**	0.27	0.28	**1.03**	**F**	**1.18**	**F**
	87	Pacific Coast Hwy/2nd St	0.90	D	**1.09**	**F**			**1.17**	**F**	**1.37**	**F**
No District	27	Long Beach Blvd/San Antonio	0.51	A	0.88	D	0.00	0.00	0.51	A	0.88	D
	28	Long Beach Blvd/Del Amo Blvd	0.85	D	0.89	D			0.85	D	0.89	D
	29	Long Beach Blvd/Market St	0.63	B	**0.94**	**E**			0.63	B	**0.94**	**E**
	33	Santa Fe Ave/Anaheim St	0.66	B	0.78	C			0.66	B	0.78	C
	34	Santa Fe Ave/Pacific Coast Hwy	**1.15**	**F**	**1.02**	**F**			**1.15**	**F**	**1.02**	**F**
	35	Santa Fe Ave/Willow St	0.82	D	**0.91**	**E**			0.82	D	**0.91**	**E**
	36	Terminal Island Fwy/Willow St	0.40	A	0.52	A			0.40	A	0.52	A
	37	Santa Fe Ave/Wardlow Rd	0.84	D	**0.96**	**E**			0.84	D	**0.96**	**E**
	41	Atlantic Ave/Del Amo Blvd	0.88	D	**1.09**	**F**			0.88	D	**1.09**	**F**
	44	Alamitos Ave/Anaheim St	0.69	B	**0.96**	**E**			0.69	B	**0.96**	**E**
	45	Orange Ave/Pacific Coast Hwy	0.65	B	0.84	D			0.65	B	0.84	D
	47	Cherry Ave/7th St	0.72	C	0.87	D			0.72	C	0.87	D
	51	Cherry Ave/Del Amo Blvd	0.79	C	**1.03**	**F**			0.79	C	**1.03**	**F**
	60	Redondo Ave/Pacific Coast Hwy	0.81	D	**0.95**	**E**			0.81	D	**0.95**	**E**
	63	Lakewood Blvd/Del Amo Blvd	0.86	D	**1.17**	**F**			0.86	D	**1.17**	**F**
	67	Ximeno Ave/4th St	0.71	C	0.79	C			0.71	C	0.79	C
	68	Ximeno Ave/7th St	0.74	C	0.87	D			0.74	C	0.87	D
	69	Livingston Dr/2nd St	0.86	D	**0.99**	**E**			0.86	D	**0.99**	**E**
	70	Park Ave/4th St	0.62	B	0.76	C			0.62	B	0.76	C
	71	Park Ave/7th St	0.84	D	**0.91**	**E**			0.84	D	**0.91**	**E**
	75	Bellflower Blvd/Carson St	0.76	C	**1.00**	**E**			0.76	C	**1.00**	**E**
	76	Bellflower Blvd/Spring St	0.86	D	**0.94**	**E**			0.86	D	**0.94**	**E**
	77	Bellflower Blvd/Los Coyotes Diagonal	0.70	B	0.82	D			0.70	B	0.82	D
	78	Bellflower Blvd/Atherton St	0.69	B	0.89	D			0.69	B	0.89	D
	80	Los Coyotes Diagonal/Spring St	0.71	C	0.87	D			0.71	C	0.87	D
	81	Palo Verde Ave/Wardlow Rd	0.46	A	0.66	B			0.46	A	0.66	B
	82	Palo Verde Ave/Atherton St	0.59	A	0.81	D			0.59	A	0.81	D
	83	Los Coyotes Diagonal/Carson St	0.69	B	**1.08**	**F**			0.69	B	**1.08**	**F**
	84	Studebaker Rd/Spring St	0.66	B	0.84	D			0.66	B	0.84	D
	85	Studebaker Rd/Willow St	0.60	B	0.76	C			0.60	B	0.76	C

Source: *Traffic Impact Analysis,* LSA Associates, Inc. (May 2016) (Appendix E).

Ave = Avenue
Blvd = Boulevard
Dr = Drive
Fwy = Freeway
Hwy = Highway
LOS = level(s) of service
Rd = Road
St = Street
V/C = volume-to-capacity

As part of the TIA, mitigation in the form of vehicle capacity enhancements for each impacted intersection was reviewed for feasibility. Of the 44 impacted intersections, planned vehicle capacity improvements have been identified in the Mobility Element and/or applicable specific plans at only one intersection, Alamitos Avenue/Broadway. The Long Beach Downtown Community Plan included a mitigation measure to remove parking spaces on the west side of Alamitos Avenue, restripe and reconstruct the street, add a bike lane in each direction of travel, and provide for two travel lanes in each direction plus exclusive left-turn lanes from 7th Street to Ocean Boulevard. When implemented, this improvement would result in a second southbound through lane at the intersection of Alamitos Avenue/Broadway. However, the Long Beach Community Plan Traffic Impact Analysis indicates that this intersection would still be anticipated to operate at LOS E in the p.m. peak hour after the improvement.

The Mobility Element and/or applicable specific plans identify non-vehicle capacity improvements throughout the City. Pending projects in the City's Capital Improvement Program include: landscape improvements on the median islands at Livingston Drive/2nd Street, Artesia Boulevard Cycle Track, Alamitos Avenue Cycle Track, 3rd Street and Broadway Cycle Track, Alamitos Avenue Road Diet, Willow Street Pedestrian Improvements, Long Beach Boulevard Pedestrian Improvements, Long Beach Bike Lane Connections, and Bike Gap System Closures. Of the 44 impacted intersections, these projects will affect the following (but are not anticipated to improve vehicle LOS):

- Pacific Avenue/Ocean Boulevard
- Alamitos Avenue/7th Street
- Alamitos Avenue/3rd Street
- Alamitos Avenue/Broadway
- Alamitos Avenue/Shoreline Avenue-Ocean Boulevard
- Long Beach Boulevard/Willow Street
- Long Beach Boulevard/Wardlow Road
- Atlantic Avenue/Willow Street
- Atlantic Avenue/Artesia Boulevard
- Alamitos Avenue/Anaheim Street
- Cherry Avenue/Artesia Boulevard
- Paramount Boulevard/Artesia Boulevard
- Livingston Drive/2nd Street
- Bellflower Boulevard/7th Street

Aerial imagery of the impacted intersections was reviewed to identify potential constraints to vehicle capacity enhancements. Examples of potential constraints include lack of right-of-way, existing structures or open space, presence of utilities, geometric considerations, lack of complete jurisdiction over the intersection, conflict with other transportation modes, safety considerations, and incompatibility with planned road diets identified in the Mobility Element. Based on this review, it was determined that vehicle capacity enhancements would be infeasible, for various reasons, at all 44 impacted intersections. Table 4.8.J documents the constraints associated with vehicle capacity enhancements at these intersections.

Table 4.8.J: Constraints Matrix

Study Area No	Intersection	Constraints							
		Lack of Right-of-Way	Existing Structures or Open Space	Presence of Utilities	Geometric Considerations	Shared Jurisdiction	Conflict with Other Modes	Safety Considerations	Possible Road Diet in Mobility Element
1	Magnolia Avenue/Ocean Boulevard	x	x						
6	Pacific Avenue/Ocean Boulevard	x	x						
12	Atlantic Avenue/7th Street	x	x						x
17	Alamitos Avenue/7th Street	x	x					x	x
19	Alamitos Avenue/3rd Street	x	x		x		x	x	x
20	Alamitos Avenue/Broadway	x	x		x		x	x	x
21	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	x	x		x		x	x	x
23	Long Beach Boulevard/Pacific Coast Highway	x	x				x		x
24	Long Beach Boulevard/Willow Street	x	x	x			x		x
26	Long Beach Boulevard/Wardlow Road	x	x	x			x		x
29	Long Beach Boulevard/Market Street	x	x				x		x
30	Long Beach Boulevard/Artesia Boulevard	x	x	x			x		x
34	Santa Fe Avenue/Pacific Coast Highway	x	x	x					x
37	Santa Fe Avenue/Wardlow Road	x	x	x	x	x	x		
38	Atlantic Avenue/Anaheim Street	x	x						x
39	Atlantic Avenue/Pacific Coast Highway	x	x						x
40	Atlantic Avenue/Willow Street	x	x			x	x		x
41	Atlantic Avenue/Del Amo Boulevard	x	x	x			x		
43	Atlantic Avenue/Artesia Boulevard	x	x	x			x		x
44	Alamitos Avenue/Anaheim Street	x	x				x		x
46	Orange Avenue/Wardlow Road	x	x	x		x			
48	Cherry Avenue/Pacific Coast Highway	x	x			x			x
49	Cherry Avenue/Wardlow Road	x	x	x		x			x
51	Cherry Avenue/Del Amo Boulevard	x	x	x		x	x		x
53	Cherry Avenue/Artesia Boulevard	x	x	x			x		x
54	Paramount Boulevard/Artesia Boulevard	x	x	x			x		x
55	Paramount Boulevard/South Street	x	x	x			x		
56	Redondo Avenue/Ocean Boulevard		x						x
58	Redondo Avenue/7th Street	x	x						x
59	Redondo Avenue/Anaheim Street	x	x						x
60	Redondo Avenue/Pacific Coast Highway	x	x	x		x			x
61	Redondo Avenue/Willow Street	x	x	x		x			
63	Lakewood Boulevard/Del Amo Boulevard	x	x	x		x			
65	Lakewood Boulevard/Spring Street		x						
69	Livingston Drive/2nd Street	x	x		x		x	x	x
71	Park Avenue/7th Street		x		x			x	
73	Pacific Coast Highway/7th Street	x	x					x	x
74	Pacific Coast Highway/Anaheim Street				x		x	x	x
75	Bellflower Boulevard/Carson Street	x	x	x		x	x		
76	Bellflower Boulevard/Spring Street	x	x	x			x		
79	Bellflower Boulevard/7th Street	x	x				x		x
83	Los Coyotes Diagonal/Carson Street	x	x	x		x	x		

Table 4.8.J: Constraints Matrix

Study Area No	Intersection	Constraints							
		Lack of Right-of-Way	Existing Structures or Open Space	Presence of Utilities	Geometric Considerations	Shared Jurisdiction	Conflict with Other Modes	Safety Considerations	Possible Road Diet in Mobility Element
86	Studebaker Road/2nd Street			x			x		x
87	Pacific Coast Highway/2nd Street	x	x				x		x

Source: *Traffic Impact Analysis*, LSA Associates, Inc. (May 2016) (Appendix E).
Ave = Avenue ft = foot/feet
Blvd = Boulevard Rd = Road
City = City of Long Beach St = Street

In addition to the aforementioned planned improvements, the Mobility Element presents a number of Implementation Measures designed to promote mobility of people by supporting all travel modes, including walking, bicycling, and use of transit, thereby reducing the number of automobile trips on the roadway network. Executing Mobility of People Implementation Measure (MOP IM) 1 through MOP IM-60 would have an effect on managing travel demand, reducing the volume of vehicle traffic, decreasing the v/c ratio at City intersections, and improving vehicle LOS. However, the effect of these measures on individual intersection LOS cannot be guaranteed because they rely on the changing attitudes and actions of many commuters. In addition, it is possible that when some automobile trips are converted into alternative modes, additional automobile trips that would otherwise have been discouraged by congestion may occur. Therefore, although these measures would contribute to a reduced vehicle LOS, their effects cannot be quantified and they cannot be considered mitigation for the 44 impacted study area intersections for the purposes of CEQA. Because vehicle capacity enhancements to the impacted intersections are not feasible, and because no other mitigation to reduce traffic is available and enforceable, impacts to the 44 intersections identified above are considered significant and unavoidable for the build-out year of 2040.

It should be noted that as future specific plans are prepared for large areas of the City such as Mid-City and SEADIP, future intersection performance would be analyzed and a finer-grain approach to seeking physical improvements would be possible. Whether within a specific plan area or not, future individual projects subject to CEQA review will be required to identify their specific impacts to intersections and implement mitigation measures to address those impacts. Due to pending changes in the metric for identifying transportation impacts shifting from automobile LOS to multimodal LOS or VMT, it is possible that the automobile LOS deficiencies identified in the TIA would no longer be considered a significant impact for future projects.

It should also be noted that while the proposed project would result in significant unavoidable traffic impacts, project-related increases in growth are consistent with the SCAG's growth assumptions and Regional Transportation Plan (RTP). Therefore, the associated land uses have been included in the long-term regional transportation planning efforts conducted by SCAG.

Threshold 4.8.2: 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.

Significant and Unavoidable Impact. As previously stated, the latest CMP (Metro 2010) defines a significant impact at an intersection when a project causes a 0.02 or greater increase in v/c ratio at an intersection operating at LOS E or F. Of the 88 study area intersections, the CMP includes 10 monitored intersections. Table 4.8.K reiterates the results of the General Plan build-out intersection analysis for the 10 CMP intersections.

Table 4.8.K: General Plan Land Use Element Project Impacts – CMP Intersections

	Intersection	Existing 2008				General Plan Build Out with Project (2040)				Change With Project	
		AM		PM		AM		PM			
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	AM	PM
16	Atlantic Ave/Shoreline Ave, Ocean Blvd	0.65	B	0.61	B	0.76	C	0.73	C	0.11	0.12
17	Alamitos Ave/7th St	0.90	E	0.76	D	**1.02**	**F**	0.90	D	0.12	0.15
34	Santa Fe Ave/Pacific Coast Hwy	0.99	E	0.94	E	**1.15**	**F**	**1.02**	**F**	0.16	0.08
45	Orange Ave/Pacific Coast Hwy	0.61	B	0.79	C	0.65	B	0.84	D	0.05	0.05
58	Redondo Ave/7th St	0.91	E	0.88	D	1.00	E	0.97	E	0.09	0.10
64	Lakewood Blvd/Carson St	0.65	B	0.69	B	0.75	C	0.81	D	0.10	0.12
66	Lakewood Blvd/Willow St	0.78	C	0.77	C	0.88	D	0.89	D	0.10	0.12
72	Pacific Coast Hwy/Ximeno Ave	0.57	A	0.70	B	0.72	C	0.82	D	0.14	0.12
73	Pacific Coast Hwy/7th St	0.87	D	0.84	D	0.98	E	0.95	E	0.11	0.12
87	Pacific Coast Hwy/2nd St	0.87	D	**1.05**	**F**	**1.18**	**F**	**1.37**	**F**	0.30	0.32

Source: *Traffic Impact Analysis,* LSA Associates, Inc. (May 2016) (Appendix E)
Notes: Bold = Intersection LOS exceeds CMP acceptable level.
Shaded = Project contribution exceeds CMP significance criteria.

Ave = Avenue
Blvd = Boulevard
CMP = Congestion Management Program
Dr = Drive
Fwy = Freeway
Hwy = Highway
LOS = level(s) of service
Rd = Road
St = Street
V/C = volume-to-capacity

As illustrated by Table 4.8.K, the following intersections would have a significant project impact based on CMP criteria:

- (17) Alamitos Avenue/7th Street
- (34) Santa Fe Avenue/Pacific Coast Highway
- (58) Redondo Avenue/7th Street
- (73) Pacific Coast Highway/7th Street
- (87) Pacific Coast Highway/2nd Street

Based on the results and because there is no feasible mitigation to reduce impacts at the impacted intersections (see planned improvements and Mobility Element Implementation Measures above), the significant impacts to these five intersections are considered significant and unavoidable for the build-out year of 2040.

4.8.9 Mitigation Measures

There are no feasible mitigation measures to offset potentially significant adverse impacts to traffic and circulation associated with implementation of the proposed project.

4.8.10 Cumulative Impacts

As defined in the *State CEQA Guidelines,* cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future

projects within the cumulative impact area for traffic and circulation. The project proposes an update to the City's General Plan that would affect development patterns throughout the City. As such, because the proposed project is a City-wide policy action that would facilitate future development throughout the entire City, the proposed project itself is cumulative in nature.

Under 2040 plus project build-out conditions, operations at 44 intersections would be significantly impacted and would operate below the City's LOS D standard. Therefore, under this build-out scenario, the proposed project contributes to a cumulative impact at these 44 intersections. Although the Mobility Element presents a number of Implementation Measures designed to reduce the number of automobile trips on the roadway network and promote mobility by supporting all travel modes, the effect of these measures on individual intersection LOS cannot be guaranteed because they rely on the changing attitudes and actions of many commuters. Furthermore, as discussed previously, when automobile trips are converted into alternative modes, some automobile trips that would otherwise have been discouraged by congestion may occur. For these reasons, and because physical vehicle capacity enhancements are not feasible, the impacts to the 44 intersections identified above are considered cumulatively significant and unavoidable for the build-out year of 2040.

4.8.11 Level of Significance after Mitigation

The proposed project would result in significant unavoidable adverse traffic impacts at 44 study area intersections under the General Plan build-out scenario. The reason for these significant unavoidable adverse impacts is that there are physical constraints associated with vehicle capacity enhancements to the impacted intersections. Furthermore, the effect of the Implementation Measures in the Mobility Element cannot be guaranteed to reduce impacts at the 44 impacted intersections. For these reasons, there is no feasible mitigation for impacts to the 44 impacted intersections, and impacts remain significant and unavoidable.

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4.9 UTILITIES

4.9.1 Introduction

This section describes the utility providers currently serving the planning area and evaluates the potential impacts of the City of Long Beach (City) General Plan Land Use Element and Urban Design Element (LUE/UDE) project (proposed project) on utility providers. This section is based on multiple data sources, including the Conservation Element (1973) of the City of Long Beach (City) General Plan and the proposed General Plan Land Use and Urban Design Elements (February 2016) (Appendix F), as well as coordination with potentially affected utility providers. Specific references are identified within the subsection for each respective issue. This section addresses the following utility service systems (service providers are noted in parenthesis):

- Solid Waste (Los Angeles County Sanitation Districts [LACSD])
- Wastewater (Los Angeles County Sanitation Districts [LACSD])
- Water (Long Beach Water Department [LBWD])

4.9.2 Methodology

After the Notice of Preparation (NOP) was issued, water, wastewater, and solid waste demands were modeled for build out of the proposed project. These calculations were modeled on a citywide basis. Generation rates obtained from applicable service providers were applied to both the existing (2012) land uses and the 2040 land uses proposed as part of the project. The net difference between the 2040 demand for utilities was then compared with the existing demand to generate the project-related increase in demand for water, wastewater treatment, and solid waste facilities. This increase was then compared with the projected capacity of applicable service providers to continue to service existing and new development in the City through the year 2040.

4.9.3 Existing Environmental Setting

Solid Waste. Solid waste collection services are provided to the City of Long Beach by the City's Environmental Services Bureau; however, the City is also a member of the LACSD. Based on solid waste generation rates identified from the California Department of Resources Recycling and Recovery (CalRecycle) website,[1] it was estimated that the annual tonnage of solid waste generated in the City in 2012 was 260,964 tons per year (521,927,005 pounds per year).

A large majority of the City's solid waste is disposed of at the Southeast Resource Recovery Facility (SERRF). The City and LACSD have a Joint Powers Agreement to operate the SERRF, located at 120 Pier S Avenue in Long Beach. SERRF is a refuse-to-energy transformation facility that reduces the volume of solid waste by approximately 80 percent while creating electrical energy. The SERRF

[1] CalRecycle, Estimated Solid Waste Generation and Disposal Rates. Website: http://www.calrecycle.ca.gov/wastechar/wastegenrates/ (accessed May 18, 2016).

produces 36 megawatts (MW) of electricity for Southern California Edison (SCE), which is enough to supply 35,000 homes with electrical power.[1]

In the City, most of the solid waste generated is taken to the SERRF. Solid waste from the existing uses in the City is collected and trucked to the SERRF where it is processed through one of three boilers. In addition, the SERRF performs "front-end" and "back-end" recycling by recovering items such as white goods prior to incineration and collection metals removed from the boilers after incineration. Each month, an average of 825 tons of metal are recycled rather than sent to a landfill. The Solid Waste Facility Permit from the County Solid Waste Management Program for the SERRF authorizes the disposal of a maximum of 2,240 tons per day.[2] Currently, the SERRF processes approximately 1,290 tons per day.[3] Remaining capacity and estimated closure dates are not determined because the SERRF is a transformation facility that converts solid waste to energy and ash. In 2012, approximately 203,040 tons, or 47 percent,[4] of the solid waste disposed of by Long Beach residents and businesses were disposed of at the SERRF.

In 2013, the Puente Hills Landfill closed after 56 years of operation. As such, solid waste considered unproccessible to the SERRF (i.e., would damage or threaten to damage combustion units or otherwise adversely affect maintenance of SERRF, present a substantial endangerment to the health or safety of the public or SERRF employees, cause any permit requirement or condition to be violated, exceed the materials handling capacity of the combustion feed system[5]) and generated in the City is taken to landfills in Orange, San Bernardino and Riverside Counties.[6] According to LACSD, upon the closure of the Puente Hills Landfill, residents and commercial haulers are encouraged to use other nearby LACSD's facilities for disposal and recycling. Alternative disposal options include two ramped-up Material Recovery Facilities (MRF) run by LACSD, the Downey Area Recycling and Transfer Facility (DART) in Downey, and the Puente Hills MRF, situated at the base of the Puente Hills Landfill. Completed in 2011, owned and operated by LACSD; the Mesquite Regional Landfill is permitted to receive up to 20,000 tons of municipal solid waste per day, with a total capacity of 600 million tons of municipal waste.[7] Through the available MRFs run by LACSD, the temporary use of landfills in Orange, San Bernardino and Riverside Counties (refer to Table 4.9.A, below), and plans for future implementation of the waste-by-rail landfill system, Los Angeles County will be able to meet projected landfill needs.

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1 Los Angeles County Sanitation Districts (LACSD), Southeast Resource Recovery Facility (SERRF) Brochure. Website: http://lacsd.org/solidwaste/swfacilities/rtefac/serrf/brochure.asp (accessed June 15, 2015).

2 Southeast Recovery Facility, Solid Waste Facility Permit, Permit No. 19-AK-0083. Website: http://www.calrecycle.ca.gov/Actions/Documents%5C26%5C20152015%5C1272%5C019A%20Proposed%20Modified%20SWFP%20SERRF%2019-AK-0083%20recd%2012-31-14.pdf (accessed May 11, 2016).

3 LACSD. Southeast Resource Recovery Facility (SERRF) Brochure. Website: http://lacsd.org/solidwaste/swfacilities/rtefac/serrf/brochure.asp, (accessed December 22, 2015).

4 County of Los Angeles. 2012. Countywide Integrated Waste Management Plan, 2012 Annual Report, Figure 20: Southeast Resource Recovery Facility.

5 Long Beach Gas and Oil. Acceptable Waste. Website: http://www.longbeach.gov/lbgo/about-us/serff/acceptable-waste/ (accessed December 22, 2015).

6 Los Angeles Daily News. *Puente Hills Landfill will close forever Thursday.* Website: http://www.dailynews.com/environment-and-nature/20131031/puente-hills-landfill-will-close-forever-thursday (accessed December 22, 2015).

7 LACSD. Waste-By-Rail Website: http://www.lacsd.org/solidwaste/wbr/default.asp (accessed June 15, 2015).

Table 4.9.A: Capacity of Landfills Serving the City of Long Beach (2012)

Landfill and Location	Remaining Capacity	Maximum Permitted Throughput (tons/day)	Estimated Closing Date
Antelope Valley Public Landfill (Palmdale, CA)	20,400,000 cubic yards	3,564	1/1/2042
Azusa Land Reclamation Co. Landfill (Azusa, CA)	51,512,201 cubic yards	8,000	01/01/2045
Chiquita Canyon Sanitary Landfill (Castaic, CA)	606,830 cubic yards	6,000	11/24/2019
Commerce Refuse-To-Energy Facility (Commerce, CA)	1,000 tons/day (permitted capacity)	1,000	N/A
El Sobrante Landfill (Corona, CA)	145,530,000 Tons	16,054	01/01/2045
Frank R. Bowerman Sanitary LF (Irvine, CA)	205,000,000 cubic yards	11,500	12/31/2053
Kettleman Hills - B18 Nonhaz Codisposal (Kettleman City, CA)	6,000,000 cubic yards	8,000	N/A
Lancaster Landfill and Recycling Center (Lancaster, CA)	14,514,648 cubic yards	5,100	03/01/2044
McKittrick Waste Treatment Site (McKittrick, CA)	769,790 cubic yards	3,500	12/31/2059
Mid-Valley Sanitary Landfill (Rialto, CA)	67,520,000 cubic yards	7,500	04/01/2033
Olinda Alpha Sanitary Landfill (Brea, CA)	36,589,707 cubic yards	8,000	12/31/2021
Prima Deshecha Sanitary Landfill (San Juan Capistrano, CA)	87,384,799 cubic yards	4,000	12/31/2067
Puente Hills Landfill (Closed) (Industry, CA)	N/A	N/A	10/31/2013
San Timoteo Sanitary Landfill (Redlands, CA)	13,605,488 cubic yards	2,000	01/01/2043
Savage Canyon Landfill (Whittier, CA)	9,510,833 cubic yards	3,350	12/31/2055
Simi Valley Landfill & Recycling Center (Simi Valley, CA)	119,600,000 cubic yards	9,250	01/31/2052
Southeast Resource Recovery Facility (Long Beach, CA)	2,240 tons/day (permitted capacity)	2,240	N/A
Sunshine Canyon City/County Landfill (Los Angeles County, CA)	96,800,000 cubic yards	12,100	12/31/2037

Source: CalRecycle, Solid Waste Information System (SWIS) Facility/Site Listing. Website: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx (accessed May 17, 2016).
N/A = not applicable

Wastewater. The LBWD is responsible for operating and maintaining over 765 miles of sanitary sewer lines in the City. Through these sanitary sewer lines, the LBWD delivers over 40 million gallons per day (mgd) of wastewater to LACSD facilities located in the northern and southern areas of the City. The majority of the wastewater generated in the City is delivered to the Joint Water Pollution Control Plant (JWPCP) of LACSD (located at 24501 S. Figueroa Street) with the remaining portion delivered to the Long Beach Water Reclamation Plant (WRP) of LACSD (located at 7400 East Willow Street). Currently, the JWPCP treats approximately 263 mgd and has a total permitted

design capacity of 400 mgd, whereas the Long Beach WRP treats approximately 15.1 mgd and has a total permitted capacity of 25 mgd.[1]

LACSD owns, operates, and maintains the large trunk sewers that form the backbone of the regional wastewater conveyance system. Local collector and/or lateral sewer lines are the responsibility of the jurisdiction in which they are located. LACSD owns, operates, and maintains approximately 1,400 miles of sewers, 48 active pumping plants, and 11 wastewater treatment plants. LACSD's service area encompasses approximately 824 square miles and includes 78 cities and unincorporated areas within Los Angeles County.[2]

Water Service. The LBWD provides water services to the entire City through a series of underground pipelines. The LBWD's service area includes over 912 miles of water mains, with 87,644 active service connections.[3] The Utilities Department receives its domestic water supply from the following three sources:

Water supply projections are shown in Table 4.9.B. As illustrated in Table 4.9.B, the major sources of water for the LBWD include imported water purchased (from the Metropolitan Water District of Southern California [MWDSC]), groundwater pumped and treated by the LBWD, and recycled water and. It is important to note that the LBWD is also partnering with other water agencies to conduct ongoing research into other possible new water supplies, including desalinated seawater, and actively supports water conservation measures to reduce water demand.

Table 4.9.B: Water Supplies – Current and Projected (af/yr)

Water Purchased From	2015	2020	2025	2030	2035	2040
Groundwater	32,693	33,001	33,501	34,001	34,501	35,001
Imported	35,100	35,100	35,100	35,100	35,100	35,100
Recycled Water	9,190	9,190	9,190	9,190	9,190	9,190
Total	**76,983**	**77,291**	**77,791**	**78,291**	**78.791**	**79,291**

Source: Long Beach Water Department, *2015 Draft Urban Water Management Plan,* Table 12-Existing and Projected Water Supplies (af/yr).
af/yr = acre-feet per year

Fire Flow. The City adopted the California Fire Code (CFC), with some amendments and modifications, as part of the City's Municipal Code. The modifications include amendments to fire extinguisher and storage requirements. Generally, the intent of the CFC is to prescribe regulations consistent with nationally recognized good practices for the safeguarding of life and property from the hazard of fire and explosion. Fire flow is the quantity of water available or needed for fire protection in a given area, and is normally measured in gallons per minute (gpm), as well as the duration of flow. Fire flow requirements, found in the City's Municipal Code, are

1 Adriana Raza, Sanitation Districts of Los Angeles, Comment Letter on the General Plan Land Use and Urban Design Elements Project, June 16, 2015.
2 LACSD. About the Sanitation Districts. Website: http://www.lacsd.org/aboutus/default.asp (accessed December 22, 2015).
3 Long Beach Water Department (LBWD). Fiscal Year 2015 Annual Budget Summary.

based on building types and floor area and range from 1,250 to 8,000 gpm at 20 pounds per square inch (psi).

In accordance with the CFC, the Long Beach Fire Department (LBFD) requires the installation of sprinkler systems in many new buildings, including retail buildings in excess of 5,000 square feet (sf) and buildings greater than 55 feet (ft) in height. In addition, on-site hydrants are required in any portion of a project site that exceeds the allowable distance from a public hydrant located in the right-of-way. Fire flow requirements are subject to LBFD standards based on the type of building and its uses on a case-by-case basis.

Storm Drain. The City currently has an intricate storm drainage system, which consists of streets and gutters, catch basins, and underground pipes, ditches, streams and creeks, pump stations, and channels/rivers. This system carries storm waters away from residential and business uses in the City to designated drainage areas, including the Los Angeles and San Gabriel Rivers. In order to ensure proper function of the City's storm drain system, the City performs bi-annual maintenance work on the system, in addition to emergency repair work on an as needed basis.

4.9.4 Regulatory Setting

Federal Policies and Regulations. There are no applicable federal policies or regulations related to the proposed project.

State Policies and Regulations.

Senate Bill 1374. Senate Bill (SB) 1374 requires that the annual report submitted to CalRecycle (formerly known as the California Integrated Waste Management Board [CIWMB]) include a summary of the progress made in the diversion of construction and demolition waste materials. In addition, SB 1374 requires CalRecycle to adopt a model ordinance suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition waste materials from landfills by March 1, 2004. Local jurisdictions are not required to adopt their own construction and demolition ordinances, nor are they required to adopt CalRecycle's model by default. However, adoption of such an ordinance may be considered by CalRecycle when determining whether to impose a fine on a jurisdiction that has failed to implement its Source Reduction and Recycling Element (SRRE).

Urban Water Management Planning Act. The Urban Water Management Planning Act (UWMPA) of 1983 requires preparation of a strategy that plans for water supply and assesses the reliability of water sources over a 20-year period in 5-year increments; identifies and quantifies adequate water supplies for existing and future demands under normal, single-dry, and multiple-dry years; and implements conservation controls to ensure the efficient use of urban water supplies. Requirements set forth in the UWMPA apply to every urban water supplier with 3,000 customers or more or that provides over 3,000 acre feet of water per year (af/yr) to ensure reliability in water service to meet the needs of customers during normal, dry, and multiple-dry years.

Governor's Drought Declaration. On January 17, 2014, Governor Brown proclaimed a State of Emergency asking Californians to reduce water use by 20 percent and directing State officials to take all necessary actions to make water available. Additional key measures in the proclamation include the following: directing water suppliers to implement water shortage contingency plans, ordering the State Water Resources Control Board (SWRCB) to consider petitions for consolidation of places of use for the State Water Project and Central Valley Project in an effort to streamline water transfers and exchanges between water users, directing the California Department of Water Resources and the SWRCB to accelerate funding for projects that would have broken ground in 2014 and would enhance water supplies, ordering the SWRCB to notify water rights holders across the State that they may be directed to cease or reduce water diversions based on water shortages, and requiring the SWRCB to consider modifying requirements for releases of water from reservoirs or diversion limitations to conserve water in reservoirs and improve water quality.

Following the Governor's drought declaration, the State Department of Water Resources (DWR) announced on January 31, 2014, that if current dry conditions persist, customers would receive no deliveries from the State Water Project. Deliveries to agricultural districts with long-standing water districts were determined to be at a risk for a potential 50 percent reduction.

On April 25, 2014, the Governor issued an executive order to accelerate actions intended to reduce harmful effects of the drought and called on Californians to redouble their efforts to conserve water. On July 15, 2014 the SWRCB approved an emergency regulation requiring water conservation for outdoor water use. Subsequently, on December 22, 2014, Governor Brown issued Executive Order (EO) B-28-14, which extends the operation of the provisions outlined in the April 2014 executive order.

On April 1, 2014, the Governor issued EO B-29-15, which ordered the SWRCB to impose restrictions to achieve a 25 percent reduction in potable urban water usage through the end of February 2016, directed the DWR to lead a statewide initiative to replace 50 million sf of lawns and turf with drought-tolerant landscapes, and directed the California Energy Commission (CEC) to implement a statewide rebate program for the replacement of inefficient household devices.

It should be noted that the LBWD has been found compliant with the EO and State Board rules, exceeding the required reduction in water usage.

Senate Bill 610. Enacted in 2001 (effective January 1, 2002), SB 610 Water Supply Assessment (SB 610 WSA) added Section 21151.9 to the Public Resources Code requiring that any proposed "project," as defined in Section 10912 of the Water Code, comply with Water Code Section 10910, et seq. 53 Commonly referred to as a "SB 610 Water Supply Assessment," Water Code Section 10910 et seq. outlines the necessary information and analysis that must be included in an environmental impact report (EIR) to ensure that a proposed land development has sufficient water supply to meet existing and planned water demands over a 20-year projection.

The standard for the certainty and reliability of water supplies sufficient to meet the demands of the proposed development is more exacting then that required for the Urban Water Management Plan (UWMP). Ultimately, because the SB 610 WSA is a source document for an EIR prepared

for a proposed project pursuant to the California Environmental Quality Act (CEQA), it must provide substantial evidence showing that sufficient water will be available to meet water demands for the water purveyor's existing and planned land uses over a 20-year planning horizon.

The initial question in conducting an SB 610 WSA is whether there is a "project" that is subject to the SB 610 WSA process. According to the SB 610 WSA requirements, a "project" is defined as any of the following:

- Residential development of more than 500 dwelling units;
- Shopping center or business establishment employing, more than 1,000 persons or having more than 500,000 sf floor space;
- Commercial office building employing more than 1,000 persons or having more than 250,000 sf of floor space;
- Hotel or motel, or both, having more than 500 rooms;
- Industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sf of floor area;
- Mixed-use project that includes one or more of the projects specified above; or
- Project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project.

If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

Assembly Bill 939: Solid Waste Reduction. The California Integrated Waste Management (CIWM) Act of 1989 (Assembly Bill [AB] 939) was enacted as a result of a national crisis in landfill capacity, as well as a broad acceptance of the hierarchy (reduce, reuse, recycle, environmentally sound landfilling, and transformation) as the desired approach to solid waste management. AB 939 mandated local jurisdictions to meet waste diversion goals of 25 percent by 1995 and 50 percent by 2000, and established an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. Other elements included encouraging resource conservation and considering the effects of waste management operations. The diversion goals and program requirements are implemented through a disposal-based reporting system by local jurisdictions under CIWMB regulatory oversight. Since the adoption of AB 939, landfill capacity has increased. Regional capacity problems exist, but capacity is no longer considered the statewide crisis it once was. AB 939 has achieved substantial progress in waste diversion, program implementation, solid waste planning, and protection of public health and safety and the environment from the operation of landfills and

solid waste facilities.[1] The City offers recycling programs for both commercial and residential uses.

California Integrated Waste Management Act of 1989. The CIWM Act of 1989 (Public Resource Code [PRC] Division 30), enacted through AB 939 and modified by subsequent legislation, required all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of waste by 2000 (PRC Section 41780). The State determines compliance with this mandate to divert 50 percent of generated waste (which includes both disposed and diverted waste) through a complex formula. This formula requires cities and counties to conduct empirical studies to establish a base-year waste generation rate against which future diversion is measured. The actual determination of the diversion rate in subsequent years is arrived at through deduction, not direct measurement; instead of counting the amount of material recycled and composted, the city or county tracks the amount of material disposed at landfills, then subtracts the disposed amount from the base-year amount. The difference is assumed to be diverted (PRC 41780.2).

Assembly Bill 75. AB 75, passed in 1999, and the State Agency Model Integrated Waste Management Act (Chapter 764, Statutes of 1999, Strom-Martin) took effect on January 1, 2000. This bill added new provisions to the PRC, mandating that State agencies develop and implement an Integrated Waste Management Plan (IWMP) that outlines the steps to be taken to achieve the required waste diversion goals.

Current statutes require all State agencies and large facilities to divert at least 50 percent of their solid waste from disposal facilities on and after January 1, 2004. The law also requires that each State agency and large facility submit an annual report to CalRecycle summarizing its yearly progress in implementing waste diversion programs; it also mandated that community service districts providing solid waste services report disposal and diversion information to the city, county, or regional agency in whose jurisdiction they are located. In addition to the waste diversion goals, all State agencies are required to buy recycled materials from 12 different categories ranging from paper and plastic to paint, solvents, and lubricating oils.

Senate Bill 1016. The Per Capita Disposal Measurement System Act (SB 1016) changed the way State agencies and local governments measure their progress toward meeting the statutory waste diversion mandates. State agencies and large State facilities now use per capita disposal as an indicator of their compliance with the 50 percent waste diversion requirement. Compliance is also determined by diversion program implementation.

Senate Bill 7. SB X7-7 was enacted in the 2009, authorizing the DWR to prepare a plan implementing urban water conservation requirements. SB X7-7, otherwise referred to as the 20x2020 Water Conservation Plan, requires urban water suppliers to adopt a water conservation

[1] Cal Recycle. AB 939 in the New Millennium. Website: http://www.calrecycle.ca.gov/Archive/21stCentury/Events/FutureMar99/issues1.htm (accessed October 15, 2015).

target of 20 percent reduction in urban capita water use by the year 2020 compared to a 2005 baseline. SB X7-7 also requires agricultural water providers to prepare water management plans, measure water deliveries, and implement water efficiency measures.

Assembly Bill 341. AB 341, enacted in 2011, changed the due date of the State agency waste management annual report to May 1 beginning in 2012. The bill makes a legislative declaration that is the policy goal of the State that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by 2020.

Title 24 of the California Code of Regulations. The California Energy Code (Title 24, Part 6 of the California Code of Regulations, California's Energy Efficiency Standards for Residential and Nonresidential Buildings), provides conservation standards for the new construction and rehabilitation of residential and nonresidential buildings and regulates energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce standards for new buildings provided these standards meet or exceed Title 24 Building Code requirements. Title 24 regulates building energy consumption for heating, cooling, ventilation, water heating, and lighting with regard to both electricity and natural gas. These standards are typically updated every 3 years by the CEC. The California Green Building Standards Code (CALGreen Code) was most recently updated in 2016 to include new mandatory measures for residential as well as nonresidential uses; the new measures take effect on January 1, 2017. Compliance with Title 24 efficiency requirements can be achieved through following a prescriptive approach outlined in the standards or following a performance approach using computer modeling. The prescriptive approach offers relatively little design flexibility but is easy to use, while the performance approach allows design flexibility that can be used to find the most cost-effective solutions but that requires multiple calculations.

Local Policies and Regulations.

Municipal NPDES Permit. The City of Long Beach is subject to the *Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges from the City of Long Beach* (Permit No. R4-2014-0024, National Pollutant Discharge Elimination System (NPDES) No. CAS004003) (MS4 Permit), which was approved February 6, 2014, and became effective on March 28, 2014. This MS4 Permit supersedes Order No. 99-060 issued in 1999. To implement the requirements of the 1999 MS4 Permit, the City developed the Long Beach Storm Water Management Program (LBSWMP), a comprehensive program of practices and activities aimed at reducing or eliminating storm water pollutants from new development to the maximum extent practicable.

The 2014 MS4 Permit requires that the City develop a Watershed Management Program (WMP) to implement the requirements of the MS4 Permit on a watershed scale that will include customized strategies, control measures, and best management practices (BMPs). WMPs shall be developed using the Los Angeles Regional Water Quality Control Board (RWQCB) Watershed Management Areas (WMAs). The City can elect to collaborate with other MS4 permittees on the development of an Enhanced Watershed Management Program (EWMP) that will evaluate the multibenefits of regional

projects and implement regional control measures and BMPs. The WMP or EWMP will include an evaluation of existing water quality conditions, identify water quality priorities within each WMA, select watershed control measures, and incorporate compliance schedules. The draft WMPs were required to be submitted to the Los Angeles RWQCB by June 28, 2015. Since January 2015, the following WMPs have been approved and are currently being implemented: Long Beach Nearshore, Los Cerritos Channel Watershed, Lower Los Angeles River Watershed, and Lower San Gabriel River.[1]

Currently, the MS4 permit requires that the project designer and/or contractor of all new development and redevelopment projects that fall under specific "priority" project categories must develop a Standard Urban Stormwater Mitigation Plan (SUSMP). Certain categories of development are considered "priority" because the Los Angeles RWQCB determined that they have the greatest potential to degrade water quality. The three categories of "priority" projects include the following: (1) 10 or more home subdivisions; (2) 100,000 sf or larger commercial developments; and (3) projects located adjacent to or directly discharging to environmentally sensitive areas. Because the project is a planning/policy action, future development projects occurring under the proposed project would be evaluated based on these three criteria.

City of Long Beach General Plan Mobility Element. In October 2013, the City approved the Mobility Element of the City's General Plan. The Mobility Element seeks to guide development and improvements to the existing circulation system. As part of the existing circulation system, the City's Mobility Element considers the mobility of critical resources (e.g., water, energy, and communications). The following goals and policies related to utilities and services systems in the City's Mobility Element are applicable to the proposed project.

Strategy No. 19: Promote well-maintained water, wastewater, and stormwater infrastructure systems that serve the demands of existing and future residents and businesses while mitigating environmental impacts.

MOR Policy 19-1: Plan for and provide appropriate levels and types of infrastructure based on the desired character of each neighborhood or district.

MOR Policy 19-2: Ensure that development is appropriate and in scale with current and planned infrastructure capabilities.

City of Long Beach Municipal Code. Chapter 18.76, Water Submeters, of the City's Municipal Code establishes the City's intent to conserve water to ensure sufficient water resources are available to current and future City residents. Specifically, this chapter of the City's Municipal Code encourages water conservation in multi-family residential and mixed-use building by requiring the installation of water submeters at individual units to assist building owners in allocating water costs per unit, thereby incentivizing residents to conserve water.

[1] California Environmental Protection Agency, Los Angeles Regional Water Quality Control Board, Storm Water-Municipal Permits. Website: http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/ (accessed May 20, 2016).

According to Section 18.67.070 (Compliance with WMP) of the City's Municipal Code, any demolition project of "any valuation" shall submit documentation that it has met diversion requirements. Specifically, the City requires 60 percent of the waste tonnage of construction or demolition debris to be recycled, reused, or diverted from landfills or disposal sites.

According to Section 18.48.010 (Adoption), the City adopted the CFC, with some amendments and modifications, as part of the City's Municipal Code. Generally, the intent of the CFC is to prescribe regulations consistent with nationally recognized good practices for the safeguarding of life and property from the hazard of fire and explosion.

Long Beach Water Department, Urban Water Management Plan. In accordance with the Urban Water Management Plan Act, the LBWD has prepared a 2015 UWMP, which projects that the LBWD's water supply will increase by 7 percent from 2015 to 2040 to meet projected water demands.

City of Long Beach General Plan. Public utilities goals are included in the Conservation Element (adopted in 1973) of the City's General Plan. The following goals are applicable to the proposed project:

> **Water Resource Management Goal 1:** To assure adequate quantity and quality of water to meet the present and future domestic, agricultural, and industrial needs of the City.
>
> **Water Resource Management Goal 5:** To maintain, upgrade, and improve water systems and facilities serving Long Beach.

Sustainable City Action Plan. The City adopted the Sustainable City Action Plan on February 2, 2010, with the purpose of moving the City towards becoming a more sustainable City. Sustainability is defined in this plan as maximizing individual benefits and minimizing negative environmental impacts to ensure the long-term health of the environment for the enjoyment and use of current and future generations. The Sustainable City Action Plan includes initiatives, goals, and actions that are meant to guide City decision-makers in striving towards achieving a sustainable City. The following goals, initiatives, and actions are applicable to the proposed project:

> **Waste Reduction Goal 1:** Annual reduction in average pounds of solid waste generated per person per day.
>
> **Waste Reduction Initiative 1:** Increase diversion by reducing waste and increasing recycling and reuse.
>
> **Water Goal 1:** Reduce per capita use of potable water, exceeding the State mandate to achieve a demand reduction of 20% in per capita water use by the year 2020.

Water Initiative 1: Ensure a sustainable water supply through conservation and reduced dependence on its imported water.

Water Initiative 2: Implement low impact development strategies to reduce runoff and pollution at the source and increase the beneficial use of rainwater.

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

The following proposed strategies, policies, and implementation measure are applicable to the analysis of utilities:

Land Use Element.

Strategy No. 16: Improve public infrastructure to serve new development, established neighborhoods, commercial centers, and industry and regional-serving facilities.

LU Policy 16-1: Coordinate land use development and infrastructure investment.

LU Policy 16-2: Maintain adequate and sustainable infrastructure systems to protect the health and safety of all Long Beach residents, businesses, institutions and regional-serving facilities.

LU-M-55: Implement a City green business program that incorporates goals and strategies for waste reduction, energy efficiency, water conservation, green purchasing and similar strategies.

Urban Design Element. There are no goals, strategies, policies, or implementation measures in the UDE that are applicable to the analysis of utilities.

4.9.6 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *CEQA Guidelines* and the City's *CEQA Thresholds of Significance*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on utilities providers if it would:

Threshold 4.9.1: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

Threshold 4.9.2: Require or result in the construction of new water or wastewater treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

Threshold 4.9.3: Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

Threshold 4.9.4: Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;

Threshold 4.9.5: Result in a determination by the wastewater treatment provider which serves or may serve the project that is has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

Threshold 4.9.6: Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or

Threshold 4.9.7: Comply with federal, state, and local statutes and regulations related to solid waste.

The analysis in the Initial Study (Appendix A) determined that the proposed project would result in a less than significant impact with respect to compliance with federal, State, and local statutes and regulations related to solid waste (Threshold 4.9.7) because future individual projects resulting from project approval would be subject to separate environmental review on a project-specific basis and would be required to comply with existing and future statutes and regulations mandated by the City, State, or federal law. Therefore, impacts related to compliance with federal, State, and local statutes and regulations related to solid waste are not discussed further in this Draft EIR.

4.9.7 Standard Conditions and Project Design Features

The proposed project would not be required to adhere to any standard conditions related to utilities.

4.9.8 Project Impacts

Threshold 4.9.1: Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board

Less than Significant Impact. Wastewater generated in the City is treated by the LACSD. As previously stated, the majority of the wastewater generated in the City is delivered to the JWPCP of LACSD with the remaining portion delivered to the Long Beach WRP of the LACSD. The JWPCP treats approximately 263 mgd and has a total permitted design capacity of 400 mgd, whereas the Long Beach WRP treats approximately 15.1 mgd and has a total permitted capacity of 25 mgd.[1]

Wastewater demand projections are shown in Table 4.9.C. According to the LACSD average wastewater generation factors,[2] the proposed project is anticipated to generate a total estimated wastewater flow of approximately 40.2 mgd, or an approximate increase of 2.8 mgd over 2012 usage.

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1 LACSD. Adriana Raza. Comment Letter on the General Plan Land Use and Urban Design Elements Project, June 16, 2015.

2 LACSD, Wastewater Loadings for each class of land use. Website: http://lacsd.org/civica/filebank/blobdload.asp?BlobID=3531 (accessed June 6, 2016).

Table 4.9.C: Wastewater Demand – Current and Projected (gpd)

Land Use Type	Unit Type	Usage Factor	2012 Usage (gpd)	2040 Buildout (gpd)	2012 Usage (gpd)	2040 Buildout (gpd)	Project-Related Increase (gpd)
Single Family Residential	gpd/unit	260	63,934	64,598	16,622,840	16,795,480	172,640
Multi-Family Residential	gpd/unit	156	99,860	110,940	15,578,160	17,306,640	1,728,480
Commercial/Retail	gpd/ksf	100	21,015,600	24,484,100	2,101,560	2,448,410	346,850
Office	gpd/ksf	200	7,984,400	8,977,500	1,596,880	1,795,500	198,620
Industrial	gpd/ksf	25	17,571,000	25,240,600	439,275	631,015	191,740
Public Facilities/Institutional	gpd/ksf	50	21,474,000	24,435,800	1,073,700	1,221,790	148,090
Total	**-**	**-**	**-**	**-**	**37,412,415**	**40,198,835**	**2,786,420**

Source: Los Angeles County Sanitation District, Table 1. Website: http://www.lacsd.org/civicax/filebank/blobdload.aspx?blobid=3531.
gpd = gallons per day
ksf = thousand square feet

The LACSD facilities serving the project site have a remaining capacity of 146.9 mgd. The project-related increase in wastewater would represent approximately 2 percent of the remaining capacity of these facilities. As such, there is sufficient wastewater treatment capacity within the LACSD facilities to accommodate the increase in wastewater demand citywide, and no major improvements are required. The increase in wastewater flows associated with the proposed project would not exceed the treatment requirements of the RWQCB for the JWPCP and Long Beach WRP of the LACSD. Furthermore, all new development in the City occurring under the proposed project would be subject to sewer capacity considerations as part of the City development approval process. Future improvements and upgrades to existing sewer lines would continue to be prioritized on an as-need basis and development fees collected from future projects facilitated by project approval would fund the highest priority projects. Therefore, impacts related to wastewater are less than significant, and no mitigation is required.

Threshold 4.9.2: **Require or result in the construction of new *water* or wastewater treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects**

OR

Threshold 4.9.4: **Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed**

Less Than Significant Impact. The LBWD provides water service to the entire City. The proposed project does not include physical improvements, but future projects would result in both short-term and long-term increases in water demand.

An increase in long-term demand for water is anticipated to occur during operation of future development occurring under the proposed project. As required for all new development in California, the proposed project would comply with California State law regarding water conservation measures, including pertinent provisions of Title 24 of the California Government Code (Title 24) regarding the use of water-efficient fixtures. Water demand projections are shown in Table 4.9.D.

Table 4.9.D: Current and Projected Water Demand by Sector (in Acre-Feet)

Land Use Type	2015 Usage	2040 Buildout
Single Family Residential	17,778	20,363
Duplex	3,114	3,421
Multi-Family Residential	15,517	20,562
Irrigation	2,187	2,208
Commercial	14,359	16,374
Industrial	219	122
Fire Lines	4	3
Losses	2,028	2,882
Conservation	0	(6,830)
Total	**55,206**	**59,105**

Source: Long Beach Water Department. 2015 Urban Water Management Plan, Table 6,Water Demand by Sector.
af = acre-feet per year

The 2015 UWMP projects future water demands separately for each land use sector. These projections account for distribution system losses and water conservation measures. The water demand projections in the 2015 UWMP account for the Southern California Association of Governments' (SCAG) 2012 Regional Transportation Plan (RTP) population, housing, and employment growth projections, which are slightly higher than the most current socioeconomic projections included in SCAG's Draft 2016 RTP. The 2015 UWMP includes the higher 2012 projections to err on the side of over estimating growth, and thereby err on the side of over estimating water demand and the need to develop additional supplies or pursue additional water conservation methods. Because the proposed project accommodates growth consistent with SCAG's growth projections, project-related growth and its associated water demand has been accounted for in the 2040 scenario identified in the 2015 UWMP.

As illustrated by Table 4.9.C, build out of the proposed project (2040) would result in a forecasted demand of approximately 59,105 af, or an approximate increase of approximately 3,3899 mgd over 2015 usage. The anticipated 2040 water demand represents approximately 7 percent of the LBWD's projected water supply for the year 2040.[1] Therefore, the project-related increase in water demand would also be within the LBWD's projected water supply (estimated at 79,291 af) for its service area in the year 2040.

[1] 59,105 – 55,206 af/yr => 3,899 af/yr =>3,809/ 55,206 af/yr = 7 percent.

UWMP's are essential documents by which cities and counties determine their water supplies consistent with general plan updates. The accuracy and usefulness of UWMPs allow for cities and counties to determine the water demand for a proposed development by determining whether or not the project was included as part of the projected water demand of the current UWMP, which accounts for a growth projections outlined in a city or county's General Plan. Consequently, the water demand does not need to be separately evaluated so long as a project is consistent with the UWMP and General Plan. The City's most current *adopted* UWMP was adopted in 2010 and its service population was based on 2008 SCAG forecasts; however, the current *draft* UWMP was prepared in 2015 and is currently going through the approval process. Because the project has been determined to be consistent with water demands in the 2015 UWMP and because the LBWD has identified a surplus water supply to serve the projected water demands through the year 2040, the project-related demand for water would be consistent with the City's UWMP.

Additionally, under AB 610, a WSA would be required for any project if it is a residential development consisting of 500 units or more; a commercial or business development employing more than 1,000 persons or consisting of 500,000 sf or more of floor space; a commercial office building employing more than 1,000 persons or consisting of more than 250,000 sf of floor space; or an industrial, manufacturing, or processing plant or industrial park planning to house more than 1,000 persons, occupying more than 40 acres, or having more than 650,00 sf of floor area. Individual projects occurring under the proposed project would be required to prepare a WSA if they meet any of the requirements under AB 610. Therefore, impacts related to water demand would be less than significant, and no mitigation is required.

Threshold 4.9.2: **Require or result in the construction of new water or *wastewater* treatment or collection facilities or expansion of existing facilities, the construction of which could cause significant environmental effects**

OR

Threshold 4.9.5: **Result in a determination by the wastewater treatment provider which serves or may serve the project that is has adequate capacity to serve the project's projected demand in addition to the provider's existing commitment**

Less than Significant Impact.

Wastewater. Development of the proposed project would result in long-term increases in wastewater generation. The proposed project does not include any physical improvements, but allows future development that is anticipated to create an increase in solid waste disposal needs within the City. As noted in Section 4.6, Population and Housing, implementation of the proposed project could result in the development of up to an additional 11,744 dwelling units and the addition of 51,230 persons. Future projects would be reviewed by the City of Long Beach on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted.

The proposed project does not include physical improvements, but sanitary services during construction of future projects would likely be provided by portable toilet facilities, which transport waste off site for treatment and disposal. Therefore, during construction, potential impacts to

wastewater treatment and wastewater conveyance infrastructure would be less than significant, and no mitigation is required.

No new major sewer upgrades are anticipated or recommended for the proposed project. All new development in the City will be subject to sewer capacity considerations as part of the City development review and approval process. Improvements and upgrades to sewer lines are prioritized based on need. Development fees from future projects occurring under the proposed project would be collected from each project and used to fund the highest priority improvements.

Wastewater treatment for the proposed project would be provided by LACSD. Wastewater from the planning area would be delivered to the JWPCP and the Long Beach WRP, which have remaining permitted capacities of 137 mgd and 9.9 mgd, respectively. When combined, the JWPCP and Long Beach WRPs have a combined remaining capacity of 146.9 mgd. Build out of the proposed project (2040) would result in approximately 2.8 mgd in wastewater. This forecasted wastewater generation represents approximately 2 percent of the residual design capacity of the JWPCP and the Long Beach WRP. The proposed project would not substantially or incrementally exceed the current or future scheduled capacity of the JWPCP or Long Beach WRP by generating flows greater than those anticipated. Furthermore, the City would require future project applicants to pay a Sewer Capacity Fee, which would further reduce potential impacts related to wastewater treatment. Therefore, project impacts related to wastewater treatment would be less than significant, and no mitigation is required.

Threshold 4.9.3: Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects

Less than Significant Impact. The proposed project does not include any physical improvements, but allows future development that would have the potential to create a need for new or expanded storm water drainage facilities within the City. Future projects would be reviewed by the City of Long Beach on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted.

Future development under the proposed project would be required to comply with the provisions of the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), or any other subsequent applicable permits. The NPDES program regulates storm water and non-storm water discharges associated with construction or demolition activities including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity that results in a land disturbance equal to or greater than 1 acre. Future grading and construction activities would disturb soils and construction of structures would increase impervious area, which can increase storm water runoff during construction. However, the Construction General Permit requires preparation of a Storm Water Pollution Prevention Plan (SWPPP) to identify construction BMPs to be implemented during project construction in order to reduce impacts to water quality, including those impacts associated with soil erosion, siltation, spills, and increased runoff. With compliance with the Construction General Permit, construction impacts related to the capacity of the existing storm water drainage systems would be reduced to less than significant levels.

Operation of future projects would increase impervious surface area, which would reduce infiltration. Future projects would be reviewed on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted. Depending on the size and nature of the projects, a Water Quality Management Plan (WQMP) would be developed on a project-specific basis to address post-construction urban runoff and storm water pollution from new development and significant redevelopment projects. Detailed information about on site hydrology, runoff flow rates and pollutant loads are included in these analyses.

The hydrological analyses included in the WQMPs prepared for future projects would identify BMPs and improvements to the existing storm drain system that would ensure that the City would be able to adequately handle increased storm water runoff as a result of the proposed project. In addition, as previously discussed in Section 4.9, Hydrology and Water Quality, of the Initial Study (Appendix A), the proposed project would have less than significant impacts related to hydrology and water quality because the proposed project is a planning/policy action and does not include the physical construction of any development that could impede or impair water quality and because future projects facilitated by project approval would be required to comply with applicable regulations pertaining to hydrology and water quality. Therefore, the proposed project would result in less than significant impacts related to the construction or expansion of storm water drainage facilities, and no mitigation is required.

Threshold 4.9.6: Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs

Less than Significant Impact. The proposed project does not include any physical improvements, but allows future development that is anticipated to create an increase in solid waste disposal needs within the City. As noted in Section 4.6, Population and Housing, implementation of the proposed project could result in the development of up to an additional 11,744 dwelling units and the addition of 51,230 persons. Future projects would be reviewed by the City of Long Beach on a project-by-project basis and would need to comply with any requirements in effect when the review is conducted.

Construction of future projects facilitated by the proposed project would generate demolition waste; however, such debris would be accommodated by the County's existing landfills, with a large majority of the City's solid waste being disposed of at the SERRF. In addition, construction waste would be recycled to the extent feasible pursuant to Chapter 18.67, Construction and Demolition Recycling Program, of the City's Municipal Code. Under the Municipal Code, covered projects requiring demolition or building permits issued on or after January 1, 2014, are required to divert at least 60 percent of all project-related construction and demolition material from landfills. Compliance with this chapter of the Municipal Code would be a condition of approval on any construction or demolition permit issued for a covered project. Therefore, the proposed project would have a less than significant impact related to solid waste generation during construction, and no mitigation measures regarding construction debris are required.

The City's Environmental Services Bureau provides solid waste collection services to collect and dispose of the solid waste/refuse generated by the City. Solid waste generated in the City is also transported to LACSD facilities when solid waste is considered unproccessable to the SERRF. Solid waste generated by operations associated with future development under the proposed project would

be collected by the City's Environmental Services Bureau and hauled to the SERRF, which currently processes an average of 1,290 tons of municipal solid waste each day[1], with a maximum capacity of 2,240 tons per day.[2] Therefore, the SERRF is currently operating at approximately 58 percent of its daily design capacity[3].

As described previously, it was determined that 260,964 tons per year of solid waste were disposed of in the City in 2012. Solid waste demand projections are shown in Table 4.9.E. As shown in Table 4.9.E, with the proposed project the City is forecast to generate approximately 1.6 million pounds of solid waste in 2040, or an increase of approximately 133,342 lbs per day.

Table 4.9.E: Solid Waste Demand – Current and Projected (lbs/day)

Land Use Type	Unit Type	Usage Factor	2012 Usage (lbs/day)	2040 Buildout (lbs/day)	2012 Usage (lbs/day)	2040 Buildout (lbs/day)	Project-Related Increase (lbs/day)
Single Family[1]	lbs/unit/day	10	63,934	64,598	639,340	645,980	6,640
Multi-Family[2]	lbs/unit/day	4	99,860	110,940	399,440	443,760	44,320
Commercial /Retail[3]	lbs/1,000 sf/day	5	21,015,600	24,484,100	105,078	122,421	17,343
Office[4]	lbs/1,000 sf/day	6	7,984,400	8,977,500	47,906	53,865	5,959
Industrial[5]	lbs/1,000 sf/day	5	17,571,000	25,240,600	87,855	126,203	38,348
Public Facilities/ Institutional[6]	lbs/sf/day	0.007	21,474,000	24,435,800	150,318	171,051	20,733
Total	**-**	**-**	**-**	**-**	**1,429,937**	**1,563,279**	**133,342**

Source: CalRecycle, Estimated Solid Waste Generation and Disposal Rates (accessed May 18, 2016).
1 County of Los Angeles Dept. of Regional Planning, Vesting Tentative Tract No. 47905, etc. (August 1992)
2 County of Los Angeles Dept. of Regional Planning, Vesting Tentative Tract No. 47905, etc. (August 1992)
3 County of Los Angeles Dept. of Regional Planning, Vesting Tentative Tract No. 47905, etc. (August 1992)
4 Stevenson Ranch Draft EIR (Phase IV) , Los Angeles County (April 1992)
5 Stevenson Ranch Draft EIR (Phase IV) , Los Angeles County (April 1992)
6 Draft EIR for the Central Commercial Redevelopment Project (Monterey Park Redevelopment Agency) (1992)
lbs/day = pounds per day
lbs/unit/day = pounds per unit per day
lbs/1,000 sf/day = pounds per thousand square feet per day
lbs/sf/day = pounds per square feet per day

As shown in Table 4.9.A, the solid waste facilities accepting the remaining solid waste generated from the City that is not treated at the SERRF have a combined remaining capacity of approximately 833.7 million cubic yards and closure dates as late of 2045. Therefore, there is sufficient landfill capacity in the region to serve solid waste generated by the proposed project. Furthermore, future development under the proposed project would also include efficient waste management procedures

1 LACSD. Southeast Resource Recovery Facility (SERRF) Brochure. Website. http://www.lacsd.org/solidwaste/swfacilities/rtefac/serrf/brochure.asp (accessed May 11, 2016).
2 CalRecycle. Facility/Site Summary Details: Southeast Resource Recovery Facility (19-AK-0083). Website. http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AK-0083/Detail/ (accessed May 11, 2016).
3 781 tons per day/2,240 tons per day = 0.348 (35 percent).

to reduce the amount of solid waste generated in the planning area. Therefore, impacts related to solid waste generation are considered less than significant, and no mitigation is required.

4.9.9 Mitigation Measures

In the absence of a significant impact, no mitigation measures have been identified for utilities.

4.9.10 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for utilities. The planning area includes the entire 50 square miles within the limits of the City of Long Beach; therefore, the cumulative area for utilities is listed below for each individual utility provider.

Wastewater. The geographic area for the cumulative analysis for wastewater treatment is defined as the City and LACSD. Within its service area, LACSD uses United States Census Bureau population information with population projections, as well as existing land use and build out or zoned land use to project current and future wastewater flows. The City is almost entirely built out, with most new development occurring as in-fill projects. While the proposed project does not include physical improvements, the future build out of the proposed project is not anticipated to generate wastewater above LACSD's current capacity. The proposed project would result in a population consistent with the growth projections for the City provided in the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy. Further, with consideration of the proposed PlaceTypes and growth, it is anticipated that LACSD's existing and planned wastewater treatment capacity would be sufficient to accommodate the growth forecasted by the United States Census Bureau within its service area, and development that is generally consistent with this forecast can be adequately served by LACSD facilities. Therefore, the proposed project's contribution to wastewater generation in the LACSD service area would not be cumulatively considerable, and no mitigation is required.

Water. The geographic area for the cumulative analysis of water infrastructure includes the service territory of the LBWD. According to the City's 2015 Regional UWMP, the MWDSC's future water supplies are reliable, because the MWDSC current allocation plan guarantees an amount of water close to the LBWD's need for water, and because the LBWD has a preferential right to the MWDSC supplies in excess of its need for that water. In addition, LBWD, which provides the groundwater supply to the City, projects that there are sufficient groundwater supplies to meet any future demand requirements in the City. Further, the current 2015 UWMP accounts for the proposed project's transition from traditional land uses to PlaceTypes and has demonstrated the LBWD has the ability to serve the project-related increase in water demand through the year 2040.

While the MWDSC would accommodate the project-related demand for water, the Southern California region is currently facing a challenge in securing its firm water supplies. Due to increased environmental regulations and completion for water from outside of the region, Southern California has seen a reduced supply of imported water. Furthermore, continued population and economic

growth has resulted in increased water demands, which have affected water delivery reliability and water availability.

MWDSC's 2010 Regional UWMP describes its water availability and identifies future water supplies to meet the region's long-term water demand. The 2010 Regional UWMP also identifies supply capacities from 2015 through 2035 under single dry-year, multiple dry-year, and average year hydrologic conditions. The 2010 Regional UWMP indicates that the region can provide reliable water supplies under both normal conditions and under the single-driest-year and multiple-dry-year scenarios. While the 2010 Regional UWMP has identified long-term water supplies to serve the region, the MWDSC has prepared for the possibility of being unable to meet the water demands of its member agencies. The MWDSC has established the Water Supply Allocation Plan (WSAP), which calculates each member agency's supply allocations and key implementation elements required for administering the allocation. The WSAP also considers how the MWDSC would be able to provide water to its member agencies during a catastrophic interruption in water supplies. Therefore, cumulative impacts related to water demand would be less than significant, and no mitigation is required.

Solid Waste. The geographic area for the cumulative analysis of impacts to solid waste disposal capacity is the County of Los Angeles. Development associated with the proposed project and other past, present, and reasonably foreseeable projects within the County would contribute to an increase in demand for landfill capacity and solid waste services for the County. As stated previously, the SERRF, a refuse-to-energy transformation facility, serves the planning area and does not have a scheduled closure date. Remaining capacity and estimated closure dates for the SERRF are not determined because the facility is a transformation facility that converts solid waste to energy and ash. It is expected that the SERRF will continue to operate at its current permitted daily capacity through 2027. The SERRF currently does not exceed its daily maximum permitted disposal capacity. Solid waste considered unprocessable by SERRF would be taken to landfills in Orange, San Bernardino, and Riverside Counties. There is currently sufficient permitted capacity within the LACSD system serving Los Angeles County to provide adequate future capacity for the County's solid waste needs.

The City currently complies with all federal, State, and local statutes and regulations related to solid waste. Therefore, the proposed project would not have a significant project-specific or cumulative impact on waste disposal capacity at LACSD facilities.

4.9.11 Level of Significance after Mitigation

No mitigation measures are required and all potential impacts related to public services would remain less than significant. Therefore, the project would have no significant and unavoidable adverse impacts related to utilities.

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5.0 ALTERNATIVES

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives" (*CEQA Guidelines*, Section 15126.6). This chapter identifies potential alternatives to the proposed General Plan Land Use and Urban Design Elements Project (proposed project) and evaluates them as required by CEQA.

Key provisions of the *CEQA Guidelines* on alternatives (Section 15126.6[b] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR:

- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly (15126.6[b]).
- The specific alternative of "no project" shall also be evaluated along with its impact (15126.6[e][1]). The "no project" analysis shall discuss the existing conditions at the time the Notice of Preparation is published and at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (15126.6[e][2]).
- The range of alternatives required in an EIR is governed by the "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making. Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent) (15126.6[f]).
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (15126.6[f][2][A]).
- If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion and should include the reasons in the EIR. For example, in some cases

there may be no feasible alternative locations for a geothermal plant or mining project, which must be in close proximity to natural resources at a given location (15126.6[f][2][B]).

- An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (15126.6[f][3]).

5.2 SELECTION OF ALTERNATIVES

Section 21100 of the Public Resources Code and Section 15126.6 of the *CEQA Guidelines* require an EIR to identify and discuss a No Project Alternative and a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the proposed project and that would avoid or substantially lessen any of the significant environmental impacts. Based on the criteria listed above, the No Project Alternative, Areas of Change Reduction/Reduced Project Alternative, Reduced VMT Alternative/Transit-Oriented Alternative, and Neighborhood-Serving Centers and Corridors Commercial-Only Alternative have been selected to avoid or substantially lessen the significant impacts of the proposed project. Therefore, the alternatives considered in this EIR include the following:

- **Alternative 1: No Project.** This Alternative would involve no amendments to the City's General Plan, no adoption of PlaceTypes, and no changes to the existing land use designations in the City. The existing General Plan Land Use Element (LUE) and the Scenic Routes Element (SRE) would continue to determine land uses and design principles that guide future development in the City.
- **Alternative 2: Areas of Change Reduction/Reduced Project Alternative**. This Alternative would include the same PlaceTypes as the proposed project, but would reduce the intensity of land uses in three areas: Mid-City, Downtown, and Traffic Circle. Reductions in land use intensity in these areas would be accomplished through caps on building heights in the Downtown area, reducing the amount of in-fill and regional serving uses in the Mid-City area, and reducing or eliminating new commercial and in-fill development in the Traffic Circle area.
- **Alternative 3: Reduced VMT Alternative/Transit-Oriented Alternative.** The Reduced Vehicle Miles Travelled (VMT) Alternative would implement only the Transit-Oriented Development PlaceType/Overlay Zone. This Alternative would recognize the objectives of Senate Bill 743 by reducing VMT per capita in order to improve the efficiency of the transportation network. This alternative would be an amendment to the City's existing LUE and would be implemented as an Overlay Zone intended to focus on development around existing and/or proposed transit to reduce the frequency and length of trips. Alternative 3 would not include a new UDE, but would amend the SRE to include design guidelines within the Transit-Oriented PlaceType/Overlay Zone.
- **Alternative 4: Neighborhood-Serving Centers and Corridors Commercial-Only Alternative.** The Neighborhood-Serving Centers and Corridors Commercial-Only Alternative would include the same PlaceTypes as the proposed project, but would eliminate the residential component from the Neighborhood-Serving Centers and Corridors PlaceType. The overall 2040 Build Out square footage would remain consistent with the proposed project.

Table 5.A provides a summary of the relative impacts and feasibility of each Alternative. A complete discussion of each Alternative is provided below.

Table 5.A: Summary of Project Alternatives

Alternative	Description	Basis for Selection and Summary Analysis
Proposed Project	• Approximately 50 square miles planning area • New Land Use Element (LUE) • New Urban Design Element (UDE) • 14 PlaceTypes • 2040 General Plan Build Out: ○ Population increase of 51,230 persons ○ Employment increase of 28,511 jobs ○ Net increase of 11,744 units ■ 664 single family units ■ 11,081 multi-family units ○ Increase of 15,093,000 square feet (sf) of non-residential uses	• Meets all project objectives • Requires General Plan Update/ Amendment, along with future Local Coastal Plan Amendment and Zoning Amendment for consistency with existing planning and policy documents • Refer to Chapters 3.0 and 4.0 of this Draft EIR
Alternative 1: No Project	• Continuation of the City's existing General Plan LUE and SRE	• Required by CEQA • Does not require General Plan Update/Amendment, Local Coastal Plan Amendment, or Zoning Amendment • Inconsistent with a majority of the Project Objectives
Alternative 2: Areas of Change Reduction/Reduced Project Alternative	• Approximately 50 square miles planning area • New Land Use Element • New Urban Design Element • 14 PlaceTypes • Caps on Building Heights in Downtown Area • Reduced infill and regional-serving uses in Mid-City Area • Reduced infill development in Traffic Circle Area	• Requires General Plan Update/ Amendment, along with future Local Coastal Plan Amendment and Zoning Amendment for consistency with existing planning and policy documents • Reduced air quality, greenhouse gas (GHG), and traffic impacts due to reductions in land use intensity where largest increases in traffic volumes were to occur under the proposed project • Results in fewer daily traffic trips than the proposed project • Consistent with some of the project objectives

Table 5.A: Summary of Project Alternatives

Alternative	Description	Basis for Selection and Summary Analysis
Alternative 3: Reduced VMT Alternative/Transit-Oriented Alternative	• Approximately 50 square miles planning area • Update to existing Land Use Element • Update to existing Scenic Routes Element • 2 New PlaceTypes/Overlay Zones (Transit Oriented Development - Low and Moderate)	• Requires General Plan Update/ Amendment and future Local Coastal Plan Amendment (potential) and Zoning Amendment for consistency with existing planning and policy documents • Reduced air quality, GHG, and traffic impacts due to focused development around transit • Consistent with some of the project objectives
Alternative 4: Neighborhood-Serving Centers and Corridors Commercial-Only Alternative	• Approximately 50 square miles planning area • New Land Use Element • New Urban Design Element • 14 PlaceTypes • No residential uses permitted in the Neighborhood-Serving Centers and Corridors PlaceTypes (Low and Moderate)	• Requires General Plan Update/ Amendment, and future Local Coastal Plan Amendment and Zoning Amendment for consistency with existing planning and policy documents • Reduced air quality, GHG, and traffic impacts due to reductions in vehicle trips in the Neighborhood-Serving Centers and Corridors PlaceTypes. • Consistent with some of the project objectives

Source: LSA Associates, Inc. (February 2016).

For each Alternative, the analysis provides the following:

- Description of the Alternative;
- Environmental analysis of the potential impacts of the Alternative and the significance of those impacts (per the *CEQA Guidelines,* significant effects of an Alternative shall be discussed but in less detail than those of the proposed project);
- Overview of the potential impacts of the Alternative and the significance of those impacts; and
- Summary comparison of the Alternative relative to the proposed project's impacts, specifically addressing whether the Alternative would meet the project's objectives; whether it would eliminate or reduce impacts compared to the project; and its other comparative merits.

5.3 ALTERNATIVES INITIALLY CONSIDERED BUT REJECTED FROM FURTHER CONSIDERATION

The following is a discussion of the development alternatives considered during the environmental review process and the reasons they were not selected for detailed analysis in this Draft EIR.

5.3.1 Reducing SEADIP

This Alternative would include the same 14 PlaceTypes included in the proposed project, but would reduce the intensity of land uses in the Southeast Area Development and Improvement Plan (SEADIP) area. The SEADIP area would experience the greatest traffic volume increases under the proposed project. Current planning efforts to update the SEADIP, which covers 1,500-acres of southeast Long Beach, are reflected in the proposed project. The proposed project analyzed in this Draft EIR maintains consistency with the current SEADIP goals, policies, and development standards in the planning area. Therefore, any reductions to land use intensities in this planning area would potentially conflict with goals and policies established in this plan and current efforts to update the Local Coastal Plan. Therefore, this alternative was eliminated from further consideration.

5.3.2 Alternative Sites Considered

CEQA requires that the discussion of alternatives focuses on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant impacts of the project. The key question and first step in the analysis is whether any of the significant impacts of the project would be avoided or substantially lessened by relocating the project. Only developments or locations that would avoid or substantially lessen any of the significant impacts of the project need be considered for inclusion in the EIR (*CEQA Guidelines*, Section 15126.6[f][2][A]). If it is determined that no feasible alternative locations exist, the EIR must disclose the reasons for this conclusion (*CEQA Guidelines*, Section 15126.6[f][2][B]). The proposed project is the implementation of an updated General Plan LUE and a new General Plan UDE for the City. The proposed project encompasses the entire boundaries of the City. Because the City does not have jurisdiction over areas outside of its boundaries and cannot impose General Plan policies on such areas, no alternative sites were considered.

5.4 PROPOSED PROJECT

5.4.1 Project Characteristics

As described earlier in Chapter 3.0, Project Description, the proposed project would result in an update to the City's existing General Plan. The proposed project includes the approval of both the General Plan LUE and UDE, which would replace the existing LUE and SRE.

The proposed LUE would replace the existing 1989 General Plan LUE. The proposed updated LUE would introduce the concept of "PlaceTypes," which would replace the current approach in the existing LUE of segregating property within the City through traditional land uses designations and zoning classifications. The updated LUE would establish 14 primary PlaceTypes that would divide the City into distinct neighborhoods, thus allowing for greater flexibility and a mix of compatible land

uses within these areas (refer to Figure 3.3, Proposed PlaceTypes). Each PlaceType would be defined by unique land use, form, and character-defining goals, policies, and implementation strategies tailored specifically to the particular application of that PlaceType within the City.

The existing General Plan does not currently include an UDE. The UDE would define the physical aspects of the urban environment. Specifically, the UDE aims to further enhance the City's PlaceTypes established in the LUE by creating great places; improving the urban fabric, and public spaces; and defining edges, thoroughfares, and corridors (see Figures 3.6.a and 3.6.b, Urban Design Principles in Commercial and Residential Areas, respectively). In addition, the City intends to utilize the UDE to foster healthy, sustainable neighborhoods; promote compact and connected development; minimize and fill in gaps in the urban fabric of existing neighborhoods; improve the cohesion between buildings, roadways, public spaces, and people; and improve the economic vitality of the City.

As illustrated in Chapter 3.0, Project Description, and Table 3.B, Project Buildout Summary, compared to existing conditions, the proposed LUE would allow for a population increase of 51,230 persons, an employment increase of 28,511, and a net increase of 11,744 units by the year 2040**.** More specifically, as illustrated by Tables 3.B through 3.D, the proposed project would allow for an increase in 11,744 dwelling units (664 and 11,081 single family and multi-family, respectively), an increase of 15,093,000 square feet (sf) of non-residential uses, and an increase in population and employment by 51,230 people and 28,511 jobs, respectively. These projected increases in housing units, population, and employment are consistent with 2016-2040 growth projections developed by the Southern California Association of Governments (SCAG) for the region.

5.4.2 Project Objectives

Each Alternative is analyzed to determine whether it achieves the basic objectives of the proposed project. As stated in Section 3.0, Project Description, the City has established the following intended specific objectives for the General Plan updated LUE and new UDE that would serve to aid decision-makers in their review of the proposed project and its associated environmental impacts:

1. Promote livability, including environmental quality, community health and safety, the quality of the built environment, and economic vitality.
2. Accommodate strategic growth in the Downtown area, around regional-serving facilities, along major corridors, and in transit-oriented development areas; create and preserve open space; accommodate economic development by converting industrial areas to neo-industrial uses in appropriate locations, promote regional-serving uses, convert industrial uses to commercial uses in locations more suitable for commercial character, and revitalize the Waterfront areas.
3. Implement sustainable planning and development practices by creating compact new developments and walkable neighborhoods to minimize the City's contribution to greenhouse gas emissions (GHGs) and energy usage.
4. Create job growth allowing for new businesses while also maintaining and preserving existing employment opportunities at the City's regional facilities and employment centers. Promote increased employment opportunities for Long Beach residents at differing levels of educational and skill attainment.

5. Promote changes in land use and development that reflect changes in the regional economy. Promote land uses that transform now-vacant former employment centers into new sources of employment.
6. Meet the City's housing needs by diversifying housing opportunities through the provision of a variety of housing types and the provision of market-rate and affordable housing units.
7. Provide high-quality housing in a variety of forms, sizes, and densities to serve the diverse population of the City.
8. Preserve low-density neighborhoods while improving pedestrian, bicycle, and transit access in these areas.
9. Ensure fair and equitable land use by making planning decisions that would ensure the fair and equitable distribution of services, amenities, and investments throughout the City.
10. Provide reliable public facilities and infrastructure by expanding and maintaining the current infrastructure to serve new and existing developments in the City.
11. Increase access to green and open space through the creation of urban open spaces and greenscapes and providing for clean beaches, waterways, preserves, and parklands.
12. Restore and reconnect with local natural reserves through the utilization of clean energy, best management practices (BMPs), and current technologies.
13. Create "Great Places" places by improving the connectivity, the visual appearance of and development of public spaces; promote sustainable design practices; encourage design techniques that foster economic development; preserve historic districts and the unique character of each neighborhood; provide for public art; and expand the unified sign program to increase wayfinding within neighborhoods and PlaceTypes.
14. Improve the urban fabric by creating complete neighborhoods and community blocks, properly place and design new development to prevent visual and land use conflicts; promote compact urban and infill development, clearly define boundaries between natural and urbanized areas, preserve iconic buildings; and provide pedestrian furniture and wide sidewalks to create walkable blocks.
15. Preserve the City's natural features, open space, and parks throughout the City, while also providing new public spaces throughout the community, parks, and plazas at infill sites, and parklets along sidewalks.
16. Encourage building form and design to improve the interface between buildings and streets; develop areas along public sidewalks that promote streets as "public rooms;" design parking lots and access points to be pedestrian-friendly; provide buffers along streetscapes to buffer parking areas and promote walkability; provide bicycle infrastructure; establish safe transit infrastructure; and design streetscapes utilizing sustainable streetscape strategies.
17. Promote high-quality design of the built environment. Enhance visual interest, improve functionality and inspire pride through thoughtful design, high-quality materials and a diversity of architectural styles throughout neighborhoods and the entire City.

5.4.3 Significant Unavoidable Impacts of the Proposed Project

The analysis in the Initial Study (IS) (Appendix A of this Draft EIR) for the proposed project determined that the proposed project would result in either no impacts or less than significant impacts related to the following topics: agricultural resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, and recreation. As described in Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures, the proposed project would result in less than significant impacts related to aesthetics, land use, population and housing, noise, public services and utilities. The proposed project would result in significant unavoidable impacts related to air quality (long-term operational impacts and impacts to sensitive receptors), GHG emissions (GHG emissions would exceed the State Service Population threshold of 3.4 metric tons [MT] carbon dioxide equivalent [CO_2e] per year), and transportation/traffic (significant and adverse impacts at 44 intersections).

For the purpose of this analysis, it is assumed that all of the alternatives would comply with applicable federal, State, and local regulations, policies, and ordinances. It is also assumed that all mitigation measures required for project implementation would apply to the project alternatives and similar reductions in impacts would be achieved through such mitigation. Therefore, the following discussion focuses on the ability of the alternatives to further reduce project impacts and the potential impacts of the project alternatives related to these issues.

5.5 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

5.5.1 Description

Consistent with Section 15126.6 of the *CEQA Guidelines*, the No Project Alternative assumes the existing land uses and condition of the planning area at the time the Notice of Preparation (NOP) was published (May 2015) would continue to exist without changes. The setting of the planning area at the time the NOP was published is described throughout Chapter 4.0 of this EIR with respect to individual environmental issues, and forms the baseline of the impact assessment of the proposed project. The No Project Alternative anticipates that the adopted General Plan LUE and SRE would continue to determine land use and scenic vistas within the City without any improvements or changes to land use designations. This alternative assumes that future development would continue to occur as currently allowed under the General Plan LUE.

As previously stated, the existing 1989 LUE contains a General Plan Land Use Map and a discussion of the intended and allowable uses within each land use type. The existing LUE determines land use on a parcel-by-parcel basis. In addition to a description and map of land use categories, the existing 1989 LUE establishes goals and objectives aimed at guiding the orderly pattern of development in the City.

The existing General Plan does not currently include an UDE. However, the existing SRE designates roadways within the City for which view protection should be considered and also establishes varying design standards to ensure the continued maintenance of the aesthetic character of these roadways.

The No Project Alternative would allow for the existing LUE and SRE to continue to function as they currently do into the foreseeable future. There would be no improvements implemented in the planning area. In addition, the proposed General Plan Update/Amendment, Local Coastal Plan

Amendment, and Zoning Amendment allowing the update of applicable planning and policy documents would not occur. The No Project Alternative would allow the existing General Plan LUE and SRE to remain unchanged.

5.5.2 Environmental Analysis

The planning area includes the entire 50 square miles within the limits of the City of Long Beach. The City is currently developed with urban and suburban uses. The City is bordered on the west by the Cities of Carson and Los Angeles (including Wilmington and the Port of Los Angeles); on the north by the Cities of Compton, Paramount, and Bellflower; and on the east by the Cities of Lakewood, Hawaiian Gardens, Cypress, Los Alamitos, and Seal Beach. The City is also bordered by the unincorporated communities of Rancho Dominguez to the north and Rossmoor to the east.

The following impact determinations are made after the consideration of General Plan build out consistent with the existing adopted LUE and SRE. Under the No Project Alternative, the visual setting of the planning area would remain as guided by the development standards currently adopted under the existing LUE, SRE, Municipal Code, and/or Specific Plans. No additional air pollutant emissions or greenhouse gas (GHG) emissions would be generated by new vehicle trips or short-term construction beyond development consistent with the existing General Plan. The existing land uses would continue to be consistent with the City's General Plan and zoning documents, and no General Plan Update/Amendment, Local Coastal Plan Amendment, or Zoning Amendment would be required. No additional short-term construction noise impacts or long-term operational noise impacts would occur to the surrounding area other than those effects already considered under the adopted General Plan. No additional population over the adopted projections for the General Plan would result from the continued existing uses and conditions in the planning area would occur. No additional demands for fire or police services, other than those effects already considered to occur under the adopted General Plan, would occur, and no additional or increased demand for recreational facilities beyond those of the adopted General Plan would result for the No Project Alternative. Further, no additional vehicle trips would be generated by construction or operations in the planning area, no new sources of solid waste would be created, and no increase in demand for electricity or natural gas would occur beyond demand accounted for under projects consistent with the adopted General Plan.

5.5.3 Overview of Potential Impact/Comparison to Proposed Project

The No Project Alternative would not require a General Plan Update/Amendment, Local Coastal Plan Amendment, or Rezone Amendment. No change to the adopted land use designations would occur and therefore no new environmental impacts would occur. Although overall impacts for the No Project Alternative would be similar to the Proposed Project, significant traffic impacts would be reduced at 44 intersections because the potential for increased population and employment would not occur as it would with the proposed PlaceTypes, which have the potential to increase intensity in some locations. In addition, under the No Project scenario, there would be no significant and adverse construction air quality emissions, and significant and adverse GHG emissions related to Service Population thresholds. Overall, environmental impacts would be reduced under this alternative.

5.5.4 Project Objectives

The No Project Alternative would not achieve any of the 17 project objectives. Without the proposed project, future development in the planning area would not be required to be consistent with the proposed LUE and UDE. The No Project Alternative would not help the City achieve its goal of creating great places through the establishment of new PlaceTypes and urban design principles not currently provided in the City's General Plan. Furthermore, this Alternative would not include the provision for new housing and employment opportunities to accommodate future growth projections for the City, nor would it expand the economic base of the City.

5.6 ALTERNATIVE 2: AREAS OF CHANGE REDUCTION/REDUCED PROJECT ALTERNATIVE

5.6.1 Description

This Alternative assumes the planning area would be subject to the LUE and UDE goals, strategies, and policies similar to those included under the proposed project, but with adjustments to the proposed PlaceType intensities. This Alternative would decrease overall intensities by placing caps on building heights in the Downtown area, reducing infill and regional serving uses in the Mid-City Area, and reducing or eliminating new commercial and in-fill development in the Traffic Circle Area. For purposes of the Alternatives analysis, the following reductions in PlaceTypes have been made for Alternative 2:

- 10% reduction for Multi-Family Moderate, Neighborhood Serving Centers and Corridors – Moderate, and Community Commercial
- 33% reduction for Downtown Residential, Commercial and Office
- 10% reduction for Regional Serving Facility Commercial and Office

The eliminated square footage from these three areas would not be redistributed to other areas in the City. Alternative 2 would require a General Plan Update/Amendment, and a future Local Coastal Plan Amendment and Rezone Amendment, similar to the proposed project. Table 5.B summarizes the uses assumed in the planning area under this Alternative.

5.6.2 Environmental Analysis

Aesthetics. Similar to the proposed project, Alternative 2 would have less than significant impacts related to scenic vistas, scenic resources, light, glare, and the existing visual character of the planning area and its surroundings. As previously stated, Alternative 2 would reduce building intensity in the Downtown, Mid-City, and Traffic Circle areas through caps on building heights and a reduction of new development and uses in these three areas. Unlike the proposed project, buildings proposed as part of Alternative 2 would be constructed at a reduced heights in the Downtown Area. Furthermore, this Alternative would, like the proposed project, be required to comply with the City's Municipal Code, which includes lighting and landscaping standards. Overall, the building square footage in the Downtown, Mid-City, and Traffic Circle areas site would be less than that of the proposed project due to reductions in the intensity of these uses in these three areas. Therefore, while this Alternative

Table 5.B: Alternative 2: Square Footage General Plan Buildout

	Residential Units			Non-Residential Building Square Footage				
PlaceTypes	**Single Family**	**Multi-Family**	**Total**	**Commercial**	**Office**	**Industrial**	**Public Facilities/ Institutional**	**Total**
Open Space	-	-	-	782,200	29,300	144,000	4,325,400	5,280,900
Neighborhood	59,898	50,936	110,834	5,388,800	902,900	407,100	11,158,100	17,856,900
Multi-Family – Low	719	7,099	7,818	60,300	2,800	-	99,200	162,300
Multi-Family – Moderate	813	11,827	12,640	-	-	-	-	-
Neighborhood Serving Centers and Corridors – Low	836	4,736	5,572	2,413,300	198,400	199,600	175,300	2,986,600
Neighborhood Serving Centers and Corridors – Moderate	711	9,540	10,251	2,313,915	275,595	378,955	120,000	3,088,465
Community Commercial	113	3,019	3,132	5,360,900	427,000	1,702,400	229,100	7,719,400
Transit-Oriented Development - Low	321	2,800	3,121	1,184,840	226,860	9,500	283,200	1,704,400
Transit-Oriented Development - Moderate	401	1,825	2,226	993,500	64,800	8,800	212,900	1,280,000
Neo-Industrial	54	1,406	1,460	364,700	14,200	1,575,200	17,700	1,971,800
Industrial	145	846	991	291,200	325,600	4,789,700	143,700	5,550,200
Downtown	355	8, 077	8,432	1,634,398	3,058,148	59,697	729,000	5,481,243
Waterfront	7	3,126	3,133	2,125,200	898,000	-	605,700	3,628,900
Regional Serving Facility	6	1,104	1,110	552,615	970,140	15,148,510	6,336,500	23,007,765
Proposed Project 2040 Total	**64,598**	**110,940**	**175,538**	**24,484,100**	**8,977,500**	**25,240,600**	**24,435,800**	**83,138,000**
Alternative 2 2040 Total	**64,379**	**106,341**	**170,720**	**23,465,868**	**7,393,743**	**24,423,462**	**24,435,800**	**79,718,873**
Δ	**-219**	**-4,599**	**-4,818**	**-1,018,232**	**-1,583,757**	**-817,138**	**0**	**-3,419,127**

Source: LSA Associates, Inc. (February 2016).

would result in a less dense and smaller project, the overall visual changes would be reduced most significantly in the Downtown area, but also reduced visual changes in the Mid-City and Traffic Circle areas. Therefore, the overall visual impacts of Alternative 2 would be less than significant and less than those of the proposed project.

Air Quality. Because Alternative 2 includes all PlaceTypes with a total 2040 buildout of 170,720 residential units and 79,718,873 sf of non-residential uses it would, similar to the proposed project, have significant adverse impacts related to operational air quality. However, potential operational emissions associated with Alternative 2 would be less than the Proposed Project because this Alternative reduces the potential square footage of building through reductions in land use intensities in the Downtown, Mid-City, and Traffic Circle areas, also resulting in reduced vehicular trips. Similarly, like the Proposed Project, Alternative 2 could exceed significance thresholds for criteria pollutants during construction; however, with the implementation of mitigation and standard South Coast Air Quality Management District (SCAQMD) measures, such construction impacts would be less than significant. Air quality impacts would be incrementally reduced during construction when compared to the project due to the reduced amount of building construction. Alternative 2 could also result in significant adverse impacts related to the exposure of sensitive receptors to substantial concentrations of criteria air pollutants and toxic air contaminants, as well as substantial pollutant concentrations, even with mitigation incorporated, similar to the Proposed Project. Overall, there would be fewer air quality emissions for Alternative 2 as compared to the proposed project, but impacts would remain significant and adverse.

Greenhouse Gas Emissions. Because Alternative 2 includes all PlaceTypes with a total 2040 buildout of 170,720 residential units and 79,718,873 sf of non-residential uses it would, similar to the proposed project, have significant impacts related to GHG emissions and global climate change as GHG emissions would exceed the Service Population threshold of 3.4 MT CO_2e per year by 2.5 MT CO_2e per year (for a total of 5.9 MT CO_2e per year). Under this Alternative and the proposed project, future development would be designed to meet and exceed all Title 24 standards, which would reduce energy consumption. Overall, GHG emissions would be incrementally less during construction when compared to the proposed project due to the reductions in land use intensities in the Downtown, Mid-City, and Traffic Circle areas. Specifically, GHG emissions would be lower due to the reduced amount of building materials that would need to be produced and transported to the planning area to complete the construction. Operational emissions would also be reduced with the reduction in land uses in the Downtown, Mid-City, and Traffic Circle areas and the associated reduction of vehicle trips and lower energy demand. Overall, GHG emissions would be reduced for Alternative 2 compared to the proposed project, but would remain significant and adverse.

Land Use. Similar to the proposed project, Alternative 2 would have less than significant impacts related to land use and planning. Under this Alternative, as well as the proposed project, there would be no impacts related to the division of an existing community. Similar to the proposed project, the proposed LUE and UDE included as part of this Alternative would also require the approval of a General Plan Update/Amendment, and future Local Coastal Plan Amendment and Rezone Amendment. Although the proposed project would require a General Plan Update/Amendment, Local Coastal Plan Amendment, and Rezone Amendment, similar to the proposed project, Alternative 2

would be consistent with the policies contained in the City's General Plan, and the SCAG Regional Comprehensive Plan/Sustainable Communities Strategy (RTP/SCS). Specifically, Alternative 2 would be consistent with the RTP/SCS goal to encourage land use and growth patterns that facilitate transit and non-motorized travel. Therefore, impacts related to land use for Alternative 2 are considered to be similar to those associated with the proposed project.

Noise. Similar to the proposed project, Alternative 2 would have less than significant impacts related to noise. Construction activity associated with Alternative 2 would be incrementally less in the Downtown, Mid-City, and Traffic Circle areas, due to the reduction in land use intensities and potential amount of construction in these three areas, but would generally result in similar noise and vibration levels since the construction and excavation areas, methods, and equipment would be similar. Without mitigation, short-term construction noise generated during excavation, grading, and building construction would be potentially significant under both the proposed project and Alternative 2. With implementation of mitigation, both the proposed project and Alternative 2 would reduce potentially significant construction impacts to a less than significant level. Alternative 2 would result in fewer daily vehicle trips than the proposed project primarily due to the reduction in land use intensities in the Downtown, Mid-City, and Traffic Circle areas, and would, therefore, result in lower mobile-source noise levels in these areas. Because there would be incrementally less development constructed with this Alternative, overall impacts related to noise for Alternative 2 are considered to be slightly less than those associated with the proposed project.

Population and Housing. Similar to the proposed project, Alternative 2 would have a less than significant impact on population and housing. Alternative 2 would reduce the square footage of potential development in the Downtown, Mid-City, and Traffic Circle areas as compared to the proposed project. This would result in less residential development and population growth. In addition, the commercial uses would be reduced under Alternative 2 and the employment opportunities associated with those uses would be eliminated. Because future housing and employment would be reduced under this alternative, the impacts would be less than those associated with the proposed project.

Public Services. Similar to the proposed project, Alternative 2 would have a less than significant impact on public services. Public services include fire protection, police protection, public schools, and public libraries. Because the amount of development would be reduced for the PlaceType intensities in the Downtown, Mid City and Traffic Circle Areas under Alternative 2, the demands for public services would be reduced compared to the proposed project. Overall, impacts related to public services under Alternative 2 are considered incrementally less than under the proposed project.

Transportation/Traffic. Alternative 2 would generate fewer trips than the proposed project due to the reduction in land use intensities in the Downtown, Mid-City, and Traffic Circle Areas, but would not greatly reduce the number of intersections anticipated to operate in excess of the currently established level of service criteria. Alternative 2 would result in approximately 1,974,777 ADT trips, which would be 6,475 fewer total ADT trips compared to the proposed project (1,981,252 ADT trips). Compared to the proposed project, Alternative 2 would result in a significant impact on

transportation/traffic at one fewer intersection (Pacific Avenue/Ocean Boulevard). Therefore, because there would still be significant and adverse impacts at 43 intersections, long-term operational traffic impacts would still be significant and adverse, similar to the proposed project. Furthermore, construction trips under Alternative 2 would also be incrementally reduced because there would be less construction equipment and fewer workers required for future projects in the Downtown, Mid-City, and Traffic Circle areas due to the reduction in intensity in these PlaceTypes. Therefore, impacts related to transportation/traffic under Alternative 2 are considered less than under the proposed project.

Utilities. Similar to the proposed project, Alternative 2 would have a less than significant impact on utilities. Utilities include solid waste, public transportation, water, wastewater, electricity, and natural gas. Because the amount of development would be reduced for the PlaceType intensities in the Downtown, Mid City and Traffic Circle Areas under Alternative 2, the demands for utilities would be reduced compared to the proposed project. Overall, impacts related to utilities under Alternative 2 are considered incrementally less than under the proposed project.

5.6.3 Overview of Potential Impacts/Comparison to Proposed Project

Similar to the proposed project, Alternative 2 would result in significant unavoidable impacts related to air quality, GHG emissions, and transportation/traffic. Due to the reduction in intensity of land uses in the Downtown, Mid-City, and Traffic Circle areas under Alternative 2, overall impacts would be less than with the proposed project.

5.6.4 Attainment of Project Objectives

Similar to the proposed project, Alternative 2 would implement 14 new PlaceTypes and design standards included in the LUE and UDE. However, this alternative would not achieve certain project objectives to the same extent as the proposed project due to land use reductions in three areas.

Alternative 2 would promote livability, environmental quality, community health and safety, the quality of the built environment, and economic vitality (Objective 1) through implementation of the LUE and UDE. While Alternative 2 would include many of the features of the proposed project, this Alternative's consistency with the overall LUE goals (Objective 2), job growth (Objective 4), and land use changes that coincide with the regional economy (Objective 5) would be achieved at a lesser extent due to the reduction in land use intensities in the Downtown, Mid City, and Traffic Circle Areas. In addition, Alternative 2 would include PlaceTypes that encourage sustainable development practices comprised of placemaking principles and design standards to create walkable and complete neighborhoods (Objectives 3, 13, 14, 16, and 17). This Alternative would achieve many of the project objectives related to the provision of diverse housing types, as well as preserving existing neighborhoods (Objectives 6, 7, and 8). The Open Space PlaceType under Alternative 2 would ensure access to natural and urban open spaces, as well their maintenance, restoration, and preservation. (Objectives 11, 12, and 15). Similar to the proposed project, the 14 PlaceTypes would be distributed across the planning areas to ensure planning decisions are equitable and City investments are distributed in a manner to serve both new and existing developments in the City (Objectives 9 and

10). This Alternative would meet many of the project objectives but not to the same degree as the proposed project.

5.7 ALTERNATIVE 3: REDUCED VMT ALTERNATIVE/TRANSIT-ORIENTED ALTERNATIVE

5.7.1 Description

Alternative 3 would implement only the Low and Moderate Transit-Oriented Development PlaceTypes. This Alternative would recognize the objectives of Senate Bill 743 by reducing VMT per capita in order to improve the efficiency of the transportation network. Alternative 3 would be an amendment to the City's existing LUE and would be implemented as an Overlay Zone intended to focus development around existing and/or proposed transit to reduce the frequency and length of trips. Growth outside the proposed Transit-Oriented Development PlaceType/Overlay Zone would continue to be subject to the existing LUE. Alternative 3 would not include a new UDE, but rather would amend the SRE to include design guidelines within the Transit-Oriented PlaceType/Overlay Zone (including Low and Moderate areas). Therefore, this Alternative would eliminate the other 12 PlaceTypes proposed as part of the LUE. The Transit-Oriented Development PlaceType/Overlay Zone would occur in the same areas as the proposed project, along existing and/or planned transit corridors, in order to reduce the frequency and length of vehicle trips. The areas outside of the Transit-Oriented Development PlaceType/Overlay Zone would be subject to the existing LUE. Alternative 3 would require a General Plan Update/Amendment and Rezone Amendment in order to ensure consistency with other policy documents. A Local Coastal Plan Amendment would not be required because the Transit-Oriented Development PlaceType/Overlay Zone is not located within the Local Coastal Plan area. Table 5.C summarizes the uses assumed in the Transit-Oriented Development PlaceType/Overlay Zone planning area under this Alternative. Planning areas outside the Transit-Oriented Development PlaceType/Overlay Zone would be subject to the existing LUE and continue to grow as forecast and outlined in the General Plan. Only areas included in the Transit-Oriented Development PlaceType/Overlay Zone are included in Table 5.C to show the buildout of the new PlaceType/Overlay Zone under Alternative 3 as compared to the proposed project.

5.7.2 Environmental Analysis

Aesthetics. Similar to the proposed project, Alternative 3 would have less than significant impacts related to scenic vistas, scenic resources, light, glare, and the existing visual character of the planning area and its surroundings. As previously stated, Alternative 3 would limit development to areas with existing and/or proposed transit, including the Metro Blue Line stations along the Long Beach Boulevard corridor and Pacific Avenue. Buildings proposed as part of Alternative 3 would be constructed at a heights similar to the proposed project in the Transit-Oriented Development- Low and Moderate PlaceTypes. Furthermore, this Alternative would, like the proposed project, be required to comply with the City's Municipal Code, which includes the lighting and landscaping standards. This Alternative would not include the remaining 12 PlaceTypes included in the proposed project, and the overall changes in visual character would be limited to specific areas in the City. Therefore, the overall visual impacts of Alternative 3 would be less than significant and less than those of the proposed project.

Table 5.C: Alternative 3: Square Footage General Plan Buildout

	Residential Units			Non-Residential Building Square Footage				
PlaceTypes	**Single Family**	**Multi-Family**	**Total**	**Commercial**	**Office**	**Industrial**	**Public Facilities/ Institutional**	**Total**
Transit-Oriented Development - Low	321	2,800	3,121	1,247,200	238,800	10,000	283,200	1,779,200
Transit-Oriented Development - Moderate	401	1,825	2,226	993,500	64,800	8,800	212,900	1,280,000
Proposed Project 2040 Total	**64,598**	**110,940**	**175,538**	**24,484,100**	**8,977,500**	**25,240,600**	**24,435,800**	**83,138,000**
Alternative 3 2040 Total	**722**	**4,625**	**5,347**	**2,240,700**	**303,600**	**18,800**	**496,100**	**3,059,200**
Δ	**-63,876**	**-106,315**	**-170,191**	**-22,243,400**	**-8,673,900**	**-25,221,800**	**-23,939,700**	**-80,078,800**

Source: LSA Associates, Inc. (February 2016).

Air Quality. Construction and operational emissions associated with Alternative 3 would be reduced because this Alternative eliminates the remaining 12 PlaceTypes included in the proposed project. Air quality impacts would be substantially reduced during construction when compared to the project due to the reduced amount of building construction. Similar to the proposed project, Alternative 3 would not exceed significance thresholds for criteria pollutants with the implementation of mitigation and standard SCAQMD measures. Because the scale of operational activities have not been determined or estimated as this is a programmatic level General Plan analysis, and in order to present conservative assumptions, the air quality impact associated with the future operation of individual projects that may occur with implementation of the proposed project are assumed to be potentially significant. Operational impacts would be reduced compared to the proposed project with the reduced vehicle trips associated with focusing this PlaceType near transit. The transportation/traffic analysis for Alternative 3 includes consideration of the ambient growth that would occur outside the Transit-Oriented Development PlaceType/Overlay Zone. Alternative 3 would also reduce significant adverse impacts related to the exposure of sensitive receptors to substantial concentrations of criteria air pollutants and toxic air contaminants because of the overall reduction in construction and operational emissions associated with new development under this Alternative. Overall, there would be substantially fewer air quality emissions for Alternative 3 as compared to the proposed project because there are 170,191 fewer residential units and 80,078,800 less sf of non-residential uses as compared to the proposed project at 2040 buildout. However, because future projects cannot be modeled at this time, operational impacts under Alternative 3 would still be considered potentially significant and adverse.

Greenhouse Gas Emissions. While Alternative 3 would significantly reduce development as compared to the proposed project, Alternative 3 would result in significant impacts related to GHG emissions and global climate change as GHG emissions would exceed the Service Population threshold of 3.4 MT CO_2e per year by 2.1 MT CO_2e per year (for a total of 5.5 MT CO_2e per year**)**. Under this Alternative and the proposed project, future development would be designed to meet and exceed all Title 24 standards, which would reduce energy consumption. Overall, GHG emissions would be substantially reduced during construction when compared to the proposed project due to the focus of development only around transit. Specifically, GHG emissions would be lower due to the reduced amount of building materials that would need to be produced and transported to the planning area to complete the construction. Operational emissions would also be reduced with the reduction in VMT and the associated reduction of vehicle trips and lower energy demand. Overall, GHG emissions would be reduced for Alternative 3 compared to the proposed project. Because future development would be limited to the Transit-Oriented Development PlaceType/Overlay Zone, Alternative 3 would significantly reduce emissions as compared to the proposed project; however, impacts related to GHG emissions would continue to be significant and adverse under Alternative 3.

Land Use. Similar to the proposed project, Alternative 3 would have less than significant impacts related to land use and planning. Under this Alternative, as well as the proposed project, there would be no impacts related to the division of an existing community. The proposed Transit-Oriented Development PlaceType/Overlay Zone under Alternative 3 would be consistent with the existing surrounding land use pattern in the areas near existing and/or proposed transit. Similar to the proposed project, the proposed LUE and UDE included as part of this Alternative would also require the approval of a General Plan Update/Amendment and Rezone Amendment. A Local Coastal Plan

Amendment would only be required if the proposed Transit-Oriented Development PlaceType/ Overlay Zone would occur within the coastal zone subject to that plan. Similar to the proposed project, Alternative 3 would be consistent with the policies contained in the City's General Plan, the SCAG RTP/SCS. Specifically, Alternative 3 would be consistent with the RTP/SCS goal to encourage land use and growth patterns that facilitate transit and non-motorized travel. In addition, this Alternative would recognize the objective of Senate Bill 743, by reducing VMT per capita. Therefore, impacts related to land use for Alternative 3 are considered to be similar to those associated with the proposed project.

Noise. Similar to the proposed project, Alternative 3 would have less than significant impacts related to noise. Construction activity associated with Alternative 3 would be incrementally less due to the focused areas of development, but would generally result in similar noise and vibration levels since the construction and excavation areas, methods, and equipment would be similar. Without mitigation, short-term construction noise generated during excavation, grading, and building construction would be potentially significant under both the proposed project and Alternative 3. With implementation of mitigation, both the proposed project and Alternative 3 would reduce potentially significant construction impacts to a less than significant level. Alternative 3 would result in fewer daily vehicle trips than the proposed project primarily due to less overall development and the focused development around transit, and would, therefore, result in lower mobile-source noise levels. Because there would be incrementally less development constructed with this Alternative, overall impacts related to noise for Alternative 3 are considered to be less than those associated with the proposed project.

Population and Housing. Similar to the proposed project, Alternative 3 would have a less than significant impact on population and housing. Alternative 3 would reduce the number of residential units as compared to the proposed project. In addition, the commercial uses would be reduced under Alternative 3 and the employment opportunities associated with those uses would be eliminated. Development under this Alternative would be focused on existing and/or proposed transit areas. Therefore, the impacts under this Alternative related to population and housing would be less than those associated with the proposed project.

Public Services. Similar to the proposed project, Alternative 3 would have a less than significant impact on public services. Public services include fire protection, police protection, public schools, and public libraries. Because the amount of development in the planning area would be reduced by limiting the Transit-Oriented Development PlaceType/Overlay Zone to transit corridors, the demands for public services would be reduced as compared to the proposed project. Overall, impacts related to public services under Alternative 3 are considered less than the proposed project.

Transportation/Traffic. Alternative 3 would generate fewer trips than the proposed project due to the implementation of only the Transit-Oriented Development PlaceType/Overlay Zone. Alternative 3 would result in approximately 1,915,404 ADT trips, which would be 65,848 fewer total ADT trips compared to the proposed project (1,981,252 ADT trips). This reduction in ADT trips under Alternative 3 includes the ambient growth that would occur outside the Transit-Oriented

Development PlaceType/Overlay Zone. However, because traffic volume is anticipated to increase even under the No Project condition, Alternative 3 would not greatly reduce the number of intersections anticipated to operate in excess of the currently established level of service criteria. Compared to the proposed project, Alternative 3 would result in a significant impact on transportation/traffic at eight fewer intersections (Paramount Boulevard/South Street, Magnolia Avenue/Ocean Boulevard, Pacific Avenue/Ocean Boulevard, Atlantic Avenue/7th Street, Orange Avenue/Wardlow Road, Lakewood Boulevard/Spring Street, Pacific Coast Highway/7th Street, and Bellflower Boulevard/7th Street). Therefore, because there would still be significant and adverse impacts at 36 intersections, long-term operational traffic impacts would still be significant and adverse, similar to the proposed project.

Furthermore, construction trips under Alternative 3 would also be substantially less because there would be less construction equipment and fewer workers required for projects because future development would occur only in the Transit-Oriented Development PlaceType/Overlay Zone, and would not be distributed across the entire planning area. Therefore, while there could be significant impacts related to transportation/traffic under Alternative 3, overall impacts are considered to be slightly less than under the proposed project.

Utilities. Similar to the proposed project, Alternative 3 would have a less than significant impact on utilities. Utilities include solid waste, public transportation, water, wastewater, electricity, and natural gas. Because the amount of development in the planning area would be reduced by limiting the Transit-Oriented Development PlaceType/Overlay Zone to transit corridors, the demands for utilities would be reduced as compared to the proposed project. Overall, impacts related to utilities under Alternative 3 are considered less than the proposed project.

5.7.3 Overview of Potential Impacts/Comparison to Proposed Project

Similar to the proposed project, Alternative 3 would result in significant unavoidable air quality, GHG emissions, and transportation/traffic impacts. However, because this Alternative only proposes the Transit-Oriented Development PlaceType/Overlay Zone, development would be limited to specific transit corridors in the City, resulting in fewer significant adverse traffic impacts. Despite the substantially reduced scale of the project, Alternative 3 would continue to result in significant and adverse GHG emission impacts. The overall impacts for Alternative 3 would be less than with the proposed project due to the reduced amount of construction and development.

5.7.4 Attainment of Project Objectives

Alternative 3 would implement only one new PlaceType/Overlay Zone with two variations, the Transit-Oriented Development PlaceType- Low and Moderate, in selected areas of the City. Because this alternative would not include the remaining 12 PlaceTypes included in the proposed project, this alternative would not achieve many of the project objectives.

This Alternative's promotion of livability, environmental quality, community health and safety, the quality of the built environment, and economic vitality (Objective 1) would be limited to the transit areas near this PlaceType.

Alternative 3 would not include the PlaceTypes that include many of the features of the proposed project, and therefore this Alternative's consistency with the overall LUE goals (Objective 2), job growth (Objective 4), and land use changes that coincide with the regional economy (Objective 5) would be achieved at a lesser extent than the proposed project. Due to the urbanized nature of the select areas subject to the Transit-Oriented Development PlaceType/Overlay Zone, the restoration of natural reserves and the creation of "Great Places" would not be achieved under this Alternative (Objectives 12 and 13).

The Transit-Oriented Development PlaceType/Overlay Zone would directly encourage development near existing and/or proposed transit with the direct intent to create of compact development patterns and walkable neighborhoods, consistent with Objectives 3, 14, 16, and 17.

This Alternative would diversify housing options and provide both affordable and market-rate units in the City, but these improvements would be limited to areas near existing and/or proposed transit (Objectives 6 and 7). The Long Beach Boulevard corridor and associated Metro Blue Line stations are generally located in the central part of the City, and, therefore, only a limited portion of the City would be subject to this proposed PlaceType.

The Transit-Oriented Development PlaceType/Overlay Zone includes consideration of transitions between large and small scale developments to protect existing low-density neighborhoods (Objective 8). Parks are permitted within the Transit-Oriented Development PlaceType/Overlay Zone and would integrate accessible open spaces into the urban environment (Objectives 11 and 15). This PlaceType would be generally distributed along the Long Beach Boulevard corridor and future planning decisions would be made transparently to ensure City investments are distributed in an equitable manner (Objectives 9 and 10). This Alternative would meet some, not all of the project objectives, and not to the same degree as the proposed project.

5.8 ALTERNATIVE 4: NEIGHBORHOOD-SERVING CENTERS AND CORRIDORS COMMERCIAL-ONLY ALTERNATIVE

5.8.1 Description

This Alternative assumes the planning area would be developed according to the same PlaceTypes included under the proposed project, but would prohibit residential uses in the Neighborhood-Serving Centers and Corridors – Moderate and Low PlaceTypes. Although this Alternative would result in reduced development in the Neighborhood-Serving Centers and Corridors – Moderate and Low PlaceType due to a removal of residential uses, the non-residential square footage would remain the same in this PlaceType. Residential uses would remain permitted in the Founding and Contemporary Neighborhoods, Multi-Family Residential-Low and Moderate, Transit-Oriented Development-Low and Moderate, Neo-Industrial, and Downtown PlaceTypes. Table 5.D summarizes the uses assumed in the planning area under this Alternative.

Table 5.D: Alternative 4: Square Footage General Plan Buildout

	Residential Units			Non-Residential Building Square Footage				
PlaceTypes	**Single Family**	**Multi-Family**	**Total**	**Commercial**	**Office**	**Industrial**	**Public Facilities/ Institutional**	**Total**
Open Space	-	-	-	782,200	29,300	144,000	4,325,400	5,280,900
Neighborhood	59,898	50,936	110,834	5,388,800	902,900	407,100	11,158,100	17,856,900
Multi-Family – Low	719	7,099	7,818	60,300	2,800	-	99,200	162,300
Multi-Family – Moderate	856	12,449	13,305	-	-	-	-	-
Neighborhood Serving Centers and Corridors – Low	-	-	-	2,413,300	198,400	199,600	175,300	2,986,600
Neighborhood Serving Centers and Corridors – Moderate	-	-	-	2,435,700	290,100	368,900	120,000	3,214,700
Community Commercial	113	3,019	3,132	5,360,900	427,000	1,702,400	229,100	7,719,400
Transit-Oriented Development - Low	321	2,800	3,121	1,247,200	238,800	10,000	283,200	1,779,200
Transit-Oriented Development - Moderate	401	1,825	2,226	993,500	64,800	8,800	212,900	1,280,000
Neo-Industrial	54	1,406	1,460	364,700	14,200	1,575,200	17,700	1,971,800
Industrial	145	846	991	291,200	325,600	4,789,700	143,700	5,550,200
Downtown	530	12,055	12,585	2,439,400	4,564,400	89,100	729,000	7,821,900
Waterfront	7	3,126	3,133	2,125,200	898,000	-	605,700	3,628,900
Regional Serving Facility	6	1,104	1,110	581,700	1,021,200	15,945,800	6,336,500	23,885,200
Proposed Project 2040 Total	**64,598**	**110,940**	**175,538**	**24,484,100**	**8,977,500**	**25,240,600**	**24,435,800**	**83,138,000**
Alternative 4 2040 Total	**63,050**	**96,665**	**159,715**	**24,484,100**	**8,977,500**	**25,240,600**	**24,435,800**	**83,138,000**
Δ	**-1,548**	**-14,275**	**-15,823**	**0**	**0**	**0**	**0**	**0**

Source: LSA Associates, Inc. (February 2016).

5.8.2 Environmental Analysis

Aesthetics. Similar to the proposed project, Alternative 4 would have less than significant impacts related to scenic vistas, scenic resources, light, glare, and the existing visual character of the planning area and its surroundings. As previously stated, Alternative 4 would include the same 14 PlaceTypes as the proposed project, but would eliminate the potential for residential uses in the Neighborhood-Serving Centers and Corridors- Low and Moderate PlaceTypes. The total number of residential units would be 15,823 less than the proposed project. Therefore, the overall visual changes would be reduced as compared to the proposed project. However, this Alternative would, like the proposed project, be required to comply with the City's Municipal Code, which includes the lighting and landscaping standards. Therefore, the overall visual impacts of Alternative 4 would be less than significant and similar to those of the proposed project.

Air Quality. Similar to the proposed project, Alternative 4 would have less than significant construction-related air quality impacts with mitigation incorporated. Construction and operational emissions associated with Alternative 4 would be incrementally reduced because this Alternative eliminates 2,939 daily vehicle trips associated with the removal of residential uses in the Neighborhood-Serving Centers and Corridors- Low and Moderate PlaceTypes. Air quality impacts during construction would be incrementally reduced when compared to the project due to less building construction, but could still exceed significance thresholds for criteria pollutants and would require implementation of mitigation and standard SCAQMD measures to reduce impacts to a less than significant level. Alternative 4 would also reduce impacts related to the exposure of sensitive receptors to substantial concentrations of criteria air pollutants and toxic air contaminants because of the overall reduction in construction and operational emissions associated with new development under this Alternative, but impacts would remain significant and adverse even with mitigation incorporated. Operational impacts would be reduced compared to the proposed project with the reduction in vehicle trips in the Neighborhood-Serving Centers and Corridors- Low and Moderate PlaceTypes, resulting in 2,939 fewer total ADT as compared to the proposed project. Overall, there would be fewer air quality emissions for Alternative 4 compared to the proposed project, but long-term operational emissions would remain significant and adverse.

Greenhouse Gas Emissions. Similar to the proposed project, Alternative 4 would have significant impacts related to GHG emissions and global climate change, as GHG emissions would exceed the Service Population threshold of 3.4 MT CO_2e per year by 2.5 MT CO_2e per year (for a total of 5.9 MT CO_2e per year**)**. Similar to the proposed project, future developments under Alternative 4 would be designed to meet and exceed all Title 24 standards, which would reduce energy consumption. Overall, GHG emissions during construction would be incrementally reduced because fewer building materials would need to be produced and transported to the planning area to complete the construction. Operational emissions would also be reduced due to the reduction in the number of residential units and the reduction of vehicle trips (2,939 fewer total ADT) and lower energy demand associated with the Neighborhood-Serving Centers and Corridors- Low and Moderate PlaceTypes. Although GHG emissions would be reduced for Alternative 4 compared to the proposed project, GHG emissions would remain significant and adverse.

Land Use. Similar to the proposed project, Alternative 4 would have less than significant impacts related to land use and planning. Under this Alternative, as well as the proposed project, there would be no impacts related to the division of an existing community. The proposed PlaceTypes under Alternative 4 would be consistent with the existing surrounding land use pattern in the area. Similar to the proposed project, the proposed LUE and UDE included as part of this Alternative would also require the approval of a General Plan Update/Amendment, Local Coastal Plan Amendment, and Rezone Amendment. Similar to the proposed project, Alternative 4 would be consistent with the policies contained in the City's General Plan, the SCAG RTP/SCS. Therefore, impacts related to land use for Alternative 4 are considered to be similar to those associated with the proposed project.

Noise. Similar to the proposed project, Alternative 4 would have less than significant impacts related to noise. Construction activity associated with Alternative 4 would be incrementally reduced as compared to the proposed project due to the reduced amount of building square footage, but would generally result in similar noise and vibration levels since the construction and excavation areas, methods, and equipment would be similar. Without mitigation, short-term construction noise generated during excavation, grading, and building construction would be potentially significant under both the proposed project and Alternative 4. With implementation of mitigation, both the proposed project and Alternative 4 would reduce potentially significant construction impacts to a less than significant level. Alternative 4 would result in fewer daily vehicle trips than the proposed project primarily due to the elimination of residential uses in the Neighborhood-Serving Centers and Corridors- Low and Moderate PlaceTypes; and, therefore, result in lower mobile-source noise levels. Overall impacts related to noise for Alternative 4 are considered to be less than those associated with the proposed project.

Population and Housing. Similar to the proposed project, Alternative 4 would have a less than significant impact on population and housing. Alternative 4 would reduce the number of residential units by 15,823 as compared to the proposed project. The amount and square footage for commercial uses would remain the same under Alternative 4. Therefore, the employment opportunities associated with those uses would be similar to the proposed project. Therefore, the impacts under this Alternative related to population and housing would be similar to those associated with the proposed project.

Public Services. Similar to the proposed project, Alternative 4 would have a less than significant impact on public services. Public services include fire protection, police protection, public schools, and public libraries. Because the overall amount of development in the planning area would be reduced by 15,823 residential units in the proposed Neighborhood-Serving Centers and Corridors-Low and Moderate PlaceTypes, the demands for public services would be less than for the proposed project. Overall, the demand for services and the impacts related to public services under Alternative 4 are considered to be less than the proposed project.

Transportation/Traffic. Similar to the proposed project, Alternative 4 would have significant and unavoidable impacts on transportation/traffic. Construction trips under Alternative 4 would be reduced as compared to the proposed project because there would be less construction equipment and

workers required for projects in the planning area. Additionally, Alternative 4 would generate fewer operational trips for the Neighborhood-Serving Centers and Corridors- Low and Moderate PlaceTypes than the proposed project due to the elimination of residential uses in these PlaceTypes. Alternative 4 would result in approximately 1,978,313 ADT trips, which would be 2,939 fewer total ADT trips compared to the proposed project (1,981,252 ADT trips). It is anticipated that this alternative would not result in fewer intersections experiencing a significant impact on transportation/traffic. Therefore, because there would still be significant and adverse impacts at 44 intersections, long-term operational traffic impacts would still be significant and adverse, similar to the proposed project

Therefore, impacts related to transportation/traffic under Alternative 4 are similar to the proposed project, and overall traffic impacts throughout the planning area would remain significant and unavoidable.

Utilities. Similar to the proposed project, Alternative 4 would have a less than significant impact on utilities. Utilities include solid waste, public transportation, water, wastewater, electricity, and natural gas. Because the overall amount of development in the planning area would be reduced by 15,823 residential units in the proposed Neighborhood-Serving Centers and Corridors- Low and Moderate PlaceType, the demands for utilities would be less than for the proposed project. Overall, the demand for services and the impacts related to utilities under Alternative 4 are considered to be less than the proposed project.

5.8.3 Overview of Potential Impacts/Comparison to Proposed Project

Similar to the proposed project, Alternative 4 would result in significant unavoidable impacts related to air quality, GHG emissions, and traffic impacts. However, due to the elimination of residential uses from the Neighborhood-Serving Centers and Corridors PlaceType under Alternative 4, overall impacts to noise, public services, and utilities would be incrementally less than with the proposed project.

5.8.4 Attainment of Project Objectives

Similar to the proposed Project, Alternative 4 would include 14 PlaceTypes and design standards included in the LUE and UDE. However, because it would modify the allowed uses in one PlaceType, this alternative would achieve most of the Project objectives, but to a lesser extent than the proposed project.

Alternative 4 would include 14 PlaceTypes that and design standards to promote livability, environmental quality, community health and safety, the quality of the built environment, and economic vitality (Objective 1). While Alternative 4 would include many of the features of the proposed project, this Alternative's elimination of residential uses in the Neighborhood-Serving Centers and Corridors PlaceType would reduce the housing opportunities in the planning area and potential opportunities to offer mixed use housing within the Neighborhood-Serving Centers and Corridors PlaceType (Objectives 6 and 7).

While this Alternative would have reduced consistency with housing related objectives, when compared to the proposed project, Alternative 4 is consistent with a number of defined project

Objectives. Alternative 4 is consistent with eight Major Areas of Change (Objective 2), increased opportunities for job growth (Objective 4), and land use changes that coincide with the regional economy (Objective 5). In addition, Alternative 4 would include PlaceTypes that encourage sustainable development practices comprised of placemaking principles and design standards to create walkable and complete neighborhoods (Objectives 3, 13, 14, 16, and 17). This Alternative would not change the nature of housing opportunities in proposed low-density areas and/or existing neighborhoods (Objective 8). The Open Space PlaceType under Alternative 4 would ensure access to natural and urban open spaces, as well their maintenance, restoration, and preservation (Objectives 11, 12 and 15). Similar to the proposed project, the 14 PlaceTypes would be distributed across the planning areas to ensure planning decisions are equitable and City investments are distributed in a manner to serve both new and existing developments in the City (Objectives 9 and 10). This Alternative would meet many of the project objectives but not to the same degree as the proposed project.

5.9 IDENTIFICATION OF ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of an Environmentally Superior Alternative. *CEQA Guidelines* Section 15126.6(e)(2) states that if the No Project Alternative is the Environmentally Superior Alternative, then the EIR shall also identify an Environmentally Superior Alternative among the other alternatives. Table 5.E provides, in summary format, a comparison of the level of impacts for each Alternative to the proposed project.

The No Project/No Build Alternative has the least impact to the environment because it would not introduce PlaceTypes or urban design standards with the potential to increase land use intensities and/or building heights in the City. While the No Project Alternative would lessen or avoid the impacts of the proposed project, the beneficial impacts of the proposed project—including the provision of a mix of land uses and policies for better placemaking not currently provided in the City's General Plan—would not occur, and none of the project objectives would be met.

With the exception of the No Project Alternative, the Environmentally Superior Alternative would be Alternative 3: Reduced VMT Alternative/ Transit-Oriented Alternative. Overall, this Alternative would lessen significant environmental impacts more than the other alternatives, or result in impacts similar to those associated with the proposed project. Alternative 3 would achieve some of the project objectives—specifically it would directly encourage development near existing and/or proposed transit with the direct intent to create of compact development patterns and walkable neighborhoods, consistent with Objectives 3, 14, 16, and 17. However, this Alternative would not increase livability, economic vitality or health throughout the planning area as it would be concentrated along Downtown transit corridors. Alternative 3 would not include the PlaceTypes that include many of the features of the proposed project, and therefore this Alternative's consistency with the overall LUE goals (Objective 2), job growth (Objective 4), and land use changes that coincide with the regional economy (Objective 5) would not be achieved to the same degree as the proposed project. In addition, the reduction in air quality, greenhouse gas, noise, and traffic impacts would be minimal in comparison to the economic value of providing housing and employment opportunities throughout the City.

Table 5.E: Comparison of the Environmental Impacts of the Proposed Project to the Project Alternatives

Environmental Topic	Proposed Project Level of Impacts After Mitigation	Alternative 1: No Project/ No Development Alternative	Alternative 2: Areas of Change Reduction/ Reduced Project	Alternative 3: Reduced VMT Alternative/ Transit-Oriented Alternative	Alternative 4: Neighborhood -Serving Centers and Corridors Commercial-Only Alternative
Aesthetics	Less Than Significant	L	L	L	L
Air Quality	Significant Unavoidable	L	L	L	L
Greenhouse Gas Emissions	Significant Unavoidable	L	L	L	L
Land Use	Less Than Significant	L	S	S	S
Noise	Less Than Significant	L	L	L	L
Population and Housing	Less Than Significant	L	L	L	S
Public Services	Less Than Significant	L	L	L	L
Transportation/Traffic	Significant Unavoidable	L	L	L	S
Utilities	Less Than Significant	L	L	L	L
Attainment of project objectives	Meets all of the project objectives	Meets none of the project objectives	Meets a majority of the project objectives but not to the same degree as the proposed project	Meets some of the project objectives but not to the same degree as the proposed project	Meets a majority of the project objectives but not to the same degree as the proposed project

Source: LSA Associates, Inc. (February 2016).
Legend:
L = Less impacts than the proposed project; reduces or eliminates significant and adverse impacts
S = Similar impacts as the proposed project; does not eliminate significant and adverse impacts
G = Greater impacts than the proposed project

6.0 LONG-TERM IMPLICATIONS OF THE PROJECT

6.1 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126.2 (c) of the California Environmental Quality Act (CEQA) Guidelines (*State CEQA Guidelines)* requires that an Environmental Impact Report (EIR) consider and discuss significant irreversible changes that would be caused by implementation of the proposed City of Long Beach (City) General Plan Land Use and Urban Design Elements (LUE/UDE) project (proposed project). The *State CEQA Guidelines* specify that the use of nonrenewable resources during the initial and continued phases of the project should be discussed because a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary and secondary impacts (such as a highway improvement that provides access to a previously inaccessible area) should also be discussed because such changes generally commit future generations to similar uses. Irreversible damage can also result from environmental accidents associated with the project and should be discussed.

Project development is a planning action that results in an irreversible commitment of land. The planning area is largely built out in nature, and future development under the proposed project would likely occur as infill development. In the event that a project future project under the LUE/UDE is proposed on undeveloped land, after the structural lifespan of the building is reached, it is improbable that the project site would revert to its undeveloped nature. Once implemented, the proposed project would allow for the characteristics of land in the planning area to result in an irreversible commitment of land.

Construction of future development facilitated by the proposed project would result in a commitment of limited, slowly renewable, and nonrenewable resources. Such resources may include certain types of lumber and other forest products; raw materials such as steel; aggregate materials used in concrete and asphalt such as sand and stone; water; petrochemical construction materials such as plastic; and petroleum-based construction materials. In addition, fossil fuels used by construction equipment would also be consumed. Future project construction will also result in an increased commitment of public maintenance services such as waste disposal and treatment.

Similarly, operation of the future development facilitated by the proposed project would result in the commitment of limited, nonrenewable resources and slowly renewable resources such as natural gas, electricity, petroleum-based fuels, fossil fuels, and water. Natural gas and electricity would be used for lighting, heating, and cooling of the buildings and operation of the future facilities. As discussed in Section 4.7, Public Services, the projected electricity and natural gas demands are within the existing delivery capacity of service providers and the proposed project would not result in a significant adverse impact related to the provision of electricity or natural gas. In addition, Title 24 of the California Code of Regulations (CCR) requires conservation practices that would limit the amount of energy consumed by the proposed project. Furthermore, all future development under the proposed project would be required to undergo project-specific analysis and comply with all Title 24 energy efficiency standards. Nevertheless, the use of such resources would continue to represent a long-term commitment of essentially nonrenewable resources.

Implementation of the proposed project would also result in future development that would result in an increased demand for potable water, changes to on-site drainage patterns, connections to storm drains, and generation of wastewater.

Each future project within the planning area would be evaluated individually, and project-specific mitigation would be required as needed. The commitment of limited, slowly renewable, and nonrenewable resources required for construction and operation of future development facilitated by the proposed project would limit the availability of these resources for future generations or for other uses during the life of the project. However, the use of such resources for future development would be consistent with regional and local plans and projected growth in the area.

6.2 GROWTH-INDUCING IMPACTS

Sections 15126(d) and 15126.2(d) of the *State CEQA Guidelines* require that an EIR analyze growth-inducing impacts and state that an EIR should discuss the ways in which the proposed project could foster economic or population growth or construction of additional housing, either directly or indirectly, in the surrounding environment. This section examines ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. An assessment of other projects that could affect the environment, individually or cumulatively, is also required. To address this issue, potential growth-inducing effects were examined through analysis of the following questions:

- Would the project remove obstacles to growth (e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development)?
- Would the project result in the need to expand one or more public services to maintain desired levels of service?
- Would the project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- Would approval of the project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

It should be noted that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment (*State CEQA Guidelines*, Section 15126.2(d)). This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment beyond the direct consequences of developing the proposed project as described in earlier sections of this Draft EIR.

6.2.1 Removal of Obstacles to Growth

The planning area encompasses the entirety of the City and is representative of a fully built out urban area containing a mix of land uses. As discussed in this Draft EIR, the proposed project does not include any physical improvements, but would allow for new PlaceTypes that would facilitate an increase in population and employment in the City. Due to the urban context of the proposed project, implementation of the proposed project would generally be accommodated by the existing

infrastructure. All future projects would be analyzed on a project-specific basis to determine the demand and capacity for existing infrastructure to serve the planning area.

The proposed project is a planning tool that would change the existing regulations pertaining to land development through the approval of new both the General Plan LUE and UDE, which would replace the existing LUE and Scenic Routes Element (SRE). These changes would affect the classification of land in the City and the design of development and infrastructure throughout the City. The proposed LUE would introduce the concept of "PlaceTypes," which would replace the current approach in the existing LUE of segregating property within the City through traditional land use designations and zoning classifications. The UDE would be an entirely new element of the City's General Plan and would replace the existing SRE. These changes to land development regulations would not allow for unrestricted growth, rather, the proposed LUE and UDE would provide greater flexibility and a mix of compatible land uses, focus new development within the Major Areas of Change, and outline a urban framework that addresses the varying aesthetic characteristics of the City. Because Long Beach is a built-out city that is surrounded by other built-out communities, continued growth in the City would not remove obstacles to growth beyond its borders. Therefore, the proposed project would not be considered to be growth inducing, even with the increased demand and changes to land use regulations associated with build-out of the proposed project.

6.2.2 Expansion of Public Services

As discussed in Section 4.7, Public Services, the planning area is currently served by all public service providers, including police protection services, fire prevention services, public schools, public libraries, electricity, and natural gas. The proposed project does not include any physical improvements, but allows future development that is anticipated to create an increase in the demand for public services within the City. All future projects consistent with the proposed LUE and UDE would be required to undergo project-specific environmental review and comply with the provision of police, fire, and school impact fees. In addition, new electricity and natural gas facilities to support the project-related demand would be constructed in accordance with the demand for the new service.

6.2.3 Encouragement/Facilitation of Economic Effects

Short Term

During construction of future development facilitated by the proposed project, a number of temporary design, engineering, and construction-related jobs would be created, increasing economic activity. This would be a direct economic effect of this project that could significantly affect the environment. Because the proposed project is a programmatic policy document, the impacts from this effect would be analyzed and any appropriate mitigation imposed on a project-by-project basis.

Long Term

The proposed project would allow for a significant increase in population, employment, and housing in the City of Long Beach through the year 2040. The growth associated with build-out of the proposed project would be consistent with the Southern California Association of Governments' (SCAG) regional growth forecasts for each of these topic areas for the same horizon year (2040). This population and employment growth would facilitate economic goods and services that could result in the creation of new businesses and/or the expansion of existing businesses to address these economic

needs. Many of the project objectives of the proposed LUE and UDE are to enhance economic vitality and create job growth allowing for new businesses in in the City. Actual economic growth will depend on future market demand, site constraints, and property owner willingness. However, new commercial uses developed to serve the shopping needs of future residents would likely generate additional employment opportunities. Therefore, the proposed project would have both direct and indirect economic effects that could significantly affect the environment. Because the proposed project is a programmatic policy document, the impacts from this effect would be analyzed and any appropriate mitigation imposed on a project-by-project basis.

6.2.4 Precedent-Setting Action

Approval of the proposed project would not set a precedent that could encourage and facilitate other activities that could significantly affect the environment. Pursuant to California Government Code Sections 65300 et seq., cities and counties in the State of California are required to periodically update their general plans.

Unlike project-by-project approval, the proposed project would be a comprehensive planning tool that would define future land use and design throughout the City. The proposed project represents the implementation of both the LUE and UDE, which would establish PlaceTypes, urban design guidelines, goals, and policies for the planning area. The proposed change from segregated land use designations to PlaceType classifications would apply to all parcels throughout the City. Major land use changes proposed as part of the LUE are identified as Major Areas of Change, which include introduction of a new PlaceType category, increased density, or transit-oriented uses (see Chapter 3.0, Project Description, of this Draft EIR).

Proposed goals and policies in both elements encourage greater flexibility in land uses as well as the orderly accommodation of growth and urban design. In addition, the proposed project introduces transit-oriented PlaceTypes to focus development in certain areas in the City and along existing transit corridors. These changes to the land use categorization of the City represent a precedent-setting action because implementation of the proposed project would create a community that encourages increased density, transit-oriented development, and flexible land uses. However, these policies have indirect impacts, such as creating an LUE that aspires to reduce air quality and greenhouse gas emissions and encourages the reduction of vehicle miles traveled and, therefore, the project would be beneficial to the City and region and does not represent an adverse impact.

In Chapter 3.0, Project Description, Table 3.B, Project Buildout Summary, estimates the future housing unit and non-residential square footage based on the build-out projections of the proposed LUE. Projections are based on the build-out capacity of PlaceTypes based on allowable densities. As shown in Table 3.B, 2040 build out of the LUE is projected to accommodate approximately 484,485 residents, 175,538 housing units, and 181,665 employees. Project-related increases in population and employment have been accounted for in SCAG's growth projections for the City. As discussed throughout this Draft EIR, implementation of the LUE and UDE would result in significant and unavoidable adverse impacts related to air quality, global climate change, and transportation/traffic. However, existing land uses in Long Beach generate citywide impacts related to these three topic areas under existing conditions. Although significant and unavoidable impacts generated by implementation of the proposed project could be greater than under existing conditions, they do not introduce a precedent-setting new type of environmental impact previously unseen in Long Beach.

The City is almost entirely built out, and future development would be mostly infill. The proposed project does not include any physical improvements, and subsequent similar actions consistent with the proposed LUE and UDE would require environmental analysis and associated mitigation to ensure that such subsequent impacts would not significantly affect the environment.

6.3 SIGNIFICANT EFFECTS THAT CANNOT BE AVOIDED

As determined in the contents of this Draft EIR, implementation of the proposed project would result in significant and unavoidable adverse impacts related to air quality, global climate change, and transportation/traffic. With implementation of mitigation measures for air quality and greenhouse gas impacts, the potential impacts identified in this Draft EIR would remain significant and unavoidable. Due to the absence of feasible mitigation for the adverse traffic impacts at 44 study area intersections under the General Plan build-out scenario, transportation/traffic impacts identified in this Draft EIR remain significant and unavoidable. These impacts are further discussed in Chapter 8.0, Significant Unavoidable Adverse Impacts, in this Draft EIR.

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7.0 MITIGATION MONITORING AND REPORTING PROGRAM

7.1 MITIGATION MONITORING REQUIREMENTS

Public Resources Code (PRC) Section 21081.6 (enacted by the passage of Assembly Bill 3180) mandates that the following requirements shall apply to all reporting or mitigation monitoring programs:

- The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes that have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.
- The lead agency shall specify the location and custodian of the documents or other materials that constitute the record of proceedings upon which its decision is based.
- A public agency shall provide measures to mitigate or avoid significant effects on the environment that are fully enforceable through permit conditions, agreements, or other measures. Conditions of project approval may be set forth in referenced documents that address required mitigation measures or, in the case of the adoption of a plan, policy, regulation, or other project, by incorporating the mitigation measures into the plan, policy, regulation, or project design.
- Prior to the close of the public review period for a Draft Environmental Impact Report (EIR), a responsible agency, or a public agency having jurisdiction over natural resources affected by the project, shall either (1) submit to the lead agency complete and detailed performance objectives for mitigation measures that would address the significant effects on the environment identified by the responsible agency or agency having jurisdiction over natural resources affected by the project, or (2) refer the lead agency to appropriate, readily available guidelines or reference documents. Any mitigation measures submitted to a lead agency by a responsible agency or an agency having jurisdiction over natural resources affected by the project shall be limited to measures that mitigate impacts to resources that are subject to the statutory authority of, and definitions applicable to, that agency. Compliance or noncompliance with that requirement by a responsible agency or agency having jurisdiction over natural resources affected by a project shall not limit the authority of the responsible agency or agency having jurisdiction over natural resources affected by a project, or the authority of the lead agency, to approve, condition, or deny projects as provided by this division or any other provision of law.

7.2 MITIGATION MONITORING PROCEDURES

The mitigation monitoring and reporting program has been prepared in compliance with PRC Section 21081.6. It describes the requirements and procedures to be followed by the City of Long Beach (City) to ensure that all mitigation measures adopted as part of the proposed Long Beach General

Plan Land Use and Urban Design Elements (LUE/UDE) project (proposed project) will be carried out as described in this Draft EIR.

Table 7.A lists each of the mitigation measures specified in this Draft EIR and identifies the party or parties responsible for implementation and monitoring of each measure.

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party/Approving Agency	Timing for Mitigation Measure
4.1: Aesthetics			
The proposed project would not result in any significant adverse impacts related to aesthetics. No mitigation is required.			
4.2: Air Quality			
MM AQ-1	Prior to issuance of any construction permits, future development projects subject to discretionary review shall prepare and submit to the City of Long Beach (City) Department of Development Services Planning Bureau a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology for assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the SCAQMD-adopted thresholds of significance, the Department of Development Services shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the Department of Development Services. Mitigation measures to reduce construction-related emissions include, but are not limited to: • Require the following fugitive-dust control measures: o Use nontoxic soil stabilizers to reduce wind erosion. o Apply water every 4 hours to active soil-disturbing activities. o Tarp and/or maintain a minimum of 24 inches of freeboard on trucks hauling dirt, sand, soil, or other loose materials. • Use construction equipment rated by the United States Environmental Protection Agency (EPA) as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower. • Ensure that construction equipment is properly serviced and maintained to the manufacturers' standards.		City of Long Beach Department of Development Services Planning Bureau	Prior to issuance of any construction permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party/Approving Agency	Timing for Mitigation Measure
	• Limit nonessential idling of construction equipment to no more than five consecutive minutes. • Using Super-Compliant volatile organic compound (VOC) paints for coating of architectural surfaces whenever possible.[1]		
MM AQ-2	Prior to future discretionary project approval, development project applicants shall prepare and submit to the City of Long Beach Department of Development Services a technical assessment evaluating potential project operation phase-related air quality impacts. The evaluation shall be prepared in conformance with SCAQMD methodology in assessing air quality impacts. If operation-related air pollutants are determined to have the potential to exceed the SCAQMD-adopted thresholds of significance, the Department of Development Services shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities. The identified measures shall be included as part of the Standard Conditions of Approval. Below are possible mitigation measures to reduce long-term emissions: • For site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plugging in the anticipated number of refrigerated trailers to reduce idling time and emissions. • Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use. • Site-specific developments with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with California Air Resources Board (ARB) Rule 2845 (13 California Code of Regulations [CCR] Chapter 10, Section 2485).	City of Long Beach Department of Development Services	Prior to future discretionary project approval/Prior to issuance of a Certificate of Occupancy

[1] A list of Super-Compliant architectural coating manufacturers can be found on the SCAQMD website at http://www.aqmd.gov/prdas/brochures/Super-Compliant_AIM.pdf.

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party/Approving Agency	Timing for Mitigation Measure
	• Site-specific development shall demonstrate that an adequate number of electrical vehicle Level 2 charging stations are provided on site. The location of the electrical outlets shall be specified on building plans, and proper installation shall be verified by the Department of Development Services prior to issuance of a Certificate of Occupancy.		
MM AQ-3	Prior to future discretionary approval for projects that require environmental evaluation under the California Environmental Quality Act (CEQA), the City of Long Beach would evaluate new development proposals for sensitive land uses (e.g., residences, schools, and daycare centers) within the City for potential incompatibilities with regard to the ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005). In addition, applicants for siting or expanding sensitive land uses that are within the recommended buffer distances listed in Table 1-1 of the ARB Handbook would submit a Health Risk Assessment (HRA) to the City of Long Beach. The HRA shall be prepared in accordance with the policies and procedures of the State Office of Environmental Health Hazard Assessment (OEHHA) and the South Coast Air Quality Management District (SCAQMD). The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children. If the HRA shows that the incremental cancer risk and/or non-cancer hazard index exceeds the respective thresholds, as established by the SCAQMD at the time a project is considered, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below the aforementioned thresholds as established by the SCAQMD), including appropriate enforcement mechanisms. Measures to reduce risk may include, but are not limited to, the following: • Air intakes oriented away from high-volume roadways and/or truck loading zones; and • Heating, ventilation, and air conditioning systems of the buildings provided with appropriately sized maximum efficiency rating value filters. Prior to future discretionary project approval, applicants for new industrial or warehousing land uses that (1) have the potential to generate 100 or more diesel truck trips per day or have 40 or more trucks with operating diesel-powered	City of Long Beach Department of Development Services Planning Bureau	Prior to future discretionary approval for projects that require environmental evaluation under the California Environmental Quality Act (CEQA)

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party/Approving Agency	Timing for Mitigation Measure
	transport refrigeration units, and (2) are within 1,000 feet of a sensitive land use (e.g., residential, schools, hospitals, or nursing homes), as measured from the property line of the project to the property line of the nearest sensitive use, shall submit an HRA to the Department of Development Services. The HRA shall be prepared in accordance with policies and procedures of the State OEHHA and the SCAQMD. If the HRA shows that the incremental cancer risk and/or non-cancer hazard index exceeds the respective thresholds, as established by the SCAQMD at the time a project is considered, the applicant will be required to identify and demonstrate whether best available control technologies for toxics (T-BACTs), including appropriate enforcement mechanisms, are capable of reducing potential cancer and non-cancer risks to an acceptable level. T-BACTs may include, but are not limited to, restricting idling on site or electrifying warehousing docks to reduce diesel particulate matter, or requiring use of newer equipment and/or vehicles. T-BACTs identified in the HRA shall be identified as mitigation measures in the environmental document and/or incorporated into the site plan.		
4.3: Greenhouse Gas Emissions			
GHG-1	The City of Long Beach (City) shall develop a greenhouse gas (GHG) Reduction Plan or Climate Action Plan (CAP) to ensure that the City continues on a trajectory that aligns with the short-term, interim, and long-term state GHG reduction goals of Assembly Bill (AB) 32 (2020 goal), Executive Order (EO) B-30-15 (2030 goal), and EO S-03-05 (2050 goal). Within approximately 36 months of adoption of the proposed General Plan Land Use Element (LUE)/Urban Design Element (UDE) project, the City of Long Beach shall prepare and present to the City Council for adoption a community climate action plan/greenhouse gas reduction plan (Plan). The Plan shall identify strategies to be implemented to reduce GHG emissions associated with the City, and shall include as one alternative a program that achieves the AB 32 targets. In addition, the City shall monitor GHG emissions by updating its community-wide GHG emissions inventory every 5 years upon adoption of the initial Plan. Upon the next update to the Plan, the inventory, GHG reduction measures, and GHG reductions shall be forecast to year 2040 to ensure progress toward achieving the interim target that aligns with the long-term GHG reduction goals of EO S-03-04. The Plan update shall take into account the reductions achievable from federal and State actions	City of Long Beach Department of Development Services	Within approximately 36 months of adoption of the proposed General Plan Land Use Element (LUE)/Urban Design Element (UDE) project/Creation of inventory every 5 years upon adoption of the initial Plan/ Revisions to the 2040 Plan Update shall be completed by January 1, 2020

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party/Approving Agency	Timing for Mitigation Measure
and measures as well as ongoing work by the City and the private sector. The 2040 Plan update shall be completed by January 1, 2020, with a plan to achieve GHG reductions for 2030 (EO B-30-15 goal), provided the State has an actual plan to achieve reductions for 2030. New reduction programs in similar sectors as the proposed Plan (building energy, transportation, waste, water, wastewater, agriculture, and others) will likely be necessary. Future targets shall be considered in alignment with State reduction targets, to the maximum extent feasible, but it is premature at this time to determine whether or not such targets can be feasibly met through the combination of federal, State, and local action given technical, logistical and financial constraints. Future updates to the Plan shall account for the horizon beyond 2030 as the State adopts actual plans to meet post-2030 targets. The Plan will include details on how the reduction programs will be implemented and will designate responsible parties to monitor progress and ensure implementation of the reductions within the Plan. A monitoring and reporting program will be included to ensure the Plan achieves the reduction targets. The Plan will also include criteria that would trigger an update to the Plan. Examples of triggers requiring a Plan update include monitoring of progress that demonstrates that the Plan will not achieve the reduction targets, or economic and/or population growth that exceeds the scope of the Plan. In all instances, the Plan and any updates shall be consistent with State and federal law. Long Beach GHG Reduction Plan or Climate Action Plan Measures: • Establish a goal to encourage 15 percent of existing single-family homes to install solar installations before 2020. • Establish a goal to encourage 15 percent of existing commercial/industrial buildings to install solar installations before 2020. • Collaborate with Long Beach Transit to implement “Smart Bus” technology, global positioning system (GPS), and electronic displays at all transit stops by 2020 to provide customers with “real-time” arrival and departure time information. • Explore the opportunity for expansion of electric-vehicle infrastructure,		

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party/Approving Agency	Timing for Mitigation Measure
	including requiring electric-vehicle charging stations in new qualified developments. • Develop public education materials that support and encourage the use of recycled water. • Consider a plan for installing recycled water infrastructures for all new parks, schools, and other public facilities to use 100 percent recycled water for non-potable outdoor uses. • Adopt a municipal goal of 100 percent recycled water for non-potable sources, as feasible, depending on available recycled water infrastructure. • Adopt a landscaping water conservation ordinance that exceeds the requirements in the Model Landscape Ordinance (AB 1881). Post-2020 Measures: • Prior to January 1, 2020, the City of Long Beach shall update the GHG Reduction Plan or CAP to address the GHG reduction goals of EO B-30-15 for GHG sectors for which the City has direct or indirect jurisdictional control. The City shall identify a GHG emissions reduction target for year 2030 that is consistent with the GHG reduction goals identified in EO S-03-05. The GHG Reduction Plan or CAP shall be updated to include measures to ensure that the City is on a trajectory that aligns with the State's 2030 GHG emissions reduction target.		
GHG-2	Within approximately 18 months of adoption of the proposed General Plan LUE/ UDE project, the City shall prepare and present to the City Council for adoption a vehicle miles traveled (VMT) reduction plan to ensure that GHG reduction can be achieved by reducing VMT and by increasing or encouraging the use of alternative fuels and transportation technologies. • The City will ensure that new development incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation. • The City shall give priority to transportation projects that will contribute to a	City of Long Beach Department of Development Services	Within approximately 18 months of adoption of the proposed General Plan LUE/ UDE project

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party/Approving Agency	Timing for Mitigation Measure
	reduction in VMT per capita, while maintaining economic vitality and sustainability. • The City will create an interconnected transportation system that allows a shift in travel from private passenger vehicle to alternative modes, including public transit, ride sharing, car sharing, bicycling, and walking.		
GHG-3	Prior to issuance of building permits for residential development projects within the LUE/UDE Areas of Change, the property owner/developer shall indicate on the building plans that the following features have been incorporated into the design of the building(s). Proper installation of these features shall be verified by the City of Long Beach Building and Safety Bureau prior to issuance of a certificate of occupancy. • For multifamily dwellings, electric-vehicle charging shall be provided as specified in Section A4.106.8.2 (Residential Voluntary Measures) of the CALGreen Code. • Bicycle parking shall be provided as specified in Section A4.106.9 (Residential Voluntary Measures) of the California Green Building Standards Code (CALGreen Code).	City of Long Beach Building and Safety Bureau	Prior to issuance of building permits for residential development projects within the LUE/UDE Areas of Change/Prior to issuance of a Certificate of Occupancy
GHG-4	Prior to issuance of building permits for non-residential development projects within the LUE/UDE Areas of Change, the property owner/developer shall indicate on the building plans that the following features have been incorporated into the design of the building(s). Proper installation of these features shall be verified by the City of Long Beach Building and Safety Bureau prior to issuance of a certificate of occupancy. • For buildings with more than ten tenant-occupants, changing/shower facilities shall be provided as specified in Section A5.106.4.3 (Nonresidential Voluntary Measures) of the CALGreen Code. • Preferential parking for low-emitting, fuel-efficient, and carpool/van vehicles shall be provided as specified in Section A5.106.5.1 (Nonresidential Voluntary Measures) of the CALGreen Code. • Facilities shall be installed to support future electric vehicle charging at each	City of Long Beach Building and Safety Bureau	Prior to issuance of building permits for non-residential development projects within the LUE/UDE Areas of Change/Prior to issuance of a Certificate of Occupancy

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party/Approving Agency	Timing for Mitigation Measure
non-residential building with 30 or more parking spaces. Installation shall be consistent with Section A5.106.5.3 (Nonresidential Voluntary Measures) of the CALGreen Code.		
4.4: Land Use and Planning		
The proposed project would not result in any significant adverse impacts related to land use and planning. No mitigation is required.		
4.5: Noise		
The proposed project would not result in any significant adverse impacts related to noise. No mitigation is required.		
4.6: Population and Housing		
The proposed project would not result in any significant adverse impacts related to population and housing. No mitigation is required.		
4.7: Public Services		
The proposed project would not result in any significant adverse impacts related to public services. No mitigation is required.		
4.8: Transportation/Traffic		
There are no feasible mitigation measures to offset potentially significant adverse impacts to traffic and circulation associated with implementation of the proposed project.		
4.9: Utilities		
The proposed project would not result in any significant adverse impacts related to utilities. No mitigation is required.		

8.0 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

8.1 INTRODUCTION

The California Environmental Quality Act (CEQA) Guidelines (*State CEQA Guidelines*) Section 15126.2(b) requires that an Environmental Impact Report (EIR) describe significant adverse environmental impacts of a proposed project that cannot be avoided, including those effects that can be mitigated but not reduced to below a level of significance. The Executive Summary of this EIR contains a detailed summary table that identifies the potentially significant adverse impacts of the City of Long Beach (City) General Plan Land Use and Urban Design Elements (LUE/UDE) Project (proposed project); project design features, standard conditions, and mitigation measures applicable to the proposed project; and the level of significance of each impact after mitigation. These impacts are also described in detail in Chapter 4.0, Environmental Setting, Impacts, and Mitigation Measures, and throughout Sections 4.1 through 4.9 of this Draft EIR.

As described in detail in Sections 4.1 through 4.9 of this Draft EIR, the proposed project would not result in significant unavoidable adverse impacts related to aesthetics, land use and planning, noise, population and housing, public services, and utilities and service systems. Therefore, the project impacts related to these issues are not discussed further in this section.

As described in detail in Chapter 4.0 and summarized briefly below, the proposed project would result in significant, unavoidable adverse impacts after mitigation related to air quality, global climate change, and transportation and traffic.

8.2 SIGNIFICANT UNAVOIDABLE ADVERSE PROJECT IMPACTS

8.2.1 Air Quality

The proposed project would have significant unavoidable impacts related to the violation of applicable air quality standards and the exposure of sensitive receptors to substantial pollutant concentrations. Mitigation Measure AQ-2 requires the preparation of project-specific technical assessments evaluating operational-related air quality impacts to ensure that operational-related emissions are reduced to the maximum extent feasible. However, because the scale of future development occurring under the proposed project has not yet been determined or estimated, in an abundance of caution, operational activities associated with the proposed project would be considered significant and unavoidable. Therefore, the potential emissions impact associated with the operation of the proposed project would remain significant and unavoidable even with implementation of Mitigation Measure AQ-2.

In addition to significant unavoidable impacts associated with operational activities, a significant and unavoidable impact has also been identified related to the exposure of sensitive receptors to substantial pollutant concentrations because the proposed project would allow for the development of future industrial and commercial uses, which are expected to release toxic air contaminants (TACs) during operational activities. Since it is not possible to determine the amount of TAC concentrations

at the time of this analysis, it is not possible to calculate the risks for a particular health effect within the proposed Areas of Change. Future development projects would be subject to environmental review under CEQA and would be required to analyze potential TAC emissions and include mitigation as appropriate.

The proposed project would also permit residential land uses along Interstate 710 (I-710) and in areas near or adjacent to commercial and industrial uses and existing permitted TAC sources. Thus, new residential and other sensitive developments could be sited within the buffer distances to TAC sources. This is a potentially significant impact, and mitigation measures would be required. Mitigation Measures AQ-2 and AQ-3, which require project-specific technical assessments evaluating operational-related air quality impacts and the preparation of project-specific health risk assessments would be required to reduce air quality impacts to sensitive receptors. Despite implementation of Mitigation Measures AQ-2 and AQ-3, and in an abundance of caution, potential impacts associated with the operation of the proposed project, including the potential health risks to sensitive receptors, would remain significant and unavoidable.

8.2.2 Global Climate Change

The proposed project would have significant unavoidable impacts related to the generation of greenhouse gas emissions that could significantly impact the environment. Implementation of the proposed LUE/UDE would contribute to Global Climate Change (GCC) through direct and indirect emissions of greenhouse gases (GHGs) from land uses within the City of Long Beach. On a per capita basis, build out of the proposed LUE/UDE would reduce the GHG emissions from 9.5 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year per service population (MT of CO_2e/yr/SP) under existing conditions down to 5.9 MT of CO_2e/yr/SP (with reduction measures incorporated). However, the LUE/UDE GHG emissions in the City for build-out year 2040 (5.9 MT of CO_2e/yr/SP) would still exceed the interim efficiency threshold of 3.4 MT of CO_2e/yr/SP. As such, Mitigation Measures GHG-1 through GHG-4 would be required to reduce GHG emissions. These measures require the preparation of a GHG Reduction Plan or Climate Action Plan, the preparation of a vehicle miles traveled reduction plan, and adoption of mechanisms to ensure that specific GHG reduction features are incorporated into the design of future development projects to meet or exceed the statewide goals aimed at the reduction of GHG emissions. In addition to the proposed mitigation measures, additional statewide measures would be necessary to reduce GHG emissions from development that may occur with adoption of the proposed project to meet the long-term GHG reduction goals under Executive Orders S-3-05 and B-30-15. Although the implementation of the proposed project would result in lower GHG emissions within the City as compared to existing conditions, no additional statewide measures are currently available that can be implemented. Therefore, GHG emission impacts for the project under the build-out scenario would remain significant and unavoidable.

8.2.3 Transportation/Traffic

The proposed project would have significant unavoidable impacts related to conflicts with applicable plans, ordinances, and policies, as well as conflicts with an applicable Congestion Management Plan. The *Traffic Impact Analysis* prepared for the proposed project determined that 44 intersections could be significantly impacted by implementation of future development projects within the Major Areas of Change in the 2040 build-out scenario based on the City's criteria. As compared to the conclusions

in the Mobility Element traffic study, an additional 12 intersections are now forecast to operate at Level of Service E or F under the proposed project. Potential mitigation in the form of vehicle capacity enhancements for each impacted intersection was reviewed for feasibility. In addition, the City's Capital Improvement Program, Mobility Element, and/or applicable specific plans were also reviewed for pending and planned vehicle and non-vehicle capacity improvements throughout the City. While these improvements could contribute to a reduced vehicle level of service, the effectiveness of these improvements cannot be quantified and, therefore, cannot be considered mitigation for the 44 impacted study area intersections for the purposes of CEQA. Therefore, because vehicle capacity enhancements to the impacted intersections are not feasible, and because no additional mitigation to reduce traffic is available and enforceable, impacts to the 44 intersections are considered significant and unavoidable for the build-out year of 2040.

In addition to identifying significant and unavoidable impacts at the 44 impacted intersections based on the City's criteria, the *Traffic Impact Analysis* also identified significant impacts at 5 of the 10 monitored intersections within the study area based on Los Angeles County's 2010 Congestion Management Plan criteria. Based on the results, and because there is no feasible mitigation to reduce impacts at the impacted intersections, the significant impacts to these intersections are considered significant and unavoidable for the build-out year of 2040.

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9.0 PERSONS CONTACTED

The following organizations and persons were contacted during the preparation of the Draft Environmental Impact Report for the City of Long Beach General Plan Land Use and Urban Design Elements Project (proposed project):

- Mike DuRee, Fire Chief, Long Beach Fire Department. Written correspondence. January 12, 2016.
- Susan Jones, Manager of Main Library Services, Long Beach Public Library. Email correspondence. January 19, 2016.
- Micke Lektorich, Executive Assistance, Long Beach Public Library. Email correspondence. January 20, 2016.
- Robert G. Luna, Police Chief, Long Beach Police Department. Written correspondence. January 12, 2016.

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10.0 LIST OF PREPARERS

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10.3 CONSULTANT TEAM

The following individuals were involved in the preparation of the Draft EIR and/or technical reports in support of the Draft EIR. The nature of their involvement is summarized below.

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11.0 REFERENCES

The following references were used in the preparation of the Draft Environmental Impact Report (EIR) for the City of Long Beach General Plan Land Use and Urban Design Elements.

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12.0 LIST OF ACRONYMS AND ABBREVIATIONS

°C	Celsius
°F	Fahrenheit
$\mu g/m^3$	micrograms per cubic meter
A	Anticipated
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ABAU	adjusted business-as-usual
ACM	asbestos-containing material
ADA	Americans with Disabilities Act
ADL	Activities of Daily Living
ADL	aerially deposited lead
ADT	average daily traffic
AER	Annual Emission Reporting Program
AESTH	Aesthetics
af/yr	acre feet of water per year
AGR	Agricultural Supply
APN	Assessor's Parcel Number
AQ	Air Quality
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
ARMR	Archaeological Resource Management Report
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technologies
Basin	South Coast Air Basin
BAU	business-as-usual
BC	black carbon
bcf	billion cubic feet

BHPWD	Beverly Hills Public Works Department
BIO	Biological
Bio-CO_2	Biologically Generated Carbon Dioxide
BMP	best management practice
BOD	Biological Oxygen Demand
C_2F_6	hexafluoromethane
CAAQS	California ambient air quality standards
CAFÉ	Corporate Average Fuel Economy
Cal/OSHA	California Occupational Safety and Health Administration
Cal/OSHA	California Occupational Safety and Health Administration
CalARP	California Accidental Release Prevention Program
CalEEMOD	California Emissions Estimator Model
Cal-EPA	State of California Environmental Protection Agency
CALGreen Code	California Green Building Standards Code
California Register	California Register of Historical Resources
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAMUCTD	California Manual on Uniform Traffic Control Devices
CAP	Climate Action Plan
CAR	Corrective Action Report
CAT	Climate Action Team
CBC	California Building Code
CC	Community Commercial
CC2	Commercial Community 2
CCAA/CAA	California Clean Air Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CCRC	Continuing Care Retirement Community
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CDP	Coastal Development Permit
CDTED	Crime Prevention Through Environmental Design

CEC	California Energy Commission
CEP	California Emergency Plan
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
cf	cubic feet
CF_4	tetrafluoromethane
CFC	California Fire Code
CFCs	chlorofluorocarbons
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHHSL	California Human Health Screening Levels
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
City	City of Long Beach
CIWM	California Integrated Waste Management Act of 1989
CIWMB	California Integrated Waste Management Board
CLETS	California Law Enforcement Telecommunications System
cm	centimeter(s)
CMP	Los Angeles County Congestion Management Plan
CMPHS	Congestion Management Plan Highway System
CN	Commercial Neighborhood
CNEL	Community Noise Equivalent Level
CNG	compressed natural gas
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO2e	carbon dioxide equivalent
CO2e/yr/SP	carbon dioxide equivalent per year per service population

COD	Chemical Oxygen Demand
COG	Council of Government
Commission	California Fish and Game Commission
Cortese List	Hazardous Waste and Substances Sites (Cortese) List
CPT	Cone Penetration Tests
CPUC	California Public Utilities Commission
CSU	California State University
CSUDH	California State University, Dominguez Hills
CSULB	California State University, Long Beach
CTR	California Toxics Rule
CULT	Cultural
CUPA	Certified Unified Program Agency
CUSD	Capistrano Unified School District
CVC	California Vehicle Code
CWA	Clean Water Act
cy	cubic yards
DART	Downey Area Recycling and Transfer Facility
dB	decibels
dBA	A-weighted decibels
DBEGM	design basis earthquake ground motion
DEA	United States Drug Enforcement Agency
DEIR	Draft Environmental Impact Report
Delta	Sacramento-San Joaquin River Delta
DHS	Los Angeles County Department of Health Services
Diesel RRP	Diesel Risk Reduction Plan
DOC	California Department of Conservation
DOE	United States Department of Energy
DOF	Department of Finance
DOGGR	Department of Resources, Recycling, and Recovery
DOT	United States Department of Transportation
DPM	diesel particulate matter
DPR	Department of Parks and Recreation

DPW	Department of Public Works
DSS	State of California Department of Social Services
DTSC	California Department of Toxic Substances Control
du/ac	dwelling units per acre
du/lot	dwelling units per lot
DWR	Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
EO	Executive Order
EPA	United States Environmental Protection Agency
ERMP	Emergency Response Management Plan
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
ETWU	Estimated Total Water Usage
EWMP	Enhanced Watershed Management Program
FAA	Federal Aviation Administration
FAR	floor-to-area ratio
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Policy Protection Act
ft	foot/feet
FTA	Federal Transit Administration
FTE	Full time equivalent
FY	Fiscal Year
G	greater impacts than the proposed project
gal	gallon
GCC	global climate change
GEO	Geological

GHG	greenhouse gas
GOS	General Open Space
gpd	gallons per day
gpm	gallons per minute
GPS	global positioning system
GWh	gigawatt hours
GWP	Global Warming Potential
H_2S	hydrogen sulfide
HABS	Historic American Buildings Survey
HAZ	Hazardous
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HDC	California Department of Housing and Community Development
HFC	hydrofluorocarbon
HI	Hazard Indices
HQTA	High Quality Transit Area
HRA	Health Risk Assessment
HRI	Historic Resources Inventory
HSC	California Health and Safety Code
HVAC	heating, ventilation, and air-conditioning
HVLP	high-volume, low-pressure
HWCL	State Hazardous Waste Control Law
HY	Hydrological
I-405	Interstate 405
I-5	Interstate 5
I-605	Interstate 605
I-710	Interstate 710
IC/EC	Institutional Controls/Engineering Controls
ICU	Intersection Capacity Utilization
IEA	International Energy Agency
IFC	International Fire Code
IIPP	Injury and Illness Prevention Program

IND	Industrial Service Supply
IPCC	United Nations Intergovernmental Panel on Climate Change
IS	Initial Study
ITE	Institute of Transportation Engineers
IWMP	Integrated Waste Management Plan
JWPCP	Joint Water Pollution Control Plant
K	kindergarten
kW	kilowatt
kW/day	kilowatts per day
L	Less Impacts than the Proposed Project
LACFD	Los Angeles County Fire Department
LACM	Natural History Museum of Los Angeles County
LACSD	County Sanitation Districts of Los Angeles County
LARWQCB	Los Angeles Regional Water Quality Control Board
LAUSD	Los Angeles Unified School District
LBCC	Long Beach Community College
LBFD	Long Beach Fire Department
LBGO	Long Beach Municipal Gas and Oil Department
LBMC	Long Beach Municipal Code
LBPD	Long Beach Police Department
LBPL	Long Beach Public Library
lbs	pounds
lbs/1,000 sf/day	pounds per thousand square feet per day
lbs/day	pounds per day
lbs/sf/day	pounds per square feet per day
lbs/unit/day	pounds per unit per day
LBSWMP	Long Beach Storm Water Management Program
LBT	Long Beach Transit
LBUSD	Long Beach Unified School District
LBWD	Long Beach Water Department
LCFCD	Los Angeles County Flood Control District
LCFF	Local Control Funding Formula

LCFS	Low Carbon Fuel Standard
LCP	Local Coastal Program
Ld_n	average night level
LED	light-emitting diodes
L_{eq}	Total Sound Energy of Time-Varying Noise
LGOP	Local Government Operations Protocol
LID	Low Impact Development
L_{max}	highest exponential time-averaged sound level
LOS	level of service
LSA	LSA Associates, Inc.
LSI	Limited Site Investigation
LST	Localized Significance Threshold
LUE	Land Use Element
LUST	leaking underground storage tank
MBAS	methylene blue activated substances
MBTA	Migratory Bird Treaty Act
MCF	thousand cubic feet
MEI	Maximally Exposed Individual
Metro	Los Angeles County Metropolitan Transportation Authority
mg/kg	milligrams per kilogram
mg/m^3	milligrams per Cubic Meter
mgd	millions of gallons per day
MICR	Minimum Individuals Cancer Risk
MLD	Most Likely Descendant
MMcf	million cubic feet
MMLOS	Multimodal Level of Service
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
Mobility Plan	Bicycle and Pedestrian Mobility Plan
MOU	Memorandum of Understanding
mpg	miles per gallon
mph	miles per hour

MPO	Metropolitan Planning Organization
MRF	Materials Recovery Facility
MRP	Market Price Referent
MSL	mean sea level
MT	metric tons
MUN	Municipal and Domestic Supply
MUTCD	Manual on Uniform Traffic Devices
MW	megawatts
MWDSC	Metropolitan Water District of Southern California
MWh/yr	megawatt hours per year
MWMA	Medical Waste Management Act
MWMP	Medical Waste Management Program
N/A	not applicable
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NALMA	North American Land Mammal Age
National Register	National Register of Historic Places
NCCP	Natural Communities Conservation Plan
NFRAP	No Further Remedial Action Planned
NHTSA	National Highway Traffic Safety Administration
NLR	No Long Reporting
NO_2	nitrogen dioxide
NOI	Notice of Intent
NOP	Notice of Preparation
NOP	Notice to Proceed
NO_x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NPL	National Priority List
NRC	National Research Council
NRCS	United States Natural Resources Conservation Service
NTP	Notice of Preparation

NWOS	Northwest Open Space
O_3	ozone
OAL	Office of Administrative Law
OC OA/EOC	Orange County and Operational Area Emergency Operations Center
OCFA	Orange County Fire Authority
OCSD	Orange County Sheriff's Department
OCTA	Orange County Transportation Authority
OEHHA	State Office of Environmental Health Hazard Assessment
OES	California Department of Emergency Services
OMB	White House Office of Management and Budget
OPR	Office of Planning and Research
OSH Act	Occupational Safety and Health Act of 1970
OSHA	Occupational Safety and Health Administration
P	potential
Pb	lead
PCB	polychlorinated biphenyl
PCH	Pacific Coast Highway
PDF	Portable Design Feature
PFC	perfluorocarbon
PGA	peak ground acceleration
pH	potential of hydrogen
Plan	climate action plan/greenhouse gas reduction plan
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PMP	Port Master Plan
ppb	parts per billion
ppm	parts per million
ppv	peak particle velocity
PRC	Public Resources Code
PRIMP	Paleontological Resources Impact Mitigation Program
PROC	Industrial Process Supply

proposed project	General Plan Land Use and Urban Design Elements Project
PRV	Pressure Reducing Calve Station
PSI	Professional Service Industries
psi	pounds per square inch
PVC	polyvinyl chloride
RCFE	Residential Care Facility for the Elderly
RCP	Regional Comprehensive Plan
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
REC	Renewable Energy Credits
RES	Renewable Electricity Standard
RFP	Request for Proposal
RHNA	Regional Housing Needs Assessment
RMS	root-mean-square
ROC	reactive organic compounds
ROG	reactive organic gases
RPS	Renewable Portfolio Standard
RSL	Regional Screening Levels
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
S	Similar Impacts to the Proposed Project
SB	Senate Bill
SC	Standard Condition
SCAG	Southern California Association of Governments
SCAP	Sustainable City Action Plan
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCH	State Clearinghouse
SCS	Sustainable Community Strategy
SCSAM	South County Sub-Area Model

SDG&E	San Diego Gas & Electric
SEADIP	Southeast Area Development and Improvement Plan
SELAC	Southeast Los Angeles County
SEMS	Standardized Emergency Management System
SERRF	Southeast Resource Recovery Facility
sf	square feet/foot
SF_6	sulfur hexafluoride
SHL	California Historical Landmarks
SHMA	Seismic Hazard Mapping Act
SHPI	California Points of Historical Interest
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLF	Sacred Lands File
SMBRPD	Site Mitigation and Brownfields Reuse Program Database
SO_2	sulfur dioxide
SoCal Gas	Southern California Gas Company
SO_x	sulfur oxides
SP	service population
SP/PP	Specific Plan/Precise Plan
SPL	State Equivalent Priority List
SR-1	State Route 1
SR-22	State Route 22
SR-47	State Route 47
SR-73	State Route 73
SR-74	State Route 74
SR-91	State Route 91
SR-103	State Route 103
SRA	Source Receptor Area
SRE	Scenic Routes Element
SRRE	Source Reduction and Recycling Element
State	State of California
SUSMP	Standard Urban Storm Water Mitigation Plan

SVOC	semi-volatile organic compound
SVP	Society of Vertebrate Paleontologists
SWF/LF	Solid Waste Landfill Facilities
SWL	Solid Waste Landfill
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TAZ	traffic analysis zone
T-BACT	best available control technologies for toxics
TC	Treatment Control
TCA	Transportation Corridor Agencies
TCE	tetrachloroethene
TDM	Transportation Demand Management
TDML	Total Maximum Daily Load
TDS	total dissolved solids
TGC	The Gas Company
THF	tertrahydrofuran
TIA	Traffic Impact Analysis
TMP	Traffic Management Plan
TOD	transit-oriented development
tpd	tons per day
TPH	total petroleum hydrocarbons
tpy	tons per year
TSCA	Toxic Substances Control Act
TSD	Treatment, Storage, and Disposal
TSS	total suspended solid
TTM	Tentative Tract Map
UBC	Uniform Building Code
UCPP	United Coalition to Protect Panhe
UDE	Urban Design Element
UNFCCC	United Nations Framework Convention on Climate Change
UPRR	Union Pacific Rail Road

URM	unreinforced masonry
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United State Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UV	ultraviolet
UWMP	Urban Water Management Plan
UWMPA	Urban Water Management Planning Act
v/c	volume to capacity
VCOG	volatile reactive organic compounds
VCP	Voluntary Cleanup Program
VdB	velocity in decibels
VMT	vehicle miles traveled
VOC	volatile organic compounds
vph	vehicles per hour
Vref	reference velocity amplitude
WHMC	West Hollywood Municipal Code
Williamson Act	California Land Conservation (Williamson) Act
WMA	Watershed Management Area
WMP	Watershed Management Program
WMUDS	State Waste Management Unit Data System
Working Group	Greenhouse Gas CEQA Significance Threshold Working Group
WQI	Water Quality Intel
WQMP	Water Quality Management Plan
WRP	Long Beach Water Reclamation Plant
WSA	Water Supply Assessment
WSAP	Water Supply Allocation Plan
WUCOLS	Water Use Classification of Landscape
ZNE	Zero Net Energy