The Honorable Board of Supervisors
October 23, 2018
West Carson TOD Specific Plan
ATTACHMENT 4

Final Environmental Impact Report

CEQA FINDINGS OF FACT
REGARDING THE
FINAL ENVIRONMENTAL IMPACT REPORT
FOR THE
WEST CARSON TOD SPECIFIC PLAN
STATE CLEARINGHOUSE NO. 2017011010

Exhibit A

I. BACKGROUND

The California Environmental Quality Act (CEQA) requires that a number of written findings be made by the lead agency in connection with certification of an environmental impact report (EIR) prior to approval of the project pursuant to Sections 15091 and 15093 of the CEQA Guidelines and Section 21081 of the Public Resources Code. This document provides the findings required by CEQA.

II. PROJECT SUMMARY

A. Project Location

The Specific Plan area is located in the unincorporated community of West Carson within Los Angeles County. The project area encompasses approximately 319.3 acres, bounded generally by Normandie Avenue on the west, the 208th Street Drain and West Torrance Boulevard on the north, the Interstate 110 freeway on the east, and 223rd Street on the south. Regional access to the project site is from Interstate 110 (I-110, or the Harbor Freeway) via ramps at Torrance Boulevard and Carson Street.

B. Project Description

The proposed project is a transit-oriented district specific plan that would permit development potential of up to 3,698 residential units and about 4.6 million square feet of nonresidential land uses in the unincorporated community of West Carson. The specific plan proposes relocation of the Carson Station of the Metro Silver Line express bus line to a new location on the I-110 in an effort to increase usage of the Carson Station; usage is currently constrained by factors including limited visibility from the station and fast-moving freeway traffic next to the station. The station would be relocated north of the Carson Street overpass. Bicycle and pedestrian improvements, including striped (Class II) bicycle lanes and wider sidewalks, are planned for Torrance Boulevard, Vermont Avenue, Normandie Avenue, Carson Street, and 223rd Street.

The Specific Plan would designate the following eleven zoning districts for the project site: West Carson Residential 1 Zone, West Carson Residential 3 Zone, West Carson Residential 4 Zone, Residential Planned Development, Neighborhood Commercial, Unlimited Commercial, Industrial Flex, Harbor-UCLA Medical Zone, Mixed Use 1 Zone, Mixed Use 2 Zone, and Public Zone.

The Specific Plan includes 200,000 square feet of new research space for biomedical research at the Harbor-UCLA campus. The Specific Plan would support a new Biotech Park at the western edge of

Harbor-UCLA Medical Center through a public/private partnership to develop an additional 250,000 square feet of biotech park space.

Industrial Flex zoning districts preserve existing employment uses while simultaneously allowing for nonindustrial uses, where appropriate. The Specific Plan includes one Industrial Flex District along Vermont Avenue just south of West Carson Street. Employment generators here are widely varied and include music production and metal fabrication facilities, silk-screening and embroidered apparel, medical supply outlets, and freight-forwarding brokerages.

The Specific Plan includes recommendations for several water and sewer main upgrades to accommodate project buildout.

C. Project Objectives

Project goals will aid decision makers in their review of the project and associated environmental impacts.

1. Adopt a specific plan for the project site consistent with the goals and policies of the County of Los Angeles 2035 General Plan.
2. Provide additional housing opportunities near transit consistent with the County's adopted Housing Element.
3. Create a distinct identity in the West Carson community.
4. Improve connections within the community and increase access to transit.
5. Ensure the health and safety of residents, visitors, and employees.
6. Ensure economic vitality of the project area.
7. Encourage a diverse mix of land use and transit-oriented development.
8. Improve the quality of life for existing residents with improvements to the public realm.
9. Maximize the use of sustainable development practices.

D. ENVIRONMENTAL REVIEW PROCESS

In conformance with CEQA, the State CEQA Guidelines, and the County of Los Angeles (County, the lead agency for the proposed project) CEQA Guidelines, the County conducted an extensive environmental review of the proposed project.

- The County determined that an EIR would be required for the proposed project and issued a Notice of Preparation (NOP) and Initial Study on January 17, 2017. The public review period extended from January 17, 2017 to February 15, 2017.

- The County held a scoping meeting for the EIR on February 1, 2017.

- Based upon the Initial Study and Environmental Checklist Form, the County staff determined that a Draft EIR (DEIR) should be prepared for the proposed project. The scope of the DEIR

was determined based on the County's Initial Study, comments received in response to the NOP, and comments received at the scoping meeting conducted by the County. Section 2.2 of the DEIR describes the issues identified for analysis in the DEIR.

- The County prepared a DEIR, which was made available for a 45-day public review period beginning February 28, 2018 and ending April 13, 2018.

- The County held a community meeting to provide oral comments on the Draft EIR on March 8, 2018.

- The County prepared a Final EIR (FEIR), including the Responses to Comments to the DEIR, the Findings of Fact, and the Statement of Overriding Considerations. The FEIR/Response to Comments contains comments on the DEIR, responses to those comments, revisions to the DEIR, and appended documents.

- The County held public hearings on the proposed project, including a Regional Planning Commission hearing on July 11, 2018, and a County Board of Supervisors Hearing on _____.

E. RECORD OF PROCEEDINGS

For purposes of CEQA and these Findings, the Record of Proceedings for the proposed project consists of the following documents and other evidence, at a minimum:

- The NOP and all other public notices issued by the City in conjunction with the proposed project

- The FEIR for the proposed project

- The DEIR

- All written comments submitted by agencies or members of the public during the public review comment period on the DEIR

- All responses to written comments submitted by agencies or members of the public during the public review comment period on the DEIR

- All written and verbal public testimony presented during a noticed public hearing for the proposed project

- The Mitigation Monitoring and Reporting Program

- The reports and technical memoranda included or referenced in the Response to Comments

- All documents, studies, EIRs, or other materials incorporated by reference in the DEIR and FEIR

- The Resolutions adopted by the County in connection with the proposed project, and all documents incorporated by reference therein, including comments received after the close of the comment period and responses thereto

- Matters of common knowledge to the County, including but not limited to federal, state, and local laws and regulations

- Any documents expressly cited in these Findings

- Any other relevant materials required to be in the record of proceedings by Public Resources Code Section 21167.6(e)

F. CUSTODIAN AND LOCATION OF RECORDS

The documents and other materials that constitute the administrative record for the County's actions related to the project are at the Los Angeles County Department of Regional Planning, 320 West Temple Street, Room 1356, Los Angeles, CA 90012. The County Department of Regional Planning (DRP) is the custodian of the administrative record for the project. Copies of these documents, which constitute the record of proceedings, are and at all relevant times have been and will be available upon request at the offices of the DRP. This information is provided in compliance with Public Resources Code Section 21081.6(a)(2) and Guidelines Section 15091(e).

III. FINDINGS AND FACTS AND OVERRIDING CONSIDERATIONS

The County, as lead agency, is required under CEQA to make written findings concerning each alternative and each significant environmental impact identified in the DEIR and FEIR.

Specifically, regarding findings, Guidelines Section 15091 provides:

> (a) No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:
>
> 1. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the FEIR.
>
> 2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
>
> 3. Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the FEIR.

(b) The findings required by subsection (a) shall be supported by substantial evidence in the record.

(c) The finding in subdivision (a)(2) shall not be made if the agency making the finding has concurrent jurisdiction with another agency to deal with identified feasible mitigation measures or alternatives. The finding in subsection (a)(3) shall describe the specific reasons for rejecting identified mitigation measures and project alternatives.

(d) When making the findings required in subdivision (a)(1), the agency shall also adopt a program for reporting on or monitoring the changes which it has either required in the project or made a condition of approval to avoid or substantially lessen significant environmental effects. These measures must be fully enforceable through permit conditions, agreements, or other measures.

(e) The public agency shall specify the location and custodian of the documents or other material which constitute the record of the proceedings upon which its decision is based.

(f) A statement made pursuant to Section 15093 does not substitute for the findings required by this section.

The "changes or alterations" referred to in Section 15091(a)(1) may include a wide variety of measures or actions as set forth in Guidelines Section 15370, including:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

(c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

(e) Compensating for the impact by replacing or providing substitute resources or environments.

IV. FINDINGS AND FACTS REGARDING IMPACTS

A. IMPACTS DETERMINED TO BE LESS THAN SIGNIFICANT

Initial Study

An Initial Study was prepared by the County to identify the potential significant effects of the project. The Initial Study was completed and distributed with the Notice of Preparation for the

proposed project, dated January 17, 2017. The Initial Study determined that the proposed project would not have the potential to result in significant impacts to Agricultural and Forestry Resources, Biological Resources, Energy, Mineral Resources. All other topical areas of evaluation included in the Environmental Checklist were determined to require further assessment in an EIR.

- **Agricultural and Forestry Resources:** There is no mapped important farmland, agricultural uses, forest land, or land zoned for agricultural or forest uses onsite. No agricultural use or forestry uses would be impacted by the Proposed Project. No significant impact related to agricultural or forestry uses would occur.

- **Biological Resources:** There is no native habitat or suitable breeding or nesting habitat for sensitive species onsite. The site is entire ling about 0.75 acre, that is, approximately 0.25 percent of the site. There are no wetlands onsite. Trees onsite could be used for nesting by birds; implementation of regulations pursuant to the Migratory Bird Treaty Act would reduce impacts to nesting birds to less than significant. Ornamental oak trees could be present onsite; Specific Plan buildout would comply with the Los Angeles County Oak Tree Ordinance. The project is not in or next to a Los Angeles County Significant Ecological Area or a Habitat Conservation Plan or Natural Communities Conservation Plan. Impacts to biological resources would be less than significant.

- **Energy:** Projects developed under the Specific Plan would comply with the Los Angeles County Green Building Standards Code and several state and federal laws and regulations governing building energy use and appliance energy use. Specific Plan buildout would not violate the County Green Building Standards Code or involve the inefficient use of energy, and impacts would be less than significant.

- **Mineral Resources:** The project site is in Mineral Resource Zone 1, indicating that no significant mineral deposits are present, or that there is little likelihood for their presence. There are no mines on or near the project site. Impacts to mineral resources would be less than significant.

Final EIR

This section identifies impacts of the proposed project determined to be less than significant without implementation of project-specific mitigation measures. This determination, however, does assume compliance with Existing Regulations as detailed in Chapter 5 of the FEIR.

1. Aesthetics

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.1-1:** Buildout of the proposed project would not substantially degrade the existing visual character or quality of the project area. [Threshold AE-3]

Each zoning district has specific development standards, general development standards are also included in the Specific Plan that regulate outside storage, interim and temporary uses, utilities, mechanical equipment, roof-mounted solar collector panels, antennae and satellite dishes, and refuse collection facilities.

Further, urban design standards in Section 3.6 of the Specific Plan provide a comprehensive approach to high quality design for the physical design of the West Carson TOD Specific Plan area. The design guidelines foster innovative design features and site-appropriate architecture that is constructed with quality materials and complemented by landscape, open spaces, and connectivity between uses.

Overall, development in accordance with the Specific Plan would not degrade the existing visual character of the highly urbanized West Carson community. Existing and new buildings would be designed based on the Specific Plan's urban design guidelines and include architectural and landscaping details that complement and enhance the overall quality of the community.

- **Impact 5.1-2:** The West Carson TOD Specific Plan would generate additional light and glare. [Threshold AE-4]

Buildout of the proposed project would alter and intensify land uses and their related lighting sources throughout the West Carson TOD Specific Plan area by introducing new building (interior and exterior), security, sign, street, and parking lights. In addition to necessary lighting for safety and security, the project would also introduce aesthetic lighting, such as illumination of areas within the Carson Street and Vermont Avenue mixed-use corridors for architectural and façade detailing.

The West Carson TOD Specific Plan includes development standards related to lighting and building materials that would reduce light and glare impacts generated by the project. In general, all outdoor lighting systems, including architectural lighting, shall not aim directly at the open sky or project off-site or onto adjacent uses. Blinking, flashing, and oscillating lights are prohibited, and warm white lights should be used where possible. Colored lights should be avoided and shall only be used if they are part of a comprehensive architectural lighting theme of commercial areas or establishments. And all parking structures must screen night lighting to avoid uplighting, spillover, and glare on nearby properties.

Overall, development in accordance with the Specific Plan would introduce new sources of light and glare. However, the project area is highly urbanized; new light and glare associated with the Specific Plan would be typical of the surrounding area and would not increase beyond what is expected for an urban, transit-oriented community. Adherence to the Specific Plan guidelines, County Code and California Building Energy Efficiency Standards would reduce project-generated lighting and glare impacts to less than significant levels.

2. Air Quality

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the

Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- Impact 5.2-5 Operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-4]

  Certain types of land uses have the potential to generate substantial stationary and area sources of emissions. Land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from SCAQMD include industrial land uses, such as chemical processing facilities, dry cleaners, and gasoline-dispensing facilities. The Specific Plan's Industrial Flex District is intended to transition the West Carson area from traditional, small-scale light industrial uses to a broader range of uses to serve the community, including service commercial uses, professional and medical office, and multifamily residential. Consequently, the West Carson TOD Specific Plan would generally not result in an increase in industrial land uses that would generate substantial stationary or area sources of emissions.

  Areas of vehicle congestion have the potential to create pockets of carbon monoxide (CO) called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9.0 ppm. In 2007, the SCAQMD was designated in attainment for CO under both the California AAQS and National AAQS.[1] Furthermore, project trip generation (from the whole site) would be 29,488 trips per day, well below traffic volumes that would generate a significant CO hotspot. Impacts would be less than significant.

- Impact 5.2-6 The proposed project would not create objectionable odors. [Threshold AQ-5**]**

  The proposed project would not emit objectionable odors that would affect a substantial number of people. Odors generated by new nonresidential land uses are not expected to be significant or highly objectionable. New industrial uses would be required to be in compliance with SCAQMD Rule 402. Likewise, existing facilities are required to be in compliance with SCAQMD Rule 402 to prevent nuisances on sensitive land uses. Therefore, impacts related to objectionable odors would be less than significant.

3. Geology and Soils

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

---

[1] *As identified in SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide, peak carbon monoxide concentrations in the SoCAB were the result of unusual meteorological and topographical conditions and not of congestion at a particular intersection.*

- **Impact 5.4-1:** Implementation of the Specific Plan would not substantially exacerbate liquefaction or lateral spreading hazards onsite. [Threshold G-1.iii and G-3(part)]

  The northern edge of the project site is in a Zone of Required Investigation for Liquefaction mapped by the California Geological Survey (CGS 1999). Development in an area susceptible to liquefaction could exacerbate liquefaction hazard by introducing irrigation into the area. The affected portion of the project site is built out with residential and commercial land uses; thus, Specific Plan buildout would not involve development of vacant land in that area. The Specific Plan would not change permitted land uses on the affected part of the site. Thus, Specific Plan implementation would not involve land use changes in the Zone of Required Investigation for Liquefaction that could substantially increase liquefaction hazard in that area. Further, future developments in accordance with the Specific Plan would be required to adhere to the Los Angeles County Building Code, CBC, and IBC. According to regulatory requirement RR GEO-1, future projects are required to prepare a geotechnical investigation to evaluate soil classification, stability, strength, and the effect of moisture variation on soil-bearing capacity, liquefaction, and expansiveness. Recommendations in the geotechnical investigation must be incorporated into the design and construction of the project. Impacts would be less than significant after implementation of regulatory requirement RR GEO-1.

- **Impact 5.4-2:** Specific Plan buildout could cause soil erosion or loss of topsoil. [Threshold G-2]

  Construction

  Construction activities in accordance with the Specific Plan would disturb and expose large amounts of soils susceptible to erosion impact. However, reduction of the erosion potential can be accomplished through compliance with RR HYD-1 requiring a Storm Water Pollution Prevention Plan (SWPPP), which specifies best management practices for temporary erosion controls. Impacts would be less than significant after preparation and implementation of SWPPPs by projects developed or redeveloped under the Specific Plan.

  Operation

  Project applicants are also required to submit a low impact development (LID) plan for review and approval by LA County Public Works pursuant to the Los Angeles County LID Standards Manual. The use of LID BMPs in project planning and design is intended to preserve a site's predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration, evapotranspiration, and runoff detention. LID BMPs try to offset these losses by introducing structural and nonstructural design components into the project's land plan that restore these water quality functions. LID BMPs and treatment control BMPs are designed to retain, filter, or treat part of the runoff from a project site. Impacts would be less than significant after compliance with the LID Standards Manual.

- **Impact 5.4-3:** Specific Plan buildout would not substantially aggravate hazards from subsidence or collapsible soils. [Threshold G-3 (part)]

Collapsible soils rapidly consolidate under wetting, generating large and often unexpected settlements. Ground subsidence is generally related to substantial overdraft of groundwater or petroleum reserves. Native soils at the Harbor-UCLA Medical Center may be collapsible. Fill soils on the sites of existing or historic developments could also be collapsible (DPW 2016). Potential subsidence in the project area is considered low (DWR 2017, 2016). Projects developed under the Specific Plan would have geotechnical investigations of their respective project sites conducted in accordance with regulatory requirement GEO-1, the CBC, and Los Angeles County Building Code. Those projects would be designed and built in accordance with recommendations in the pertinent geotechnical investigation reports. Impacts would be less than significant after implementation of RR GEO-1.

- **Impact 5.4-4**: Specific Plan buildout would not substantially exacerbate hazards from expansive soils. [Threshold G-4]

Highly expansive soils swell when they absorb water and shrink as they dry and can damage building foundations and roads. Most of the soils on the project site are loamy clay, and thus could be expansive. Impacts would be less than significant after preparation of geotechnical investigations, and compliance with recommendations of geotechnical investigation reports, for each project, as mandated by regulatory requirement GEO-1.

4. Greenhouse Gas Emissions

Finding: The Proposed Project would have no or less than significant direct, indirect, and cumulative impacts on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.5-2:** The proposed project would not conflict with the plans adopted for the purpose of reducing GHG emissions. [Threshold GHG 2]

As identified in Section 5.14, *Transportation and Traffic*, implementation of West Carson TOD Specific Plan would result in a decrease in annual vehicle miles traveled (VMT) per service population from 134,863 VMT/service population/year (VMT/SP/Yr) to 100,336 VMT/SP/Yr, which is consistent with regional goals to reduce passenger VMT. Therefore, the proposed project would not interfere with the Southern California Association of Governments (SCAG)'s ability to implement the regional strategies outlined in the SCAG 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). No impact would occur and no mitigation measures are required.

The County adopted a Climate Change Action Plan (CCAP) on October 6, 2015. A consistency analysis with the proposed project to the applicable measures in the CCAP is shown in DEIR Table 5.5-9, *Consistency with the Unincorporated Los Angeles County Community Climate Action Plan*. As identified in the table, the proposed project would be consistent with the measures in the CCAP. Therefore, the proposed project would not conflict with the CCAP and impacts are considered less than significant.

5. Hazards and Hazardous Materials

Finding. The Proposed Project would have no or less than significant direct, indirect, and cumulative impacts on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.6-1:** Project construction and operations would involve the transport, use, and/or disposal of hazardous materials. [Thresholds H-1 (part), H-2 (part), and H-3]

  Demolition and construction activities would require transport, use, and disposal of hazardous materials. However, the County is required to comply with existing regulations to during construction and operation to ensure that impacts are reduced to a less than significant level. The required implementation of RR HAZ-1 through RR HAZ-5 would adequately control and handle hazardous materials during construction and operation so that release and exposure do not result in significant safety impacts to the environment.

- **Impact 5.6-4:** One heliport is in the Specific Plan area in the Harbor-UCLA Medical Center campus. [Threshold H-6]

  One heliport is in the Specific Plan area atop the 2 South building in the east-central part of the Harbor-UCLA Medical Center campus. No other heliports are within one mile of the project site (Airnav.com 2016). Specific Plan implementation could involve relocation of the heliport, as the 2 South building is slated for demolition in the Harbor-UCLA Medical Center Master Plan.

  Development within the Harbor-UCLA Medical Center campus in accordance with the Specific Plan would require the medical center staff responsible for safety and security to review any proposed new locations for the heliport and building heights near that location to identify safe approach and departure routes for helicopters. Specific Plan buildout would not cause substantial hazards to people onsite, and impacts would be less than significant.

  County regulatory requirement RR HAZ-6 requires all projects to be designed and constructed in accordance with Federal Aviation Regulations (FAR) Part 77 for preventing obstructions to air navigation.

- **Impact 5.6-5:** Project development could affect the implementation of an emergency responder or evacuation plan. [Threshold H-7]

  Specific Plan buildout would involve construction activities and construction traffic that could impede emergency access to the project site and surrounding neighborhoods. Many construction projects are required to submit construction traffic management plans to the Los Angeles County Public Works Traffic and Lighting Division for review and approval. The Traffic and Lighting Division would require that any construction activities do not block emergency access to Harbor-UCLA Medical Center or surrounding neighborhoods.

Harbor-UCLA Medical Center is one of five Level I trauma centers in Los Angeles County. Specific Plan buildout would permit development of up to 2.7 million square feet of nonresidential development, which may include health care, research, medical office, transitional housing, and incidental retail uses. Thus, Specific Plan buildout would have some favorable impact on emergency response capacity in southern Los Angeles County.

6. Hydrology and Water Quality

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.7-1:** Development pursuant to the proposed project would be subject to the County's Low Impact Development (LID) Ordinance and would therefore minimize or reduce surface water flows into drainage systems in the watershed. [Thresholds HYD-4 and HYD-6 (part)]

Each development or redevelopment project under the Specific Plan would be required to have site-specific hydrology and hydraulic studies to determine capacity of the existing storm drain systems and project impacts on such systems prior to approval by the Los Angeles County Department of Public Works. Each project would be required to comply with site-specific "allowable discharge rates," as identified by the Department of Public Works, that limit peak flow discharges compared to existing conditions, thus minimizing potential for flooding on- or off-site.

As required by regulatory requirement RR HYD-2, future projects in accordance with the Specific Plan must be constructed and operated in accordance with the Los Angeles County MS4 Permit (Order No. R4-2012-0175), as amended by Order WQ 2015-0075. The MS4 Permit requires new development and redevelopment projects to retain on-site a specified volume of stormwater runoff from a design storm event. The LID Standards Manual provides guidance on how new development and redevelopment projects can meet these on-site retention requirements through the use of stormwater quality control measures. Impacts would be less than significant upon implementation of regulatory requirement RR HYD-2.

- **Impact 5.7-2:** Development pursuant to the proposed project is not expected to substantially increase the amount of impervious surfaces on the site and therefore would not substantially reduce groundwater recharge. [Threshold HYD-2]

Only three parcels totaling approximately 0.75 acres are vacant in the Specific Plan area; the remaining project area is built out with urban land uses. Therefore, redevelopment in the Specific Plan area would not substantially increase the amount of impervious surfaces onsite. The amount of impervious surfaces would likely be similar at full buildout and thus is not expected to reduce groundwater recharge on- or off-site. Impacts would be less than significant.

- **Impact 5.7-3:** Construction and operation of projects in accordance with the Specific Plan would not adversely impact water quality and contribute pollutant sources to the stormwater drainage system. [Thresholds HYD-1, HYD-3, HYD-6 (part), HYD-7, HYD-8, and HYD-11]

  Urban runoff resulting from storms or nuisance flows (runoff during dry periods) from development projects can carry pollutants to receiving waters. Runoff can contain pollutants such as oil, fertilizers, pesticides, trash, soil, and animal waste. This runoff can flow directly into local streams or lakes or into storm drains and released untreated into a local waterway and eventually the ocean.

  Construction projects of one acre or more would prepare and implement a Stormwater Pollution Protection Plan (SWPPP) specifying best management practices (BMPs) to be implemented during project construction.

  Project applicants are required under regulatory requirement RR HYD-2 and the County's LID Standards Manual to submit an LID plan for review and approval by the Los Angeles County Department of Public Works and to implement the LID plan during project design and operations (see discussion of Impact 5.7-1 above). Impacts would be less than significant Upon implementation of regulatory requirements RR HYD-1 and RR HYD-2.

7. Land Use and Planning

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.8-1:** The West Carson TOD Specific Plan would not conflict with any applicable land use plans. [Threshold LU-2]

  The proposed project would be consistent with the applicable Southern California Association of Governments 2016 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) goals. Therefore, implementation of the proposed project would not result in significant land use impacts related to relevant RTP/SCS goals.

8. Noise

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.9-2:** Project implementation would result in long-term operation-related noise that would not exceed local standards. [Thresholds N-1 and N-3]

A significant impact would occur if the project would result in an increase of traffic noise levels of 5 dBA if their resultant noise level were to remain within the objectives of the General Plan (e.g., 60 dBA CNEL at single-family residential, 65 dBA CNEL at multifamily residential) or with an increase of 3 dBA if the resultant level were to meet or exceed the objectives of the General Plan.

Traffic noise increases resulting from the project contribution would range from 0.0 to 2.1 dBA CNEL, and overall increases due to both the project and regional growth would range from 0.5 to 2.4 dBA CNEL. No segments would experience substantial noise increases greater than 3 dBA over existing conditions. Therefore, impacts would be less than significant and no mitigation measures are necessary.

The primary noise sources from land uses that would be developed under the Specific Plan are landscaping and maintenance activities, HVAC systems, mechanical equipment, and loading docks. Noise generated by residential, commercial, or light industrial uses is generally short and intermittent, and these uses are not a substantial source of noise. Additionally, the County of Los Angeles regulates noise produced by HVAC units, landscape maintenance, and loading activities in Section 12.08.390 of the County Code. The County's noise ordinances are based on the receiving land use and protect noise-sensitive uses regardless of neighboring uses. Thus, stationary-source noise from these types of proposed land uses would not substantially increase the noise environment. Therefore, project-related noise impacts from stationary sources would be less than significant.

9. Population and Housing

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.10-1:** The proposed project would directly result in population growth in the project area. [Thresholds P-1 and P-4]

Estimates of population, housing, and employment generation by Specific Plan buildout are all within corresponding forecasts for unincorporated areas of the South Bay Subregion of Los Angeles County. Specific Plan buildout would not impact the jobs-housing balance in the South Bay Subregion. Impacts would be less than significant.

10. Public Services

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.11-2:** The proposed project would introduce approximately 2,270 additional homes, 5,961 additional residents, and 1.7 million additional square feet of nonresidential uses into the Los Angeles County Sheriff Department's service boundaries, thereby increasing the requirement for police protection facilities and personnel. [Threshold PP-1]

  Project buildout would involve development of a net increase of about 2,270 homes that would house about 5,961 residents and development of a net increase of up to about 1.7 million square feet of nonresidential building area and approximately 3,054 workers. Thus, project buildout would cause an increase in demands for law enforcement services. Buildout is expected to cause increased numbers of service calls, a rise in crime, additional vehicle collisions, and increased response times.

  The Sheriff's Department would need six additional full-time deputies and three additional patrol vehicles to maintain the generally-accepted law enforcement service ratio objective of one deputy per 1,000 residents. In addition, Captain Jason Skeen of the Carson Station has expressed interest in adding one additional 56-hour patrol unit—that is, 1.6 full-time deputies—to the existing unincorporated patrol areas due to increasing calls for service, crime, and population growth. Such increase in staffing would require acquisition of one additional patrol vehicle.

  Operational funding for the LASD is derived from various types of tax revenue (property taxes, sales taxes, user taxes, vehicle license fees, deed transfer fees, etc.). As future development occurs, tax revenues from property and sales taxes would be generated and deposited in the County's General Fund and the State Treasury. A portion of these revenues would be allocated to the LASD to maintain staffing and equipment levels to adequately serve project-related increases in service-call demands.

- **Impact 5.11-3**: The proposed project would generate new students who would impact the school enrollment capacities of area schools. [Threshold SS-1]

  Project buildout is estimated to generate a net increase of about 891 students consisting of 437 elementary school students, 188 middle school students, and 265 high school students, based on student generation factors for LAUSD. The middle schools and high schools serving the project site have sufficient residual capacity for estimated project student generation. The three elementary schools serving the project site have total residual capacity for 131 students, less than the estimated project student generation of 437 students.

  Projects developed under the Specific Plan would pay SB 50 school impact fees to the LAUSD; such fees are defined as full and complete mitigation for the impact of development projects on school facilities.

- **Impact 5.11-4:** The proposed project would introduce up to 5,961 additional residents in West Carson and would increase demand on local libraries. [Threshold LS-1]

  Specific Plan buildout would add about 5,961 residents to the project site, thus increasing demand for library services in the service area of Public Library's Carson Library. The Carson

Library currently has deficits of over 230,000 collection items and over 23,500 square feet of building area compared to service level guidelines for its service population. Thus, additional service demands caused by Specific Plan buildout would intensify the deficits. Approximately $3.84 million would be needed to provide resources to serve project residents. The Public Library plans to renovate the Carson Library without expanding the facility. Residential projects developed under the Specific Plan would pay library facilities mitigation fees to Los Angeles County. Use of such fees by Public Library for construction of new and/or expanded library facilities would reduce project impacts on library facilities. In addition, the City of Carson is planning to adopt development impact fees for new developments; some such fees may be used for construction of library facilities.

11. Recreation

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.12-1:** The proposed project would generate additional residents that would increase the use of existing park and recreational facilities. [Threshold R-1]

  Specific Plan buildout would involve development of a net increase of up to 2,271 residential units, all of which would be multifamily units. Specific Plan buildout would require dedication of approximately 15.0 acres of parkland and/or payment of in-lieu fees, based on the standard of 0.00660 acres per unit for multifamily developments with 5 or more units set forth in County Ordinance Section 21.24.340. The Specific Plan identifies five locations that could be developed into pocket parks; the five parks, if developed, would total a few acres, a small fraction of the required 15.0 acres. As West Carson is almost entirely built out, it is expected that residential developments in accordance with the Specific Plan would likely be required to pay in-lieu fees rather than dedicate parkland. Payment of in-lieu fees would provide a funding mechanism to the County in order to acquire new parkland or rehabilitate existing parks and recreational facilities to serve the community. Thus, impacts would be reduced to less than significant.

- **Impact 5.12-2:** Project implementation would result in environmental impacts to provide new and/or expanded recreational facilities. [Threshold R-2]

  The Specific Plan identifies five locations that could be developed into pocket parks. Impacts of development of the potential parks are analyzed together as part of the impacts of the whole West Carson TOD Specific Plan throughout Chapter 5 of this DEIR. No other significant impact would occur.

12. Transportation and Traffic

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts

under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.13-4:** Project-related trip generation in combination with existing and proposed cumulative development would result in designated road and/or highways exceeding county congestion management agency service standards. [Threshold T-2]

  The Congestion Management Program (CMP) traffic impact analysis guidelines establish that a significant Proposed Project impact occurs when a certain threshold is exceeded. If the Proposed Project increases traffic demand on a CMP facility by 2 percent of capacity ($V/C \geq 0.02$), causing LOS F ($V/C > 1.00$), a significant impact would occur. If the facility is already at LOS F, a significant impact occurs when the Proposed Project increases traffic demand on a CMP facility by 2 percent of capacity ($V/C \geq 0.02$). The project would not cause a significant traffic impact at CMP intersections in either existing plus project or future year plus project conditions (see analysis in DEIR Section 5.13).

- **Impact 5.13-5:** The project would increase total VMT but would result in and decrease in VMT per capita. [Threshold T-1]

  The Specific Plan facilitates implementation of the goals and policies of the County of Los Angeles 2035 General Plan (General Plan), including the vision for the TOD priority areas. The project would increase the total VMT but would result in a decrease in VMT per capita (see analysis in DEIR Section 5.13).

- **Impact 5.13-6** The project would not affect air travel or result in substantial safety risks. [Threshold T-3]

  The project site is not in an airport influence area, or near a public-use or private airport, identified in the *Los Angeles County Airport Land Use Plan* revised by the Los Angeles County Airport Land Use Commission in 2004. No airport-related impacts would occur.

13. Utilities and Service Systems

Finding: The Proposed Project would have a less than significant direct, indirect, and cumulative impact on the below listed thresholds of significance. Accordingly, no changes or alterations to the Proposed Project were required to avoid or substantially lessen any significant environmental impacts under those thresholds. The Final EIR evaluated the following impacts and found that no mitigation was required for the identified reasons:

- **Impact 5.15-3:** Existing storm drainage systems in the Specific Plan area are adequate to serve the drainage requirements of the proposed project. [Threshold U-3]

  Nearly the entire Specific Plan area is built out with structures, homes, parking lots, streets and sidewalks, and other impervious surfaces. Therefore, development in accordance with the Specific Plan would not substantially increase impervious surfaces beyond existing conditions.

For example, existing housing units with lots would retain pervious surface properties and would not require any additional collection basins, and current locations with impervious surfaces would continue to drain with the same infrastructure in place. No additional stormwater collection or transportation infrastructure is needed. Further, as required under RR HYD-2, individual projects would be required to implement LID BMPs in accordance with the MS4 Permit and the Los Angeles County LID Standards Manual. Adherence to RR USS-2 would ensure future project's storm drain improvements are designed, constructed, and operated in accordance with the applicable regulations in the Los Angeles County Code.

- **Impact 5.15-4:** Existing solid waste facilities would be able to accommodate project-generated solid waste and comply with related solid waste regulations. [Thresholds U-6 and U-7]

Solid waste generation onsite at Specific Plan buildout is forecast to be approximately 43,463 pounds per day, a net increase of approximately 21,514 pounds per day (or about 10.8 tons per day). The two landfills and one transformation facility serving West Carson have residual capacity of over 13,000 tons per day. Thus, there is sufficient solid waste disposal and transformation capacity in the region for project-generated solid waste, and impacts would be less than significant.

Projects developed under the Specific Plan would comply with laws and regulations requiring recycling and/or salvaging of construction and demolition debris; and recycling by commercial and multifamily residential projects.

- **Impact 5.15-5** Southern California Edison and the Southern California Gas Company could supply project electricity and natural gas demands, respectively, from their forecast energy supplies, and Specific Plan energy demands would not require either provider to obtain new or expanded energy supplies.

Specific Plan buildout is expected to generate a net increase in electricity demands of about 37.6 million kWh/yr. The net increase in electricity demands due to project buildout is within the forecast net increase in Southern California Edison (SCE)'s total electricity consumption between 2016 and 2025; thus, SCE would not need to obtain new or expanded electricity supplies to meet estimated project electricity demands.

The net increase in natural gas demands due to project buildout is estimated at about 39.3 million kBTU per year. The estimated net increase in natural gas demands is within the Southern California Gas Company (SCGC)'s forecast total residual natural gas supplies in 2035 (that is, supplies less demands) of approximately 1.493 billion cubic feet per day (bcfd). Therefore, SCGC would not need to obtain new or expanded natural gas supplies to meet project natural gas demands, and impacts would be less than significant.

B. IMPACTS MITIGATED TO LESS THAN SIGNIFICANT

The County finds that the following environmental impacts can and will be mitigated to below a level of significance based upon the implementation of the mitigation measures in the Final EIR. These findings are based on the discussion of impacts in the detailed issue area analyses and cumulative impacts in Section 5, Environmental Analysis of the Draft EIR. An explanation of the rationale for each finding is presented below.

1. Cultural Resources

- **Impact 5.3-1:** Development of the project could impact an identified historic resource. [Threshold C 1]

  The project area is sensitive for the presence of historic built environments (standing structures) that predate 1965. The cultural resources study identified a number of structures that have the potential to be historically significant, including eight pre-1930 residential properties, three commercial buildings on Carson Street, and the World War II medical complex on the site of the Harbor-UCLA Medical Center. Future projects in accordance with the Specific Plan that involve these properties would require a formal assessment of the resources.

Mitigation Measures

Implementation of Mitigation Measure CUL-1 would reduce impacts to historical resources to less than significant levels.

CUL-1 As a condition of approval, future development or redevelopment projects on any of the properties listed in Table 5.3-1, *Potentially Historic Properties in the Specific Plan Area*, of the West Carson TOD Specific Plan EIR (SCH No. 2017011010) that may involve a substantial adverse change as defined by Public Resources Code 5020.1 shall require the following of the property owner or project applicant/developer:

- Preparation of an intensive-level historical evaluation of the subject property. The evaluation shall be conducted in accordance with all applicable federal, state, and local guidelines for evaluating historical resources. Recommendations for preservation should be considered, if applicable. The historical evaluation shall be submitted to the County of Los Angeles Department of Regional Planning for review and approval.

- Preparation of a Phase I cultural resources investigation that complies with current standards and guidelines for any properties not previously improved (e.g., open space or native soils).

Finding

The County finds that changes or alterations have been incorporated into the Project that mitigate potentially significant direct, indirect, and cumulative impacts on the environment, as identified in the Final EIR. The County based on the Final EIR and the whole of the record that Mitigation Measure MM CUL-1 is feasible and finds that these mitigation measures will reduce the impacts related to

cultural resources to a less than significant level. [Pub. Res. Code §21081(a)(1); Guidelines § 15091(1)]

- **Impact 5.3-2:** Development of the project could impact archaeological resources. [Threshold C-2]

  The Specific Plan area is mostly built out, and the reconnaissance survey did not find any evidence of archaeological resources. Nonetheless, there is always potential for buried archaeological resources to be uncovered during excavation activities. Therefore, the project area is considered to have moderate sensitivity for buried archaeological resources.

  Future projects in accordance with the Specific Plan could uncover previously undiscovered archaeological resources during grading activities.

Mitigation Measure

Implementation of Mitigation Measure CUL-2 would reduce impacts to archaeological resources to less than significant levels.

CUL-2 As a condition of approval for projects involving subterranean levels and/or parking, future project applicants/developers shall provide written evidence to the County of Los Angles that a County-certified archaeologist has been retained to observe grading activities greater than six feet in depth and salvage and catalogue archaeological resources as necessary. The archaeologist shall be present at the pre-grade conference; shall establish procedures for archaeological resource surveillance; and shall establish, in cooperation with the applicant, procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts as appropriate.

If the archaeological resources are found to be significant, the archaeological monitor shall determine appropriate actions, in cooperation with the project applicant/developer, for exploration and/or salvage. The archaeologist shall prepare a comprehensive report including appropriate records for the California Department of Parks and Recreation (Building, Structure, and Object Record; Archaeological Site Record; or District Record, as applicable). If any resources are excavated, the project applicant/developer shall prepare excavated material to the point of identification.

Future applicants/developers shall offer excavated finds for curatorial purposes to the County of Los Angeles, or its designee, on a first refusal basis. These actions, as well as final mitigation and disposition of the resources, shall be subject to the approval of the County. The project applicant/developer shall pay curatorial fees if an applicable fee program has been adopted by the Board of Supervisors, and such fee program is in effect at the time of presentation of the materials to the County or its designee, all in a manner meeting the approval of the County.

Finding

The County finds that changes or alterations have been incorporated into the Project that mitigate potentially significant direct, indirect, and cumulative impacts on the environment, as identified in the Final EIR. The County based on the Final EIR and the whole of the record that Mitigation Measure MM CUL-2 is feasible and finds that these mitigation measures will reduce the impacts related to cultural resources to a less than significant level. [Pub. Res. Code §21081(a)(1); Guidelines § 15091(1)]

- **Impact 5.3-3:** The proposed project could adversely impact paleontological resources or unique geologic features. [Threshold C-3]

  The project area is moderately sensitive for paleontological resources based on findings in the general vicinity and the nature of the soils in the project area. Deeper excavations may impact older Quaternary alluvium, which is associated with fossil specimens.

Mitigation Measure

Implementation of Mitigation Measure CUL-3 would reduce impacts to paleontological resources to less than significant levels.

CUL-3 As a condition of approval for projects involving subterranean levels and/or parking, the future project applicant/developer shall retain a qualified paleontologist to monitor grading activities greater than six feet in depth. Deep excavations may impact undisturbed deposits in older Quaternary alluvium, which is typically associated with fossils. The qualified paleontologist shall be present during the pre-grading meeting to discuss paleontological sensitivity and to assess whether scientifically important fossils have the potential to be encountered. The paleontologist shall determine, based on consultation with the County, when monitoring of grading activities is needed based on the onsite soils and final grading plans.

All paleontological work to assess and/or recover a potential resource at the project site shall be conducted under the direction of the qualified paleontologist and follow the standard protocols of the Natural History Museum of Los Angeles County. If any fossil remains are uncovered during earth-moving activities, all heavy equipment shall be diverted at least 50 feet from the fossil site until the monitor has had an opportunity to examine the remains and determines that earth-moving can resume. The extent of land area that is prohibited from disturbance shall be at the discretion of the paleontological monitor. Samples of older Quaternary alluvium shall be collected as necessary for processing and shall be examined for very small vertebrate fossils. The paleontologist shall prepare a report of the results of any findings following accepted professional practice and submit the report for review by the County of Los Angeles Department of Regional Planning.

Finding

The County finds that changes or alterations have been incorporated into the Project that mitigate potentially significant direct, indirect, and cumulative impacts on the environment, as identified in the Final EIR. The County based on the Final EIR and the whole of the record that Mitigation Measure MM CUL-3 is feasible and finds that these mitigation measures will reduce the impacts related to cultural resources to a less than significant level. [Pub. Res. Code §21081(a)(1); Guidelines § 15091(1)]

2. Hazards and Hazardous Materials

- **Impact 5.6-2:** Demolition of existing buildings could expose people to asbestos-containing materials and/or lead-based paint. [Thresholds H-1 (part), H-2 (part)]

  Since much of the site was built out by 1963, asbestos-containing materials could be present in some buildings onsite. Structures built before 1978 are presumed to contain lead-based paint. Demolition of buildings has the potential to expose and disturb asbestos containing materials (ACMs) and lead-based paint (LBP). Demolition can cause encapsulated ACMs (if present) to become friable (that is, can be pulverized by hand) and, once airborne, they are considered a carcinogen. Demolition of the existing buildings and structures can also release lead into the air if LBP is not properly removed and handled. The EPA has classified lead and inorganic lead compounds as "probable human carcinogens" (USEPA 2015). Such releases could pose significant risks to persons living and working in and around project site as well as to project construction workers.

Mitigation Measure

Implementation of Mitigation Measure HAZ-1 would reduce hazards related to asbestos-containing materials and lead-based paint to less than significant levels.

HAZ-1 In the event that building materials are encountered during demolition activities that are suspected of being asbestos-containing materials (ACMs), these materials shall be assumed to contain asbestos and shall be handled, removed, transported, and/or disposed of in accordance with applicable ACM regulations. Any required removal of asbestos shall be made under the direction of a Cal/OSHA-certified asbestos consultant.

Finding

The County finds that changes or alterations have been incorporated into the Project that mitigate potentially significant direct, indirect, and cumulative impacts on the environment, as identified in the Final EIR. The County based on the Final EIR and the whole of the record that Mitigation Measure MM HAZ-1 is feasible and finds that these mitigation measures will reduce the impacts related to hazards and hazardous materials to a less than significant level. [Pub. Res. Code §21081(a)(1); Guidelines § 15091(1)]

- **Impact 5.6-3:** Several properties within the Specific Plan area are listed on hazardous materials databases. [Threshold H-4]

  There are 77 hazardous materials sites within the Specific Plan area. Four of those sites – two listed on the California Hazardous Materials Incident Reporting System (CHMIRS), one LUST site, and one Emergency Response Notification System (ERNS) site – document past hazardous materials releases. All past releases are known to regulatory agencies. The two releases listed on CHMRIS were contained and cleaned up, and the LUST case was closed in 1996.

  However, redevelopment of individual properties within the Specific Plan area could have unknown recognized environmental conditions related to soils, groundwater, and vapors/gases. Thus, development in accordance with the Specific Plan could create a significant hazard to the public or the environment.

Mitigation Measure

Implementation of Mitigation Measure HAZ-2 would reduce hazards related to hazardous materials sites to less than significant levels.

HAZ-2 As a condition of approval for individual development projects on former or existing commercial or industrial sites, the project applicant shall prepare and submit a Phase I Environmental Site Assessment (ESA) to the County of Los Angeles to identify environmental conditions of the development site and determine whether contamination is present. The Phase I ESA shall be prepared by an Environmental Professional in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527.13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." If recognized environmental conditions related to soils or groundwater are identified in the Phase I ESA, the project applicant shall have soil and soil gas sampling performed, as required, as a part of a Phase II ESA. If contamination is found at significant levels, the project applicant shall remediate all contaminated soils in accordance with state and local agency requirements and with the oversight of the California Department of Toxic Substances Control, Regional Water Quality Control Board, Los Angeles County Fire Department, etc. All contaminated soils and/or material encountered shall be disposed of at a regulated site and in accordance with applicable laws and regulations prior to the completion of grading.

Each Phase I ESA conducted for projects that involve demolition activities shall include an inspection for lead-based paint conducted by a licensed or certified lead inspector/assessor and a survey for asbestos-containing materials conducted by a California Certified Asbestos Consultant.

Prior to the issuance of building permits, a report documenting the completion, results, and follow-up remediation on the recommendations, if any, shall be provided to the Los Angeles County Department of Regional Planning evidencing that all site remediation activities have been completed.

Finding

The County finds that changes or alterations have been incorporated into the Project that mitigate potentially significant direct, indirect, and cumulative impacts on the environment, as identified in the Final EIR. The County based on the Final EIR and the whole of the record that Mitigation Measure MM HAZ-1 is feasible and finds that these mitigation measures will reduce the impacts related to hazards and hazardous materials to a less than significant level. [Pub. Res. Code §21081(a)(1); Guidelines § 15091(1)]

3. Noise

- **Impact 5.9-3:** The project would create short-term and long-term groundborne vibration and groundborne noise. [Threshold N-2]

Vibration generated by construction equipment has the potential to be substantial, since it has the potential to exceed the Federal Transit Administration (FTA) criteria of 78 vibration decibels (VdB) for human annoyance and 0.200 in/sec for structural damage. However, groundborne vibration is almost never annoying to people who are outdoors, so it is usually evaluated in terms of indoor receivers (FTA 2006). Construction details and equipment for individual development projects are not known at this time. As such, vibration impacts may occur from construction equipment associated with development of the proposed project and construction vibration impacts are considered potentially significant.

Vibration from truck trips generated by construction and operation of projects developed under the Specific Plan would be less than significant impacts. "vibrations measured on freeway shoulders (five meters from the centerline of the nearest lane) have never exceeded 0.08 inches per second, with the worst combinations of heavy trucks. This level coincides with the maximum recommended safe level for ruins and ancient monuments (and historic buildings) (Caltrans 2002)."

Light industrial and commercial operations can possibly generate varying degrees of ground vibration, depending on the operational procedures and equipment. The County of Los Angeles Code, Section 12.08.560, prohibits the operation of any device that creates vibration that is above 0.01 in/sec at or beyond the property boundary of the source, if on private property, or at 150 feet from the source, if on a public space or public right-of-way. Projects developed under the Specific Plan would comply with that Code section, and impacts would be less than significant.

Mitigation Measure

Implementation of Mitigation Measure N-3 would reduce vibration impacts to less than significant levels.

N-3 Prior to issuance of grading and construction permits, applicants for individual development projects that involve vibration-intensive construction activities—such as pile drivers, jack hammers, and vibratory rollers—within 100 feet of off-site,

vibration-sensitive receptors and/or structures,[2] shall prepare and submit to the County of Los Angeles an acoustical study to evaluate potential construction-related vibration damage impacts. The vibration assessment shall be prepared by a qualified acoustical engineer and be based on the Federal Transit Administration (FTA) vibration-induced architectural damage criterion AND vibration annoyance effects. If the acoustical study determines a potential exceedance of the FTA thresholds, measures shall be identified that ensure vibration levels are reduced to below the thresholds. Measures to reduce vibration levels can include use of less-vibration-intensive equipment (e.g., drilled piles and static rollers) and/or construction techniques (e.g., nonexplosive rock blasting and use of hand tools) and preparation of a preconstruction survey report to assess the preconstruction, existing conditions of the potentially affected sensitive receptor or structure. Identified measures shall be included on all construction and building documents and submitted for verification to the County.

Finding

The County finds that changes or alterations have been incorporated into the Project that mitigate potentially significant direct, indirect, and cumulative impacts on the environment, as identified in the Final EIR. The County based on the Final EIR and the whole of the record that Mitigation Measure MM N-3 is feasible and finds that these mitigation measures will reduce noise impacts to a less than significant level. [Pub. Res. Code §21081(a)(1); Guidelines § 15091(1)]

4. Public Services

- **Impact 5.11-1:** The proposed project would introduce approximately 2,271 additional homes, 5,961 additional residents, and 1.7 million additional square feet of nonresidential uses into the Los Angeles County Fire Department's service boundaries, thereby increasing the requirement for fire protection facilities and personnel. [Threshold FP-1]

Buildout of the West Carson TOD Specific Plan would increase demand on fire protection and emergency services in West Carson. The increase in residential and nonresidential development is expected to create the typical range of fire and emergency service calls and may lead to the need for new or expanded fire stations, additional equipment, and additional personnel in order to maintain adequate response times.

However, the anticipated increase in development would also increase LACoFD's operational budget, which is mostly funded by property tax and charges for services.

Additionally, during the County's development review and permitting process, LACoFD would review and approve individual development projects to ensure that adequate facilities, infrastructure, and access are provided to serve the needs of LACoFD. Specific fire and life-safety requirements for the construction phase of future development projects that would be

[2] *Vibration-sensitive receptors would include, for example, residences, schools, medical facilities, and houses of worship. Vibration-sensitive structures would include, for example, historical buildings, audio/video recording studios,*

accommodated under the West Carson TOD Specific Plan would be addressed at the building and fire plan check review stage for each development project.

All development projects would also be required to comply with the most current adopted fire codes, building codes, and nationally recognized fire and life safety standards of Los Angeles County and the State of California per regulatory requirement RR PS-1.

Mitigation Measures

Implementation of Mitigation Measures PS-1 and PS-2 would reduce impacts to fire protection to less than significant levels.

PS-1 On-going throughout implementation of the Specific Plan, the County shall coordinate with LACoFD to ensure that LACoFD facilities are adequate to maintain satisfactory response times within the Specific Plan area.

PS-2 Each subdivision map shall comply with the applicable County Fire Code requirements for fire apparatus access roads, fire flows, and fire hydrants. Final fire flows shall be determined by LACoFD in accordance with Appendix B of the County Fire Code. The required fire apparatus road and water requirements shall be in place prior to construction.

Finding

The County finds that changes or alterations have been incorporated into the Project that mitigate potentially significant direct, indirect, and cumulative impacts on the environment, as identified in the Final EIR. The County based on the Final EIR and the whole of the record that Mitigation Measures MM PS-1 and PS-2 are feasible and finds that these mitigation measures will reduce the impacts related to fire protection to a less than significant level. [Pub. Res. Code §21081(a)(1); Guidelines § 15091(1)]

5. Tribal Cultural Resources

- **Impact 5.14-1:** The proposed project may cause a substantial adverse change in the significance of a tribal cultural resource. [Threshold TCR-1 and C-5]

No Native American tribal cultural resources were identified on or next to the project site during preparation of the cultural resources assessment for the project, or in response to letters inviting representatives of six Native American tribes to consult with the County regarding tribal cultural resources in, or potentially in, the project site. One tribal representative responded, by phone, and did not have information on tribal resources in or near the project site. Nevertheless, there is always potential to uncover previously undiscovered resources, including tribal cultural resources, particularly in areas of deeper excavation. This impact is potentially significant.

Mitigation Measure

Implementation of Mitigation Measure TCR-1 would reduce impacts to tribal cultural resources to less than significant levels.

TCR-1 If human remains are encountered, the County or its contractor shall halt work in the vicinity (within 100 feet) of the find and contact the Los Angeles County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98. The NAHC will designate an MLD for the remains per PRC Section 5097.98. Until the landowner has conferred with the MLD, County shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

Finding

The County finds that changes or alterations have been incorporated into the Project that mitigate potentially significant direct, indirect, and cumulative impacts on the environment, as identified in the Final EIR. The County based on the Final EIR and the whole of the record that Mitigation Measure MM TCR-1 is feasible and finds that this mitigation measure will reduce the impacts related to tribal cultural resources to a less than significant level. [Pub. Res. Code §21081(a)(1); Guidelines § 15091(1)]

6. Utilities and Service Systems

- **Impact 5.15-1:** Project-generated wastewater would be adequately treated by the Sanitation Districts of Los Angeles County's Joint Water Pollution Control Plant, but may require infrastructure improvements. [Thresholds U-1, U-2 (part), and U-5]

Wastewater Treatment Capacity

Wastewater generation onsite at Specific Plan buildout is estimated to be approximately 2.41 mgd, a net increase of about 1.35 mgd (IBI 2017). The estimate is based on acreages of proposed zoning districts and wastewater generation factors for general land use categories per district. There is sufficient wastewater treatment capacity in the region for estimated project wastewater generation (Deguzman 2017), and Specific Plan buildout would not require LACSD to build new or expanded wastewater treatment facilities. Impacts would be less than significant.

Sewer Capacity

Wastewater generated by project buildout could exceed existing sewer capacity in four of 14 sewer tributary areas in the project site. A detailed study – with projected building and consumer flows – around the existing tributary areas of potential deficiencies will identify the required upgrades to the tributaries. This impact would be potentially significant.

Regional Water Quality Control Board Wastewater Discharge Requirements

As required under regulatory requirement RR USS-1, projects developed under the Specific Plan would comply with LACSD discharge requirements—using industrial pretreatment where needed—and JWPCP operations would comply with Los Angeles RWQCB Order No. R4-2011-0151. No impact would occur.

Mitigation Measure

Implementation of Mitigation Measure USS-1 would reduce impacts to sewer main capacity to less than significant levels.

USS-1 Prior to the issuance of grading permits for individual development projects in the West Carson TOD Specific Plan area, the Los Angeles County Department of Public Works shall review the recommended sewer line replacement and upsizing improvements outlined in the "West Carson TOD Sewer Area Study" prepared by IBI Group, Inc. (dated April 25, 2018) and determine whether sewer improvements would be required as part of the proposed projects.

Finding

The County finds that changes or alterations have been incorporated into the Project that mitigate potentially significant direct, indirect, and cumulative impacts on the environment, as identified in the Final EIR. The County based on the Final EIR and the whole of the record that Mitigation Measure MM USS-1 is feasible and finds that this mitigation measure will reduce the impacts related to utilities and service systems to a less than significant level. [Pub. Res. Code §21081(a)(1); Guidelines § 15091(1)]

- **Impact 5.15-2:** Water supply and delivery systems are adequate to meet project requirements. [Thresholds U-2 (part) and U-4]

Water Delivery

The Water Area Study for the proposed project recommended upsizing four water main segments in arterial roadways within the project site. This impact is potentially significant.

Water Supplies

Specific Plan buildout would result in a net increase in water demand of 1,164 acre-feet per year (afy) onsite, to a total of 1,903 afy, based on the 2020 water demand target of 173 gallons per capita per day. The Rancho Dominguez District (RDD) of the California Water Service Company (CWSC) forecasts that it would have adequate water supplies to meet demands by project buildout, and impacts would be less than significant.

Water Treatment Facilities

The two water treatment facilities treating imported water supplied by RDD have sufficient residual capacity for estimated project water demands. Impacts would be less than significant.

Mitigation Measure

Implementation of Mitigation Measure USS-2 would reduce impacts to water main capacity to less than significant levels.

USS-2 Prior to the issuance of grading permits for individual development projects in the West Carson TOD Specific Plan area that would be served by the trunk line south of 220th Street, the Los Angeles County Department of Public Works shall review the recommended water conveyance system improvements outlined in the "West Carson Water Area Study" prepared by IBI Group, Inc. (dated August 13, 2017) and determine whether recommended improvements would be required as part of the proposed projects.

To assist in the determination, the Department of Public Works may require the project applicant/developer to submit a site-specific water flow monitoring study to provide a more detailed analysis of the true water flow depths over time to determine if the potential surcharge conditions would occur due to project development. The water flow monitoring study shall be submitted to the Department of Public Works for review and approval.

Finding

The County finds that changes or alterations have been incorporated into the Project that mitigate potentially significant direct, indirect, and cumulative impacts on the environment, as identified in the Final EIR. The County based on the Final EIR and the whole of the record that Mitigation Measure MM USS-2 is feasible and finds that this mitigation measure will reduce the impacts related to utilities and service systems to a less than significant level. [Pub. Res. Code §21081(a)(1); Guidelines § 15091(1)]

C. SIGNIFICANT UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

The following summary describes the unavoidable adverse impact of the proposed project where either mitigation measures were found to be infeasible, or mitigation would lessen impacts to less than significant. The following impact would remain significant and unavoidable:

1. Air Quality

- **Impact 5.2-1:** Criteria air pollutant emissions associated with population and employment growth in the West Carson TOD Specific Plan have the potential to affect the assumptions of SCAQMD Air Quality Management Plan. [Threshold AQ-1]

Development that would be accommodated by the Proposed Project would exceed SCAQMD's regional operational thresholds. As a result, the proposed project could potentially exceed the assumptions in the South Coast Air Quality Management District (SCAQMD)'s Air Quality Management Plan (AQMP) and would not be considered consistent with the AQMP. This impact would be potentially significant.

Mitigation Measures

RRs AIR-1 through AIR-4 and Mitigation Measures AQ-1 through AQ-5 (see below under Impacts 5.2-2 and 5.2-3) would reduce the proposed project's regional construction-related and operational-phase criteria air pollutant emissions to the extent feasible to minimize potential conflicts with the SCAQMD AQMP. However, no mitigation measures are available that would reduce impacts associated with inconsistency with the air quality management plans due to the magnitude of growth and associated emissions that would be generated by the buildout of West Carson TOD Specific Plan.

Finding

Implementation of MM AQ-1 through AQ-5 would reduce the proposed project's regional construction-related and operational-phase criteria air pollutant emissions to the extent feasible to minimize potential conflicts with the SCAQMD AQMP. However, Impact 5.2-1 would remain significant and unavoidable and a Statement of Overriding Considerations is required.

- **Impact 5.2-2:** Construction activities associated with buildout of the West Carson TOD Specific Plan could exceed SCAQMD's regional significance thresholds. [Thresholds AQ-2 and AQ-3]

Construction activities would temporarily increase PM_{10}, $PM_{2.5}$, VOC, NO_x, SO_x, and CO regional emissions within the South Coast Air Basin (SoCAB). Construction activities associated with the proposed project could potentially exceed the SCAQMD regional thresholds for NO_X. The primary source of NO_X emissions is exhaust from vehicles and construction equipment. NO_X is a precursor to the formation of both O_3 and particulate matter (PM_{10} and $PM_{2.5}$). Project-related emissions of NO_X would contribute to the O_3, NO_2, PM_{10}, and $PM_{2.5}$ nonattainment designations of the SoCAB. Therefore, project-related construction activities would result in significant regional air quality impacts. Because cumulative development within West Carson TOD Specific Plan would exceed the regional significance thresholds, construction of the proposed project could contribute to an increase in health effects in the basin until such time as the attainment standard are met. This impact would be potentially significant.

Mitigation Measures

AQ-1 Applicants for new development projects within the West Carson TOD Specific Plan shall require the construction contractor to use equipment that meets the US Environmental Protection Agency (EPA) Tier 4 emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower, unless it can be demonstrated to the County of Los Angeles that such equipment is not available. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by the California Air Resources Board's regulations.

Prior to construction, the project engineer shall ensure that all demolition and grading plans clearly show the requirement for EPA Tier 4 or higher emissions

standards for construction equipment over 50 horsepower. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the County of Los Angeles. The construction equipment list shall state the makes, models, and numbers of construction equipment onsite. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449.

AQ-2 Applicants for new development projects within the West Carson TOD Specific Plan shall require the construction contractor to prepare a dust control plan and implement the following measures during ground-disturbing activities—in addition to the existing requirements for fugitive dust control under South Coast Air Quality Management District (SCAQMD) Rule 403—to further reduce PM_{10} and $PM_{2.5}$ emissions. The County of Los Angeles shall verify that these measures have been implemented during normal construction site inspections.

- Following all grading activities, the construction contractor shall reestablish ground cover on the construction site through seeding and watering.
- During all construction activities, the construction contractor shall sweep streets with SCAQMD Rule 1186–compliant, PM10-efficient vacuum units on a daily basis if silt is carried over to adjacent public thoroughfares or occurs as a result of hauling.
- During all construction activities, the construction contractor shall maintain a minimum 24-inch freeboard on trucks hauling dirt, sand, soil, or other loose materials and shall tarp materials with a fabric cover or other cover that achieves the same amount of protection.
- During all construction activities, the construction contractor shall water exposed ground surfaces and disturbed areas a minimum of every three hours on the construction site and a minimum of three times per day.
- During all construction activities, the construction contractor shall limit onsite vehicle speeds on unpaved roads to no more than 15 miles per hour.

Finding

Construction activities associated with the buildout of the project would generate criteria air pollutant emissions that would exceed SCAQMD's regional significance thresholds, contribute to the nonattainment designations of the SoCAB, and contribute to several known adverse health effects from poor air quality. RR AIR-3 through RR AIR-4 would minimize criteria air pollutant emissions from construction equipment exhaust and fugitive dust through compliance with CARB and SCAQMD rules. Mitigation Measures AQ-1 and AQ-2 would reduce criteria air pollutants generated by project-related construction activities. Buildout of the proposed project would occur over a period of approximately 20 years or longer. Construction time frames and equipment for individual site-specific projects are not available at this time. There is a potential for multiple developments to be

constructed at any one time, resulting in significant construction-related emissions. Therefore, despite adherence to Mitigation Measures AQ-1 and AQ-2, project-level and cumulative impacts under Impact 5.2-2 would remain significant and unavoidable and a Statement of Overriding Considerations is required.

- **Impact 5.2-3:** Long-term operation of the West Carson TOD Specific Plan would generate emissions that would exceed SCAQMD's regional significance thresholds. [Thresholds AQ-2 and AQ-3]

  Operation of the West Carson TOD Specific Plan at buildout would generate air pollutant emissions that exceed SCAQMD's regional significance thresholds for criteria air pollutant emissions, except SO_X. The new residential and nonresidential uses would be constructed over the approximately 20-year project buildout; therefore, emissions from construction activities could add to the total emissions during early phases. Emissions of VOC, NOx, CO, PM_{10}, and $PM_{2.5}$ that exceed the SCAQMD regional threshold would cumulatively contribute to the O_3 nonattainment designation of the SoCAB. Therefore, implementation of the West Carson TOD Specific Plan would result in a significant impact because it would significantly contribute to the nonattainment designations of the SoCAB. Because cumulative development within the West Carson TOD Specific Plan would exceed the regional significance thresholds, operation of the proposed project could contribute to an increase in health effects in the basin. This impact would be potentially significant.

Mitigation Measures

Stationary Source

AQ-3 Prior to issuance of a building permit for new development projects within the West Carson TOD Specific Plan, the property owner/developer shall show on the building plans that all major appliances (dishwashers, refrigerators, clothes washers, and dryers) to be provided/installed are Energy Star appliances. Installation of Energy Star appliances shall be verified by the County of Los Angeles prior to issuance of a certificate of occupancy.

Transportation and Motor Vehicles

AQ-4 Prior to issuance of building permits for residential development projects within the West Carson TOD Specific Plan, 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 County of Los Angeles 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.

AQ-5 Prior to issuance of building permits for nonresidential development projects within the West Carson TOD Specific Plan, 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 County of Los Angeles 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 nonresidential building with 30 or more parking spaces. Installation shall be consistent with Section A5.106.5.3 (Nonresidential Voluntary Measures) of the CALGreen Code.

Finding

Incorporation of Mitigation Measures AQ-3 through AQ-5 would reduce operation-related criteria air pollutants generated by stationary and mobile sources. Mitigation Measures AQ-4 and AQ-5 would encourage and accommodate use of alternative-fueled vehicles and nonmotorized transportation. However, despite adherence to Mitigation Measures AQ-3 through AQ-5, project-level and cumulative impacts identified under Impact 5.2-3 would remain significant and unavoidable due to the magnitude of land use development associated with the proposed project. A Statement of Overriding Considerations is required.

- **Impact 5.2-4:** Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-4]

Development that would be accommodated by the West Carson TOD Specific Plan could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevating those levels. Because potential redevelopment could occur close to existing sensitive receptors, the development that would be accommodated by the West Carson TOD Specific Plan has the potential to expose sensitive receptors to substantial pollutant concentrations. Construction equipment exhaust combined with fugitive particulate matter emissions have the potential to expose sensitive receptors to substantial concentrations of criteria air pollutant emissions or diesel particulate matter and result in a significant impact.

Mitigation Measures

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce concentrations of air pollutants that sensitive receptors would be exposed to.

Finding

Mitigation Measures AQ-1 and AQ-2 (applied for Impact 5.2-2) would reduce the proposed project's regional construction emissions and therefore also reduce the project's localized construction-related

criteria air pollutant and DPM emissions to the extent feasible. However, because existing sensitive receptors may be close to project-related construction activities, construction emissions generated by individual development projects have the potential to exceed SCAQMD's LSTs (criteria air pollutants and health risk). Because of the scale of development activity associated with buildout of the project, for this broad-based program EIR analysis, it is not possible to determine whether the scale and phasing of individual projects would result in the exceedance of the localized emissions and health risk thresholds and contribute to known health effects. Therefore, project-level and cumulative impacts under Impact 5.2-4 would remain significant and unavoidable and a Statement of Overriding Considerations is required.

2. Greenhouse Gas Emissions

- **Impact 5.5-1:** Development of the proposed project would result in a substantial increase of GHG emissions. [Threshold GHG-1]

  Development under the proposed project would contribute to global climate change through direct and indirect emissions of GHG from land uses within the West Carson TOD Specific Plan. The net increase in GHG emissions of 41,104 $MTCO_2e$ annually from project-related operational activities would exceed SCAQMD's draft bright-line screening threshold of 3,000 $MTCO_2e$ for all land use types. Although the West Carson TOD Specific Plan would result in a substantial increase in GHG emissions, it would also result in a 20 percent decrease in GHG emissions per person. As shown in Table 5.5-7, the GHG emissions per service population rate would decrease from 6.40 $MTCO_2e$/year/SP to 5.13 $MTCO_2e$/year/SP.

  However, although implementation of West Carson TOD Specific plan would result in a decrease in GHG emissions per service population, it would not meet the forecast target efficiency metric of 2.4 $MTCO_2e$/year/SP based on the long-term GHG reduction goals of SB 32 and trajectory to achieve the Executive Order S-03-05. Additional state and local actions are necessary to achieve the post-2030 GHG reduction goals for the state. At this time, no additional GHG reductions programs have been outlined that get the state to the post-2030 targets identified in Executive Order S-03-05, which are an 80 percent reduction in 1990 emissions by 2050. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advances in technology (CCST 2012). Therefore, the proposed project's cumulative contribution to the long-term GHG emissions in the state would be considered potentially significant.

Mitigation Measures

Implementation of Mitigation Measures AQ-3 through AQ-5, set forth in Section C.1, Air Quality, above, would reduce project-related GHG emissions impacts.

Finding

Mitigation Measures AQ-3 through AQ-5 would encourage and accommodate use of alternative-fueled vehicles and nonmotorized transportation and ensure that GHG emissions from the buildout of the proposed project would be minimized. However, additional federal, state, and local measures would be necessary to reduce GHG emissions under the proposed project to meet the long-term GHG reduction goals under Executive Order S-03-05 and SB 32. The buildout GHG emissions

inventory for the proposed project would generate 5.13 $MTCO_2e$/SP and would exceed the efficiency target of 2.4 $MTCO_2e$/SP. At this time, there is no plan past 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology (CCST 2012). Since no additional statewide measures are currently available, Impact 5.5-1 would remain significant and unavoidable and a Statement of Overriding Considerations is required.

3. Noise

- **Impact 5.9-1:** Construction activities would result in temporary noise increases in the vicinity of the proposed project. [Threshold N-3]

  Construction noise is exempted from the Los Angeles County noise control ordinance when the work is performed within the hours specified within the Los Angeles County Code (i.e., 7:00 AM to 7:00 PM Monday through Saturday). Two types of temporary noise impacts could occur during construction activities associated with development that would be accommodated by the Specific Plan: vehicle noise from the transport of workers and movement of materials to and from the site; and noise from demolition, site preparation, grading, and/or construction. Significant noise impacts may occur from operation of heavy earthmoving equipment and truck hauling that would occur with construction of individual development projects. Implementation of the Specific Plan would result in an increase in development intensity throughout the plan area. Construction noise levels depend on the specific locations, site plans, and construction details of individual development projects, which are not known at this time. Construction-related noise would be localized and would occur intermittently for varying periods of time.

  Because specific project-level information is not available at this time, it is impossible to quantify the construction noise impacts at specific off-site or on-site sensitive receptors. Construction of individual development projects associated with the Specific Plan would temporarily increase the ambient noise environment in the vicinity of each development project, potentially affecting existing and future sensitive uses in the vicinity. Because these construction activities may occur near noise-sensitive receptors, because noise levels may exceed the County Code's maximum acceptable noise level limits at sensitive receptors, and because noise disturbances may occur for prolonged periods of time (depending on the project type), construction noise impacts associated with implementation of the proposed project are considered significant.

Mitigation Measures

N-1 As required by the Los Angeles County Code Section 12.08.430, construction activities are prohibited between the hours of 7 PM and 7 AM on weekdays and Saturdays, or at any time on Sundays or holidays. Construction is also required to comply with the maximum noise levels from mobile equipment specified in Section 12.08.430 (also shown in Table 5.9-6 and Table 5.9-7 of this analysis).

N-2 Prior to the issuance of demolition, grading and/or construction permits, applicants for individual development projects within 500 feet of noise-sensitive receptors (e.g., residences, hospitals, schools) shall conduct a project-level construction noise

analysis to evaluate potential impacts on sensitive receptors. The analysis shall be conducted once the final construction equipment list that will be used for demolition and grading activities is determined. The project-level noise analysis shall be prepared, reviewed, and approved by the County of Los Angeles, City of Los Angeles, and/or City of Carson, as applicable. If the analysis determines that demolition and construction activities would result in an impact to identified noise-sensitive receptors, then specific measures to attenuate the noise impact shall be outlined in the analysis and reviewed and approved by the County. Specific measures may include, but are not limited to, the following best management practices:

- Post a construction site notice near the construction site access point or in an area that is clearly visible to the public. The notice shall include the following: job site address; permit number, name, and phone number of the contractor and owner; dates and duration of construction activities; construction hours allowed; and the County of Los Angeles and construction contractor phone numbers where noise complaints can be reported and logged.
- Consider the installation of temporary sound barriers for construction activities immediately adjacent to occupied noise-sensitive structures.
- Restrict haul routes and construction-related traffic to the least noise-sensitive times of the day.
- Reduce nonessential idling of construction equipment to no more than five minutes.
- Ensure that all construction equipment is monitored and properly maintained in accordance with the manufacturer's recommendations to minimize noise.
- Fit all construction equipment with properly-operating mufflers, air intake silencers, and engine shrouds, no less effective than as originally equipped by the manufacturer, to minimize noise emissions.
- If construction equipment is equipped with back-up alarm shut offs, switch off back-up alarms and replace with human spotters, as feasible.
- Stationary equipment (such as generators and air compressors) and equipment maintenance and staging areas shall be located as far from existing noise-sensitive land uses, as feasible.
- To the extent feasible, use acoustic enclosures, shields, or shrouds for stationary equipment such as compressors and pumps.
- Shut off generators when they are not needed.
- Coordinate deliveries to reduce the potential of trucks waiting to unload and idling for long periods of time.
- Grade surface irregularities on construction sites to prevent potholes from causing vehicular noise.

- Minimize the use of impact devices such as jackhammers, pavement breakers, and hoe rams. Where possible, use concrete crushers or pavement saws rather than hoe rams for tasks such as concrete or asphalt demolition and removal.

The final noise-reduction measures to be implemented shall be determined by the construction-level noise analysis. The final noise-reduction measures shall be included on all construction and building documents and/or construction management plans and submitted for verification to the County of Los Angeles; implemented by the construction contractor through the duration of the construction phase; and discussed at the predemolition, pregrade, and/or preconstruction meetings.

Finding

With implementation of Mitigation Measures N-1 and N-2, construction noise impacts due to construction activities would be reduced to the extent feasible. However, feasible mitigation may not be effective at reducing construction-generated noise received at sensitive receptors to levels below the County Code thresholds throughout all periods of construction and at all receptors. Given the expected noise levels and the length of the construction activities, significant construction noise impacts would remain. Impact 5.9-1 would remain significant and unavoidable and a Statement of Overriding Considerations is required.

4. Transportation and Traffic

- **Trans 5.13-1:** Project would not result in a significant increase in Intersection and Roadway Level of Service. [Threshold T 1]

The project is expected to generate 29,488 daily trips, with 2,989 trips (2,178 inbound / 811 outbound) during the AM peak hour and 2,745 trips (826 inbound / 1,919 outbound).

Intersection Operations

The proposed project is anticipated to create significant traffic impacts at fourteen of the study intersections in the Existing Year (2016) With Project Scenario; and at seventeen study intersections for the Future Year (2035) With Project scenario. A summary of the impacts and the scenarios in which they occur is provided below:

- **Normandie / Torrance:** Existing (AM); Future (AM and PM)
- **Vermont / Torrance:** Existing (AM and PM); Future (AM and PM)
- **Western / Carson:** Existing (AM and PM); Future (AM and PM)
- **Normandie / Carson:** Existing (AM and PM); Future (AM and PM)
- **Berendo / Carson:** Future (PM)
- **Vermont / Carson:** Existing (AM and PM); Future (AM and PM)
- **SB I-110 Ramps / Carson:** Existing (AM and PM); Future (AM and PM)
- **Figueroa / 220th and NB I-110:** Existing (AM and PM); Future (AM and PM)
- **Western / 223rd:** Existing (AM and PM); Future (AM and PM)
- **Normandie / 223rd:** Future (AM and PM)

- **Meyler / 223rd:** Existing (AM); Future (AM and PM)
- **Vermont / 223rd:** Existing (AM and PM); Future (AM and PM)
- **SB I-110 Ramps / 223rd:** Existing (AM and PM); Future (AM and PM)
- **Figueroa / 223rd:** Future (AM and PM)
- **SB I-110 Ramps / Hamilton:** Existing (AM and PM); Future (AM and PM)
- **Western / Torrance:** Existing (PM); Future (AM and PM)
- **Western / 220th:** Existing (PM); Future (PM)

Roadway Segments

In addition, the proposed project is anticipated to create significant traffic impacts at six roadway segments, as follows.

- Carson Street from Budlong Avenue to Berendo Avenue: Existing (AM), Future (AM and PM)
- Carson Street from Vermont Avenue to SB 1-110 ramp: Existing (AM and PM), Future (AM and PM)
- Carson Street from Western Avenue to Normandie Avenue: Existing (AM and PM), Future (PM)
- Vermont Avenue from Javelin Street to Carson Street: Existing (PM), Future (AM and PM)
- Vermont Avenue from 220th Street to 223rd Street: Existing (AM and PM), Future (AM and PM)
- Figueroa Street from Carson Street to 220th Street: Existing (PM), Future (PM)

Mitigation Measures

T-1 Prior to issuance of building permits for any project forecast to generate 100 or more peak hour trips, the property owner/developer shall submit to the County a traffic study to identify when the improvements identified in the West Carson Transit Oriented District Specific Plan EIR Traffic Impact Study, IBI Group, June 2017 (Appendix J of this DEIR) shall be designed and constructed. Each traffic study shall comply with the traffic study guidelines from the affected agencies in effect at that time.

a) The traffic study will specify the timing, funding, construction and fair-share responsibilities for all traffic improvements necessary to maintain satisfactory levels of service within the specific plan area and surrounding jurisdictions, as defined by the County's General Plan, based on thresholds of significance, performance standards and methodologies utilized in this DEIR, Metro's CMP Program and established in the adopted traffic impact analysis guidelines for the affected agencies.

b) Prior to issuance of occupancy permit, the property owner/developer shall construct, bond for or enter into a funding agreement for necessary circulation system improvements, as determined by the affected agency. At minimum, fair-share calculations shall include intersection improvements, rights-of-way, and construction costs, unless alternative funding sources have been identified to help pay for the improvement.

T-2 The County of Los Angeles shall continue to secure the funding needed to implement the future planned improvements within the specific plan area. A variety of funding sources shall be explored, such as Metro's CMP Fee Program, Metro Call for Project funds, and federal and state grant opportunities. If the CMP fee program is not adopted by Metro and the County of Los Angeles, other funding sources for regional transportation needs in the specific plan area, including Caltrans facilities, shall be pursued such as a potential West Carson Development Impact Fee Program, development agreements for large projects, and/or mitigation agreements between future applicants and Caltrans for projects that impact Caltrans facilities.

T-3 The County shall work with Caltrans as they prepare plans to add additional lanes or complete other improvements to various freeways within and adjacent to unincorporated areas. This includes adding or extending mixed flow general purpose lanes, adding or extending existing HOV lanes, adding Express Lanes (high occupancy toll lanes), incorporating truck climbing lanes, improving interchanges and other freeway related improvements.

T-4 The County shall require traffic engineering firms retained to prepare traffic impact studies for future development projects to consult with Caltrans, when a development proposal meets the requirements of statewide, regional, or areawide significance per CEQA Guidelines §15206(b). When preparing traffic impact studies, the most up to date Guide for the Preparation of Traffic Impact Studies from Caltrans shall be followed. Proposed developments meeting the criteria of statewide, regional or areawide include:

- Proposed residential developments of more than 500 dwelling units
- Proposed shopping centers or business establishments employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space.
- Proposed commercial office buildings employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space
- Proposed hotel/motel developments of more than 500 rooms

When the CEQA criteria of regional significance are not met, Caltrans recommends that Project Applicants consult with Caltrans when a proposed development includes the following characteristics:

- All proposed developments that have the potential to cause a significant impact to state facilities (right-of-way, intersections, interchanges, etc.) and when

required mitigation improvements are proposed in the initial study. Mitigation concurrence should be obtained from Caltrans as early as possible.

- Any development that assigns 50 or more trips (passenger car equivalent trips) during peak hours to a state highway/freeway.
- Any development that assigns 10 or more trips (passenger car equivalent trips) during peak hours to an off-ramp. On/off-ramps that are very close to each other in which the project trips may cause congestion on the left-turn lane storage to the on-ramp.
- Any development located adjacent to or within 100 feet of a state highway facility and may require a Caltrans Encroachment Permit. (Exceptions: additions to single family homes or 10 residential units or less).
- When the County cannot determine whether or not Caltrans will expect a traffic impact analysis pursuant to CEQA.

Finding

The proposed project is anticipated to create significant impacts at several study intersections for the Future Year (2035) With Project scenario.

Mitigation Measures T-1 through T-4 would require various improvements at study area intersections to mitigate project impacts. These include, but are not limited to, adding turn lanes, widening lanes, restriping lanes, expanding the Automated Traffic Surveillance and Control network, and improving traffic signal lights.

Improvements to three of the roadway intersections (Vermont Avenue/223rd Street, Vermont Avenue/Carson Street; and Vermont Avenue/Torrance Boulevard) would require the acquisition of right-of-way for the proposed improvements. Right-of-way acquisition at these intersections is believed to be infeasible due to existing development of adjacent land. Therefore, project impacts to these three roadway intersections are determined to be significant and unavoidable.

Additionally, as the primary responsibility for approving and/or completing certain improvements located outside of the specific plan area lies with agencies other than the County of Los Angeles (i.e., Cities of Los Angeles, Torrance and Carson), there is the potential that significant impacts may not be fully mitigated if such improvements are not completed for reasons beyond the County's control (e.g., the County cannot undertake or require improvements outside of the County's jurisdiction). Therefore, project impacts to intersections located in the Cities of Los Angeles, Torrance, and Carson are determined to be significant and unavoidable. A Statement of Overriding Considerations is required.

- **Trans 5.13-2:** Project would result in a significant increase in Freeway Mainline Level of Service. [Threshold T 1]

  The proposed project is anticipated to create significant traffic impacts at one freeway mainline study location in the Existing Year (2016) With Project Scenario and the Future Year (2035) With Project scenario:

- I-405 at I 7-10: Existing (AM); Future (AM and PM)

Mitigation Measures

Implementation of Mitigation Measures T-2 through T-4 would reduce project impacts to freeway mainline traffic conditions.

Finding

Funding and implementation of the transportation improvements outlined in Mitigation Measures MM T-2 through T-4 are under the control of Caltrans, the Metropolitan Transportation Authority of Los Angeles County (Metro), and the California Transportation Commission (CTC), not the County of Los Angeles. Therefore, the County cannot ensure that these improvements will be implemented. Impact 5.13-2 would thus be significant and unavoidable, and a Statement of Overriding Considerations is required.

- **Trans 5.13-3:** Project-related trip generation in combination with existing and proposed cumulative development would exceed the capacity at freeway off-ramps. [Threshold T-1]

  Existing Plus Project Conditions

  Traffic generated by the proposed project in combination with cumulative projects in Existing Plus Project conditions would exceed acceptable storage capacities for the following two freeway off-ramps; this impact would be significant.

  - I-110 Southbound Off-Ramp at Carson Street
  - I-110 Southbound Off-Ramp at Hamilton Avenue

  Future Year (2035) Plus Project Conditions

  Project-generated traffic would exceed acceptable storage capacities for the following three freeway off-ramps; this impact would be significant.

  - I-110 Southbound Off-Ramp at Carson Street
  - I-110 Southbound Off-Ramp at 223rd Street
  - I-110 Southbound Off-Ramp at Hamilton Avenue

Mitigation Measures

Implementation of Mitigation Measures T-2 through T-4 would reduce project and cumulative impacts to freeway offramp storage capacities.

Finding

Funding and implementation of the transportation improvements outlined in Mitigation Measures MM T-2 through T-4 are under the control of Caltrans, the Metropolitan Transportation Authority of Los Angeles County (Metro), and the California Transportation Commission (CTC), not the

County of Los Angeles. Therefore, the County cannot ensure that these improvements will be implemented. Impact 5.13-2 would thus be significant and unavoidable, and a Statement of Overriding Considerations is required.

V. ALTERNATIVES TO THE PROPOSED PROJECT

A. ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

The following is a discussion of the alternatives considered during the scoping and planning process and the reasons why they were not selected for detailed analysis in the EIR.

Alternative Development Areas

The County identified the West Carson TOD Specific Plan area as one of several urban and suburban areas with access to major transit and commercial corridors, and thus designated priority policy areas for infill development. Overall, the purpose of the West Carson TOD Specific Plan is to expand opportunities for compact, infill development that is compatible with and supports the intensification of the Harbor-UCLA Medical Center yet is sensitive to the existing single-family neighborhoods. No other transit corridors within the Community of West Carson would be able to accommodate this proposed growth while achieving the proposed project's guiding principles. Therefore, no other sites were considered for further alternatives analysis.

Finding

The County finds that the Alternative Development Areas alternative is infeasible and/or would not meet most Project objectives, for the reasons detailed in Section 7.0, *Alternatives to the Proposed Project.*

B. ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria listed above, the following three alternatives have been determined to represent a reasonable range of alternatives which have the potential to feasibly attain most of the basic objectives of the project, but which may avoid or substantially lessen any of the significant effects of the project.

- No Project/Existing General Plan Alternative
- Reduced Intensity Alternative
- Alternative Land Use Plan

The three alternatives and the Proposed Project are compared below in Table 1.

Table 1 Buildout Statistical Summary

	Proposed Project	No Project/Existing General Plan Alternative	Reduced Intensity Alternative	Alternative Land Use Plan
Dwelling Units	3,574 (938 SFR and 2,636 MFR)	1,369 (1,188 SFR and 181 MFR)	2,502 (657 SFR and 1,845 MFR)	4,646 (1,219 SFR and 3,427 MFR)
Nonresidential SF	2,661,321	1,703,005 SF[1]	1,862,925[2]	1,862,925[2]
Population[3]	9,840	4,073	6,598	12,252
Employment[4]	4,195	1,858	2,365	2,365
Jobs-to-Housing Ratio	1.17	1.36	0.95	0.51

Notes: SFR = single family residential; MFR =multifamily residential

[1] Population projections are based on an occupancy rate of 99.0% and 3.08 persons per household (PPH) for SFR and an occupancy rate of 94.7% and 2.63 PPH for MFR. Average occupancy rates and PPH are used for alternatives with undistinguished SFR and MFR units (96.9% occupancy and 2.86 PPH).

[2] Total nonresidential SF for the Reduced Intensity Alternative and Alternative Land Use Plan consists of 45,785 SF commercial; 793,645 SF industrial; and 1,023,495 SF mixed use.

[3] Total nonresidential SF for the existing General Plan consists of 255,902 SF commercial; 146,510 SF office; and 1,300,593 SF industrial.

[3] Employment generation rates were based on those detailed in Table 5.10-9 of Section 5.10, *Population and Housing*, of this DEIR. The average of commercial and office employment generation rates were used to calculate jobs for Mixed Use development.

1. No Project/Existing General Plan Alternative

The No Project/Existing General Plan Alternative assumes the West Carson TOD Specific Plan would not be adopted and the current General Plan designations of the project area would remain. Pursuant to CEQA Guidelines Section 15126.6(e)(3)(A), where a project is the revision of an existing regulatory plan, the "no project" alternative assumes continuation of the existing plan, policy or operation into the future. Therefore, this alternative assumes that new development and redevelopment would continue to occur in the project area consistent with the provisions of the project site's General Plan designations, including Residential 9, 18, 30, and 50; General Commercial, Mixed Use, Light Industrial, and Public and Semi-Public uses.

This alternative would allow substantially fewer dwelling units and nonresidential building square footage compared to the proposed project. Overall, development of the project site under the No Project/Existing General Plan Alternative would allow up to 1,369 dwelling units, 1,703,005 square feet of nonresidential development, which would generate approximately 4,073 residents and 1,858 jobs.

Summary of Environmental Effects and Achievement of Project Objectives

The No Project/Existing General Plan Alternative would reduce impacts to air quality, geology and soils, GHG emissions, hazards and hazardous materials, noise, population and housing, public services, recreation, and utilities and service systems. Impacts to transportation and traffic would be greater, and impacts to aesthetics, cultural resources, hydrology and water quality, land use and planning, and tribal cultural resources would be similar.

This alternative would be able to eliminate one significant and unavoidable air quality impact related to consistency with the SCAQMD's AQMP, but significant and unavoidable impacts to construction and operational air quality, GHG emissions, construction noise, and traffic would remain.

The No Project/Existing General Plan Alternative would not be able to achieve as many of the project objectives as the West Carson TOD Specific Plan. Development in accordance with the County's General Plan would not include the urban design standards, development standards, and

public realm strategies of the proposed Specific Plan that would help create a distinct identity to the West Carson community, encourage a diverse mix of land uses and transit-oriented development, and improvements to the public realm (Objective No's 1, 5 and 6). This alternative also would not include the proposed project's multimodal transportation amenities and relocation of the Carson Metro Station that can improve connections within the community and increase access to transit (Objective No. 2). Development in accordance with the existing General Plan also would not include implementation of sustainable development guidelines detailed in the proposed Specific Plan (Objective No. 7).

Buildout of this alternative would be able to provide health and safety to residents, visitors and employees and ensure economic vitality of the project area (Objective No's 3 and 4); however, it would achieve these objectives to a lesser degree than the proposed project. The West Carson TOD Specific Plan includes complete streets strategies, including implementation of pedestrian, bicyclist, transit users, and motorist amenities that would help increase safety and connectivity within the community. Public realm strategies (i.e., pedestrian crossings, streetscape enhancements, multiuse trails, and pocket parks) would also encourage the health and safety of residents, visitors and employees. The proposed project would also allow a mix of transit-oriented land use types that would bolster the economic vitality of West Carson more so than the existing General Plan.

Finding:

The County finds that the No Project/Existing General Plan Alternative is infeasible because although it is environmentally superior to the proposed Project, it would meet fewer of the Project objectives and it would not realize all the benefits of Project implementation.

In making this determination, the County finds that when compared to the alternatives described and evaluated in the Final EIR, the Proposed Project, as mitigated, provides a reasonable balance between satisfying the Project objectives and reducing potential environmental impacts to an acceptable level.

2. Reduced Intensity Alternative

The Reduced Density Alternative was evaluated for its potential to reduce the proposed project's significant and unavoidable impacts related to construction and operational air quality, GHG emissions, and construction noise. This alternative would include adopting the West Carson TOD Specific Plan and implementing its goals and policies but would reduce proposed residential and nonresidential development by 30 percent.

Buildout of the Reduced Intensity Alternative would allow up to 2,502 dwelling units (657 single-family residences and 1,845 multifamily residences) and 1,862,925 square feet of nonresidential development. This alternative would introduce approximately 6,598 residents and generate 2,365 jobs, creating a jobs-housing ratio of 0.95.

Summary of Environmental Effects and Achievement of Project Objectives

The Reduced Intensity Alternative would reduce impacts to aesthetics, air quality, geology and soils, GHG emissions, hazards and hazardous materials, noise, public services, recreation, transportation and traffic, and utilities and service systems. Impacts to cultural resources, hydrology and water quality, land use and planning, population and housing, and tribal cultural resources would be similar.

While this alternative would reduce impacts to many topical sections, significant and unavoidable impacts to air quality (construction, operations, and AQMP consistency), GHG emissions, and construction noise would remain.

This alternative would reduce development intensity but would still adopt and implement the West Carson TOD Specific Plan. Therefore, it would be able to create a distinct identity in the West Carson community (Objective No. 1); ensure the health and safety of residents, visitors and employees (Objective No. 3); ensure economic vitality of the project area (Objective No. 4); and maximize the use of sustainable development practices (Objective No. 7). The mobility and public realm improvements in the Specific Plan would also allow improvements to connections within the community and increase access to transit (Objective No. 2) and improve the quality of life for existing residents with improvements to the public realm (Objective No. 6).

However, a transit-oriented community is recognized as an area well suited for higher density housing and mixed uses surrounding existing major commercial, employment, and civic activity nodes. Therefore, this alternative's 30-percent reduction in residential and nonresidential development may not achieve the project's objective to encourage a diverse mix of land uses and transit-oriented development to the same degree as the proposed project (Objective No. 5).

Finding

The County finds that the Reduced Intensity Alternative is infeasible because although it is environmentally superior to the proposed Project, it would meet fewer of the Project objectives and it would not realize all the benefits of Project implementation.

In making this determination, the County finds that when compared to the alternatives described and evaluated in the Final EIR, the Proposed Project, as mitigated, provides a reasonable balance between satisfying the Project objectives and reducing potential environmental impacts to an acceptable level.

3. Alternative Land Use Plan

The Alternative Land Use Plan was evaluated for its potential to assist the County in providing more housing at higher densities in the subregion with the potential for affordable housing development. This would help the County meet its share of the regional housing need through Program 6 (Transit Oriented Districts Program) of the County of Los Angeles Housing Element.

This alternative would involve adopting the West Carson TOD Specific Plan and implementing its goals and policies but would increase residential development by 30 percent and decrease nonresidential development by 30 percent. As detailed in Table 1, buildout of the Alternative Land Use Plan would allow up to 4,646 dwelling units (1,219 single-family residences and 3,427

multifamily residences) and 1,862,925 square feet of nonresidential development. This alternative would introduce approximately 12,252 residents and generate 2,365 jobs, creating a jobs-housing ratio of 0.50.

Summary of Environmental Effects and Achievement of Project Objectives

The Alternative Land Use Plan would have similar impacts to aesthetics, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, transportation and traffic, and tribal cultural resources. Impacts to air quality, GHG emissions, population and housing, recreation, and utilities and service systems would be greater than the proposed project.

Significant and unavoidable impacts to air quality (construction, operation, and AQMP consistency), GHG emissions, and construction noise would remain.

The West Carson TOD Specific Plan would still be adopted and implemented under the Alternative Land Use Plan. Therefore, this alternative would be able to create a distinct identity in the West Carson community (Objective No. 1); improve connections within the community and increase access to transit through implementation of the Specific Plan's mobility strategies (Objective No. 2); ensure the health and safety of residents, visitors and employees (Objective No. 3); improve the quality of life for existing residents with improvements to the public realm as detailed in the Mobility and Public Realm section of the Specific Plan (Objective No. 6); and maximize the use of sustainable development practices (Objective No. 7).

However, since nonresidential development would decrease by 30 percent from 2,661,321 to 1,862,925 square feet, ensuring the economic vitality of the project area may not be achieved as well as under the proposed project (Objective No. 4), and the alternative land use mix with more residential development may not encourage as diverse a mix of land uses and transit-oriented development (Objective No. 5).

Finding

The County finds that the Alternative Land Use Plan Alternative is infeasible because although it is environmentally superior to the proposed Project, it would meet fewer of the Project objectives and it would not realize all the benefits of Project implementation.

In making this determination, the County finds that when compared to the alternatives described and evaluated in the Final EIR, the Proposed Project, as mitigated, provides a reasonable balance between satisfying the Project objectives and reducing potential environmental impacts to an acceptable level.

VI. STATEMENT OF OVERRIDING CONSIDERATIONS

CEQA requires decision makers to balance the benefits of the proposed project against its unavoidable environmental risks when determining whether to approve the project. If the benefits of the project outweigh the unavoidable adverse effects, those effects may be considered "acceptable" (State CEQA Guidelines Section 15093[a]). CEQA requires the agency to support, in writing, the specific reasons for considering a project acceptable when significant impacts are infeasible to mitigate. Such reasons must be based on substantial evidence in the Final EIR or elsewhere in the administrative record (State CEQA Guidelines Section 15093 [b]). The agency's statement is referred to as a "Statement of Overriding Considerations." The following sections provide a description of the project's one significant and unavoidable adverse impact and the justification for adopting a statement of overriding considerations.

A. Significant and Unavoidable Adverse Impacts

Pursuant to Public Resources Code Section 21081(b) and Guidelines Section 15093, the County has balanced the benefits of the Proposed Project against the following unavoidable adverse impact associated with the Proposed Project and has adopted all feasible mitigation measures with respect to these impacts: (1) Air Quality; (2) Greenhouse Gas Emissions; (3) Noise; and (4) Transportation/Traffic. The County also has examined alternatives to the Proposed Project, none of which both meets the Project objectives to the same extent as the Proposed Project, and is environmentally preferable to the Proposed Project.

The County declares that it has adopted mitigation measures to reduce all of the Proposed Project's environmental impacts to an insignificant level, other than the following:

1. Air Quality

Impact 5.2-1

Implementation of MM AQ-1 through AQ-5 would reduce the proposed project's regional construction-related and operational-phase criteria air pollutant emissions to the extent feasible to minimize potential conflicts with the SCAQMD AQMP. However, Impact 5.2-1 would remain significant and unavoidable.

Impact 5.2-2

Construction activities associated with the buildout of the project would generate criteria air pollutant emissions that would exceed SCAQMD's regional significance thresholds, contribute to the nonattainment designations of the SoCAB, and contribute to several known adverse health effects from poor air quality. RR AIR-3 through RR AIR-4 would minimize criteria air pollutant emissions from construction equipment exhaust and fugitive dust through compliance with CARB and SCAQMD rules. Mitigation Measures AQ-1 and AQ-2 would reduce criteria air pollutants generated by project-related construction activities. Buildout of the proposed project would occur over a period of approximately 20 years or longer. Construction time frames and equipment for individual site-specific projects are not available at this time. There is a potential for multiple developments to be constructed at any one time, resulting in significant construction-related emissions. Therefore,

despite adherence to Mitigation Measures AQ-1 and AQ-2, project-level and cumulative impacts under Impact 5.2-2 would remain significant and unavoidable.

Impact 5.2-3

Incorporation of Mitigation Measures AQ-3 through AQ-5 would reduce operation-related criteria air pollutants generated by stationary and mobile sources. Mitigation Measures AQ-4 and AQ-5 would encourage and accommodate use of alternative-fueled vehicles and nonmotorized transportation. However, despite adherence to Mitigation Measures AQ-3 through AQ-5, project-level and cumulative impacts identified under Impact 5.2-3 would remain significant and unavoidable due to the magnitude of land use development associated with the proposed project.

2. Greenhouse Gas Emissions

Impact 5.5-1

Mitigation Measures AQ-3 through AQ-5 would encourage and accommodate use of alternative-fueled vehicles and nonmotorized transportation and ensure that GHG emissions from the buildout of the proposed project would be minimized. However, additional federal, state, and local measures would be necessary to reduce GHG emissions under the proposed project to meet the long-term GHG reduction goals under Executive Order S-03-05 and SB 32. The buildout GHG emissions inventory for the proposed project would generate 5.13 $MTCO_2e$/SP and would exceed the efficiency target of 2.4 $MTCO_2e$/SP. At this time, there is no plan past 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology (CCST 2012). Since no additional statewide measures are currently available, Impact 5.5-1 would remain significant and unavoidable.

3. Noise

Impact 5.9-1

With implementation of Mitigation Measures N-1 and N-2, construction noise impacts due to construction activities would be reduced to the extent feasible. However, feasible mitigation may not be effective at reducing construction-generated noise received at sensitive receptors to levels below the County Code thresholds throughout all periods of construction and at all receptors. Given the expected noise levels and the length of the construction activities, significant construction noise impacts would remain. Impact 5.9-1 would remain significant and unavoidable

4. Transportation and Traffic

Impact 5.13-1

The proposed project is anticipated to create significant impacts at several study intersections for the Future Year (2035) With Project scenario.

Mitigation Measures T-1 through T-4 would require various improvements at study area intersections to mitigate project impacts. These include, but are not limited to, adding turn lanes, widening lanes,

restriping lanes, expanding the Automated Traffic Surveillance and Control network, and improving traffic signal lights.

Improvements to three of the roadway intersections (Vermont Avenue/223rd Street, Vermont Avenue/Carson Street; and Vermont Avenue/Torrance Boulevard) would require the acquisition of right-of-way for the proposed improvements. Right-of-way acquisition at these intersections is believed to be infeasible due to existing development of adjacent land. Therefore, project impacts to these three roadway intersections are determined to be significant and unavoidable.

Additionally, as the primary responsibility for approving and/or completing certain improvements located outside of the specific plan area lies with agencies other than the County of Los Angeles (i.e., Cities of Los Angeles, Torrance and Carson), there is the potential that significant impacts may not be fully mitigated if such improvements are not completed for reasons beyond the County's control (e.g., the County cannot undertake or require improvements outside of the County's jurisdiction). Therefore, project impacts to intersections located in the Cities of Los Angeles, Torrance, and Carson are determined to be significant and unavoidable.

Impact 5.13-2

Funding and implementation of the transportation improvements outlined in Mitigation Measures MM T-2 through T-4 are under the control of Caltrans, the Metropolitan Transportation Authority of Los Angeles County (Metro), and the California Transportation Commission (CTC), not the County of Los Angeles. Therefore, the County cannot ensure that these improvements will be implemented, and Impact 5.13-2 would thus be significant and unavoidable.

Impact 5.13-3

Funding and implementation of the transportation improvements outlined in Mitigation Measures MM T-2 through T-4 are under the control of Caltrans, the Metropolitan Transportation Authority of Los Angeles County (Metro), and the California Transportation Commission (CTC), not the County of Los Angeles. Therefore, the County cannot ensure that these improvements will be implemented. Impact 5.13-3 would thus be significant and unavoidable.

VII. CONSIDERATIONS IN SUPPORT OF THE STATEMENT OF OVERRIDING CONSIDERATIONS

The following section describes the benefits of the project that outweigh the project's unavoidable adverse effects and provides specific reasons for considering the project acceptable even though the Final EIR has indicated that there will be significant project impacts to air quality, greenhouse gas emissions, noise, and transportation and traffic. Accordingly, this Statement of Overriding Considerations regarding potentially significant adverse environmental impacts resulting from the Proposed Project, as set forth below, has been prepared. Pursuant to CEQA Guidelines §15093(c), the Statement of Overriding Considerations will be included in the record of the project approval and will also be noted in the Notice of Determination. Each of the benefits identified below provides a separate and independent basis for overriding the significant environmental effects of the Proposed Project.

Provides Employment Opportunities for Highly Skilled Workers:

Specific Plan implementation will provide employment opportunities for a highly skilled workforce during both the construction and operation phases. Specific Plan buildout is estimated to generate a net increase of about 3,052 jobs. Construction of projects developed under the Specific Plan would also generate employment. Construction would involve multiple projects over an approximately 20-year buildout period; thus, construction employment is not estimated here. The construction effort of all projects combined would involve development of net increases of about 2,271 residential units and 1.7 million square feet of nonresidential land uses.

Reduce Vehicle Miles Traveled:

Implementation of West Carson TOD Specific Plan would result in a decrease in annual vehicle miles traveled (VMT) per service population from 134,863 VMT/service population/year (VMT/SP/Yr) to 100,336 VMT/SP/Yr, which is consistent with goals to reduce passenger VMT in the Southern California Association of Governments (SCAG)'s 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

Sustainability:

A key component of the Specific Plan is transforming the current circulation network, which largely supports vehicular travel, into a network that places a higher priority on the principles of complete streets and multimodal design. Streetscape improvements, proposed along key arterials, are intended to transform the auto-oriented streetscape into more sustainable, multimodal design. They include elements such as wider sidewalks, bicycle and transit facilities and amenities, landscaping and street trees, lighting, and landscaped medians.

Implements the Objectives Established for the Project:

The Specific Plan provides comprehensive direction for the development of the project area and facilitates implementation of the goals and policies of the County of Los Angeles 2035 General Plan (General Plan), including the vision for the TOD priority areas.

Overall, the purpose of the West Carson TOD Specific Plan is to expand opportunities for compact, infill development that is compatible with and supports the intensification of the Harbor-UCLA Medical Center yet is sensitive to the existing single-family neighborhoods. The Specific Plan facilitates increased housing opportunities and employment-generating uses proximate to the Carson Metro Station to take advantage of the significant local and regional transit services already provided in the area. The proposed pedestrian, bicyclist, and transit improvements along Carson Street, Vermont Avenue, and throughout the project area would help create an opportunity for redevelopment of a unique high-quality transit area in the Community of West Carson.

Buildout of the proposed project would allow for up to 3,574 dwelling units and 2,661,321 square feet of nonresidential uses within the project site, including net increases of 2,271 residential units and 1,704,985 square feet of nonresidential land uses.

Thus, Specific Plan implementation would achieve the nine objectives established for the project:

1. Adopt a specific plan for the project site consistent with the goals and policies of the County of Los Angeles 2035 General Plan.
2. Provide additional housing opportunities near transit consistent with the County's adopted Housing Element.
3. Create a distinct identity in the West Carson community.
4. Improve connections within the community and increase access to transit.
5. Ensure the health and safety of residents, visitors, and employees.
6. Ensure economic vitality of the project area.
7. Encourage a diverse mix of land use and transit-oriented development.
8. Improve the quality of life for existing residents with improvements to the public realm.
9. Maximize the use of sustainable development practices.

Conclusion

In balancing the benefits of the overall project described above with the Proposed Project's unavoidable and significant adverse environmental impacts, the County finds that the Proposed Project's benefits individually and collectively outweigh the unavoidable adverse impacts, such that these impacts are acceptable. The County further finds that substantial evidence presented in the Final EIR supports adopting the Final EIR despite the Proposed Project's potential adverse impacts.

This page intentionally left blank.

June 2018 | Mitigation Monitoring and Reporting Program

WEST CARSON TOD SPECIFIC PLAN

Los Angeles County Department of Regional Planning

Prepared for:

Los Angeles County Department of Regional Planning
Leon Freeman
320 West Temple Street, 13th Floor
Los Angeles, California 90012
213.974.6406

Prepared by:

PlaceWorks
William Halligan, Esq., Principal, Environmental Services
3 MacArthur Place, Suite 1100
Santa Ana, California 92707
714.966.9220
info@placeworks.com
www.placeworks.com

PLACEWORKS

Table of Contents

Table of Contents

List of Tables

1. Introduction

1.1 PURPOSE OF MITIGATION MONITORING PROGRAM

This Mitigation Monitoring Program has been developed to provide a vehicle by which to monitor mitigation measures and conditions of approval outlined in the Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2017011010. The Mitigation Monitoring Program has been prepared in conformance with Section 21081.6 of the Public Resources Code. Section 21081.6 states:

> (a) When making findings required by paragraph (1) of subdivision (a) of Section 21081 or when adopting a mitigated negative declaration pursuant to paragraph (2) of subdivision (c) of Section 21080, the following requirements shall apply:
>
> (1) The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted 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 which 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 or responsible agency, prepare and submit a proposed reporting or monitoring program.
>
> (2) The lead agency shall specify the location and custodian of the documents or other material which constitute the record of proceedings upon which its decision is based.

1.2 EIR SUMMARY

1.2.1 Project Location

Regional Location

The West Carson Transit Oriented District (TOD) Specific Plan is in the Community of West Carson in unincorporated Los Angeles County. West Carson encompasses about 2.3 square miles between the cities of Torrance to the north, Harbor City (a neighborhood in the City of Los Angeles) to the south, Carson to the east, and Los Angeles and Torrance to the west. West Carson is in the southwest part of the Los Angeles Basin, a coastal plain extending from the Pacific Ocean on the south to the Santa Monica Mountains and Puente Hills on the north. Most of West Carson slopes slightly down toward the east; elevations range from about 68 feet above mean sea level on the community's southwestern boundary to about 30 feet above mean sea level on the eastern boundary.

1. Introduction

Project Site

The West Carson TOD Specific Plan covers approximately 319.3 acres and is bounded generally by Normandie Avenue on the west, the 208th Street Drain and West Torrance Boulevard to the north, Interstate 110 (I-110; Harbor Freeway) on the east, and 223rd Street on the south. Major arterial roadways in and alongside the project site are Normandie Avenue and Vermont Avenue (north-south) and Torrance Boulevard, Carson Street, and 223rd Street (east-west).

The project site encompasses land within a half-mile radius and to the west of the Carson Metro Station, a bus rapid transit stop along a designated bus lane adjacent to I-110. A large portion of the project area contains the Harbor-UCLA Medical Center campus, which includes the Los Angeles Biomedical Research Institute (LA BioMed); the campus is major employment center that draws people from across the entire Los Angeles region. The project area is also just south of the Harbor Gateway Transit Center, a regional transit hub that connects the South Bay area to Downtown Los Angeles and other locations throughout the county.

Regional access to the project site is from I-110 via ramps at Torrance Boulevard and Carson Street. The Carson Metro Station for the Metro Silver Line is on I-110 below the Carson Street overpass and provides bus rapid transit service from San Pedro to El Monte via downtown Los Angeles.

1.2.2 Project Description

The West Carson TOD Specific Plan was prepared to guide future transit-oriented development throughout the project area in order to create a distinct identity; improve connections and access for all users; and improve the safety, economic vitality, and overall quality of life for the West Carson community.

The Specific Plan provides comprehensive direction for the development of the project area and facilitates implementation of the goals and policies of the County of Los Angeles 2035 General Plan (General Plan), including the vision for the TOD priority areas. It is intended to expand opportunities for compact, infill development that is compatible with and supports intensification while staying sensitive to the existing single-family neighborhoods.

The Specific Plan would be used in conjunction with the General Plan and Los Angeles County Code to provide more detailed design and development criteria for individual project proposals and public improvements in the project area. The plan defines the proposed land use plan, development standards, infrastructure improvements, design guidelines, and implementation programs for any proposed project in the Specific Plan area.

The Specific Plan would designate the following zoning districts for the project site: West Carson Residential 1 Zone, West Carson Residential 3 Zone, West Carson Residential 4 Zone, Residential Planned Development, Neighborhood Commercial, Unlimited Commercial, Industrial Flex, Harbor-UCLA Medical Zone, Mixed Use 1 Zone, Mixed Use 2 Zone, and Public Zone.

Based on the development potential of each zoning district, buildout of the Specific Plan would allow up to 3,574 residential units and 2,661,321 square feet of nonresidential uses. Currently, the plan area holds 1,303 residential units and about 956,335 square feet of nonresidential land uses. The maximum buildout intensity

would entail net increases of approximately 2,271 residential units (174 percent increase), and 1.7 million square feet of nonresidential land uses (178 percent increase).

In addition to land use and development, the Specific Plan plans for future improvements to mobility, parks, and infrastructure (i.e., water, sewer, and wastewater) in the plan area.

1.3 ENVIRONMENTAL IMPACTS

1.3.1 Impacts Considered Less Than Significant

The EIR identified various thresholds from the CEQA Guidelines among a number of environmental categories that would not be significantly impacted by the proposed project and therefore did not require mitigation. Impacts to the following environmental resources were found to be less than significant:

- Aesthetics
- Geology and Soils
- Hydrology and Water Quality
- Land Use and Planning
- Population and Housing
- Recreation

1.3.2 Potentially Significant Adverse Impacts That Can Be Mitigated, Avoided, or Substantially Lessened

The following were identified as having potentially significant impacts that could be reduced, avoided, or substantially lessened through implementation of mitigation measures:

- Cultural Resources
- Hazards and Hazardous Materials
- Public Services
- Tribal Cultural Resources
- Utilities and Service Systems

1.3.3 Unavoidable Significant Adverse Impacts

The following impacts were identified as Significant and Unavoidable in the EIR:

- Air Quality
- Greenhouse Gas Emissions
- Noise
- Transportation and Traffic

1. Introduction

This page intentionally left blank.

2. Mitigation Monitoring Requirements

2.1 COUNTY OF LOS ANGELES

The County is the designated lead agency for the Mitigation Monitoring and Reporting Program (MMRP). The County is responsible for implementation of the MMRP, with the County Department of Regional Planning (DRP) as lead in coordination. The MMRP will be used by County staff responsible for ensuring compliance with mitigation measures associated with the proposed Specific Plan. Monitoring will consist of review of appropriate documentation, such as plans or reports prepared by the party responsible for implementation or by field observation of the mitigation measure during implementation.

Table 3-1 (Mitigation Monitoring and Reporting Program) identifies the mitigation measures by resource area. The table also provides the specific mitigation monitoring requirements, including implementation documentation, monitoring activity, timing and responsible monitoring party.

3. Mitigation Monitoring Requirements

This page intentionally left blank.

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
5.2 AIR QUALITY					
AQ-1	Applicants for new development projects within the West Carson TOD Specific Plan shall require the construction contractor to use equipment that meets the US Environmental Protection Agency (EPA) Tier 4 emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower, unless it can be demonstrated to the County of Los Angeles that such equipment is not available. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by the California Air Resources Board's regulations. Prior to construction, the project engineer shall ensure that all demolition and grading plans clearly show the requirement for EPA Tier 4 or higher emissions standards for construction equipment over 50 horsepower. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the County of Los Angeles. The construction equipment list shall state the makes, models, and numbers of construction equipment onsite. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449.	Use construction equipment per standards identified in AQ-1 Identify those standards in project plans	Prior to and during construction	Project Applicants, Construction Contractors, and Project Engineers	County of Los Angeles Department of Regional Planning
AQ-2	Applicants for new development projects within the West Carson TOD Specific Plan shall require the construction contractor to prepare a dust control plan and implement the following measures during ground-disturbing activities—in addition to the existing requirements for fugitive dust control under South Coast Air Quality Management District (SCAQMD) Rule 403—to further reduce PM10 and PM2.5 emissions. The County of Los Angeles shall verify that these measures have been implemented during normal construction site inspections. • Following all grading activities, the construction contractor shall	Prepare a dust control plan Implement dust control measures identified in AQ-2	Prior to and during ground-disturbing activities	Project Applicants and Construction Contractors	County of Los Angeles Department of Regional Planning

2. Mitigation Monitoring Requirements

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
	reestablish ground cover on the construction site through seeding and watering. • During all construction activities, the construction contractor shall sweep streets with SCAQMD Rule 1186–compliant, PM10-efficient vacuum units on a daily basis if silt is carried over to adjacent public thoroughfares or occurs as a result of hauling. • During all construction activities, the construction contractor shall maintain a minimum 24-inch freeboard on trucks hauling dirt, sand, soil, or other loose materials and shall tarp materials with a fabric cover or other cover that achieves the same amount of protection. • During all construction activities, the construction contractor shall water exposed ground surfaces and disturbed areas a minimum of every three hours on the construction site and a minimum of three times per day. • During all construction activities, the construction contractor shall limit onsite vehicle speeds on unpaved roads to no more than 15 miles per hour.				
AQ-3	Prior to issuance of a building permit for new development projects within the West Carson TOD Specific Plan, the property owner/developer shall show on the building plans that all major appliances (dishwashers, refrigerators, clothes washers, and dryers) to be provided/installed are Energy Star appliances. Installation of Energy Star appliances shall be verified by the County of Los Angeles prior to issuance of a certificate of occupancy.	Require Energy Star appliances on building plans Install such appliances	Prior to issuance of building permits	Property Owner/Developer	County of Los Angeles Department of Regional Planning
AQ-4	Prior to issuance of building permits for residential development projects within the West Carson TOD Specific Plan, 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 County of Los Angeles 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	Indicate on building plans that electric vehicle charging is required for multifamily dwellings Install vehicle charging stations	Prior to issuance of building permits	Property Owner/Developer	County of Los Angeles Department of Regional Planning

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
	Voluntary Measures) of the CALGreen Code.				
AQ-5	Prior to issuance of building permits for nonresidential development projects within the West Carson TOD Specific Plan, 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 County of Los Angeles 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 nonresidential building with 30 or more parking spaces. Installation shall be consistent with Section A5.106.5.3 (Nonresidential Voluntary Measures) of the CALGreen Code.	Incorporate design features as outlined in AQ-5 Install those features	Prior to issuance of building permits; prior to certification of occupancy	Property Owner/Developer	County of Los Angeles Department of Regional Planning
5.3 CULTURAL RESOURCES					
CUL-1	As a condition of approval, future development or redevelopment projects on any of the properties listed in Table 5.3-1, *Potentially Historic Properties in the Specific Plan Area*, of the West Carson TOD Specific Plan EIR (SCH No. 2017011010) that may involve a substantial adverse change as defined by Public Resources Code 5020.1 shall require the following of the property owner or project applicant/developer: • Preparation of an intensive-level historical evaluation of the subject property. The evaluation shall be conducted in accordance with all applicable federal, state, and local guidelines for evaluating historical resources. Recommendations for preservation should be considered, if applicable. The historical evaluation shall be submitted to the County of Los Angeles	Prepare and submit a historical evaluation Prepare a Phase I cultural resources investigation	Prior to issuance of building permits	Project Owner/Developer	County of Los Angeles Department of Regional Planning

2. Mitigation Monitoring Requirements

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
	Department of Regional Planning for review and approval. • Preparation of a Phase I cultural resources investigation that complies with current standards and guidelines for any properties not previously improved (e.g., open space or native soils).				
CUL-2	As a condition of approval for projects involving subterranean levels and/or parking, future project applicants/developers shall provide written evidence to the County of Los Angles that a County-certified archaeologist has been retained to observe grading activities greater than six feet in depth and salvage and catalogue archaeological resources as necessary. The archaeologist shall be present at the pregrade conference; shall establish procedures for archaeological resource surveillance; and shall establish, in cooperation with the applicant, procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts as appropriate. If the archaeological resources are found to be significant, the archaeological monitor shall determine appropriate actions, in cooperation with the project applicant/developer, for exploration and/or salvage. The archaeologist shall prepare a comprehensive report including appropriate records for the California Department of Parks and Recreation (Building, Structure, and Object Record; Archaeological Site Record; or District Record, as applicable). If any resources are excavated, the project applicant/developer shall prepare excavated material to the point of identification. Future applicants/developers shall offer excavated finds for curatorial purposes to the County of Los Angeles, or its designee, on a first refusal basis. These actions, as well as final mitigation and disposition of the resources, shall be subject to the approval of the County. The project applicant/developer shall pay curatorial fees if an applicable fee program has been adopted by the Board of Supervisors, and such fee program is in effect at the time of presentation of the materials to the County or its designee, all in a manner meeting the approval of the County.	Retain an archaeologist who sets and implements procedures related to discovery of archaeological artifacts Follow procedures outlined in CUL-2 for mitigation and/or removal of archaeological resources	Prior to project approval; during project construction	Project Applicants/ Developers	County of Los Angeles Department of Regional Planning

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
CUL-3	As a condition of approval for projects involving subterranean levels and/or parking, the future project applicant/developer shall retain a qualified paleontologist to monitor grading activities greater than six feet in depth. Deep excavations may impact undisturbed deposits in older Quaternary alluvium, which is typically associated with fossils. The qualified paleontologist shall be present during the pre-grading meeting to discuss paleontological sensitivity and to assess whether scientifically important fossils have the potential to be encountered. The paleontologist shall determine, based on consultation with the County, when monitoring of grading activities is needed based on the onsite soils and final grading plans. All paleontological work to assess and/or recover a potential resource at the project site shall be conducted under the direction of the qualified paleontologist and follow the standard protocols of the Natural History Museum of Los Angeles County. If any fossil remains are uncovered during earth-moving activities, all heavy equipment shall be diverted at least 50 feet from the fossil site until the monitor has had an opportunity to examine the remains and determines that earth-moving can resume. The extent of land area that is prohibited from disturbance shall be at the discretion of the paleontological monitor. Samples of older Quaternary alluvium shall be collected as necessary for processing and shall be examined for very small vertebrate fossils. The paleontologist shall prepare a report of the results of any findings following accepted professional practice and submit the report for review by the County of Los Angeles Department of Regional Planning.	Retain an paleontologist who sets and implements procedures related to discovery of paleontological artifacts Follow procedures outlined in CUL-3 for mitigation and/or removal of paleontological resources	Prior to project approval; during project construction	Project Applicants/ Developers	County of Los Angeles Department of Regional Planning
5.6 HAZARDS AND HAZARDOUS MATERIALS					
HAZ-1	In the event that building materials are encountered during demolition activities that are suspected of being asbestos-containing materials (ACMs), these materials shall be assumed to contain asbestos and shall be handled, removed, transported, and/or disposed of in accordance with applicable ACM regulations. Any required removal of asbestos shall be made under the direction of a Cal/OSHA-certified asbestos consultant.	Dispose of materials suspected of containing asbestos per procedures outlined in HAZ-1	During demolition activities	Project Applicants/ Developers; Construction Contractors	County of Los Angeles; Cal/OSHA
HAZ-2	As a condition of approval for individual development projects on former or existing commercial or industrial sites, the project applicant	Prepare a Phase I Environmental Site	Prior to the issuance of any grading permit	Project Applicants	County of Los Angeles Department of Regional

2. Mitigation Monitoring Requirements

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
	shall prepare and submit a Phase I Environmental Site Assessment (ESA) to the County of Los Angeles to identify environmental conditions of the development site and determine whether contamination is present. The Phase I ESA shall be prepared by an Environmental Professional in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527.13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." If recognized environmental conditions related to soils or groundwater are identified in the Phase I ESA, the project applicant shall have soil and soil gas sampling performed, as required, as a part of a Phase II ESA. If contamination is found at significant levels, the project applicant shall remediate all contaminated soils in accordance with state and local agency requirements and with the oversight of the California Department of Toxic Substances Control, Regional Water Quality Control Board, Los Angeles County Fire Department, etc. All contaminated soils and/or material encountered shall be disposed of at a regulated site and in accordance with applicable laws and regulations prior to the completion of grading. Each Phase I ESA conducted for projects that involve demolition activities shall include an inspection for lead-based paint conducted by a licensed or certified lead inspector/assessor and a survey for asbestos-containing materials conducted by a California Certified Asbestos Consultant. Prior to the issuance of building permits, a report documenting the completion, results, and follow-up remediation on the recommendations, if any, shall be provided to the Los Angeles County Department of Regional Planning evidencing that all site remediation activities have been completed.	Assessment			Planning

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
5.9 NOISE					
N-1	As required by the Los Angeles County Code Section 12.08.430, construction activities are prohibited between the hours of 7 PM and 7 AM on weekdays and Saturdays, or at any time on Sundays or holidays. Construction is also required to comply with the maximum noise levels from mobile equipment specified in Section 12.08.430.	Comply with adopted County noise regulations	During construction activities	Project Applicants/ Developers	County of Los Angeles Department of Regional Planning
N-2	Prior to the issuance of demolition, grading and/or construction permits, applicants for individual development projects within 500 feet of noise-sensitive receptors (e.g., residences, hospitals, schools) shall conduct a project-level construction noise analysis to evaluate potential impacts on sensitive receptors. The analysis shall be conducted once the final construction equipment list that will be used for demolition and grading activities is determined. The project-level noise analysis shall be prepared, reviewed, and approved by the County of Los Angeles, City of Los Angeles, and/or City of Carson, as applicable. If the analysis determines that demolition and construction activities would result in an impact to identified noise-sensitive receptors, then specific measures to attenuate the noise impact shall be outlined in the analysis and reviewed and approved by the County. Specific measures may include, but are not limited to, the following best management practices: • Post a construction site notice near the construction site access point or in an area that is clearly visible to the public. The notice shall include the following: job site address; permit number, name, and phone number of the contractor and owner; dates and duration of construction activities; construction hours allowed; and the County of Los Angeles and construction contractor phone numbers where noise complaints can be reported and logged. • Consider the installation of temporary sound barriers for construction activities immediately adjacent to occupied noise-sensitive structures. • Restrict haul routes and construction-related traffic to the least noise-sensitive times of the day. • Reduce nonessential idling of construction equipment to no more	Conduct a project-level construction noise analysis per N-2 Implement noise reduction measures	Prior to issuance of demolition, grading, and/or construction permits	Project Applicants/ Developers; Construction Contractor	County of Los Angeles Department of Regional Planning

2. Mitigation Monitoring Requirements

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
than five minutes. • Ensure that all construction equipment is monitored and properly maintained in accordance with the manufacturer's recommendations to minimize noise. • Fit all construction equipment with properly-operating mufflers, air intake silencers, and engine shrouds, no less effective than as originally equipped by the manufacturer, to minimize noise emissions. • If construction equipment is equipped with back-up alarm shut offs, switch off back-up alarms and replace with human spotters, as feasible. • Stationary equipment (such as generators and air compressors) and equipment maintenance and staging areas shall be located as far from existing noise-sensitive land uses, as feasible. • To the extent feasible, use acoustic enclosures, shields, or shrouds for stationary equipment such as compressors and pumps. • Shut off generators when they are not needed. • Coordinate deliveries to reduce the potential of trucks waiting to unload and idling for long periods of time. • Grade surface irregularities on construction sites to prevent potholes from causing vehicular noise. • Minimize the use of impact devices such as jackhammers, pavement breakers, and hoe rams. Where possible, use concrete crushers or pavement saws rather than hoe rams for tasks such as concrete or asphalt demolition and removal. The final noise-reduction measures to be implemented shall be determined by the construction-level noise analysis. The final noise-reduction measures shall be included on all construction and building documents and/or construction management plans and submitted for verification to the County of Los Angeles; implemented by the construction contractor through the duration of the construction phase; and discussed at the predemolition, pregrade, and/or preconstruction meetings.				

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
N-3	Prior to issuance of grading and construction permits, applicants for individual development projects that involve vibration-intensive construction activities—such as pile drivers, jack hammers, and vibratory rollers—within 100 feet of off-site, vibration-sensitive receptors and/or structures,[1] shall prepare and submit to the County of Los Angeles an acoustical study to evaluate potential construction-related vibration damage impacts. The vibration assessment shall be prepared by a qualified acoustical engineer and be based on the Federal Transit Administration (FTA) vibration-induced architectural damage criterion AND vibration annoyance effects. If the acoustical study determines a potential exceedance of the FTA thresholds, measures shall be identified that ensure vibration levels are reduced to below the thresholds. Measures to reduce vibration levels can include use of less-vibration-intensive equipment (e.g., drilled piles and static rollers) and/or construction techniques (e.g., nonexplosive rock blasting and use of hand tools) and preparation of a preconstruction survey report to assess the preconstruction, existing conditions of the potentially affected sensitive receptor or structure. Identified measures shall be included on all construction and building documents and submitted for verification to the County.	Prepare and submit an acoustical study Include vibration-reduction measures in project plans	Prior to issuance of grading and construction permits	Project Applicants/ Developers; Construction Contractors	County of Los Angeles Department of Regional Planning
5.11 PUBLIC SERVICES					
PS-1	On-going throughout implementation of the Specific Plan, the County shall coordinate with LACoFD to ensure that LACoFD facilities are adequate to maintain satisfactory response times within the Specific Plan area.	Coordinate with LACoFD	Ongoing	County of Los Angeles	County of Los Angeles Department of Regional Planning
PS-2	Each subdivision map shall comply with the applicable County Fire Code requirements for fire apparatus access roads, fire flows, and fire hydrants. Final fire flows shall be determined by LACoFD in	Comply with adopted fire code requirements	Prior to construction	Project Applicants/ Developers	County of Los Angeles, LACoFD

[1] Vibration-sensitive receptors would include, for example, residences, schools, medical facilities, and houses of worship. Vibration-sensitive structures would include, for example, historical buildings, audio/video recording studios,

2. Mitigation Monitoring Requirements

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
	accordance with Appendix B of the County Fire Code. The required fire apparatus road and water requirements shall be in place prior to construction.				
5.13 TRANSPORTATION AND TRAFFIC					
T-1	Prior to issuance of building permits for any project forecast to generate 100 or more peak hour trips, as determined by the Los Angeles County Department of Public Works, Traffic and Lighting Division, the property owner/developer shall submit to the County a traffic study to identify when the improvements identified in the West Carson Transit Oriented District Specific Plan EIR Traffic Impact Study, IBI Group, June 2017 (Appendix I of this DEIR) shall be designed and constructed. a) The traffic study will specify the timing, funding, construction and fair-share responsibilities for all traffic improvements necessary to maintain satisfactory levels of service within the specific plan area and surrounding jurisdictions, as defined by the County's General Plan, based on thresholds of significance, performance standards and methodologies utilized in this DEIR, Metro's CMP Program and established in County's Traffic Impact Analysis Guidelines. b) The property owner/developer shall construct, bond for or enter into a funding agreement for necessary circulation system improvements, as determined by the Los Angeles County Department of Public Works, Traffic and Lighting Division. At minimum, fair-share calculations shall include intersection improvements, rights-of-way, and construction costs, unless alternative funding sources have been identified to help pay for the improvement.	Prepare and submit a traffic study Construct or fund necessary circulation improvements	Prior to issuance of building permits	Project Applicants/ Developers	County of Los Angeles Department of Public Works
T-2	The County shall implement over time objectives and policies contained within the West Carson Transit Oriented District Specific Plan and the adopted General Plan Transportation Element. Implementation of those policies will help mitigate any potential impacts of Project growth and/or highway amendments on the transportation system.	Implement adopted objectives and policies related to transportation per T-2	Ongoing	County of Los Angeles	County of Los Angeles Department of Regional Planning

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
T-3	The County of Los Angeles shall continue to secure the funding needed to implement the future planned improvements within the specific plan area. A variety of funding sources shall be explored, such as Metro's CMP Fee Program as described under T-3, Metro Call for Project funds, and federal and state grant opportunities. If the CMP fee program is not adopted by Metro and the County of Los Angeles, other funding sources for regional transportation needs in the specific plan area, including Caltrans facilities, shall be pursued such as a potential West Carson Development Impact Fee Program, development agreements for large projects, and/or mitigation agreements between future applicants and Caltrans for projects that impact Caltrans facilities.	Pursue funding for future transportation improvements.	Ongoing	County of Los Angeles	County of Los Angeles Department of Public Works
T-4	The County shall work with Caltrans as they prepare plans to add additional lanes or complete other improvements to various freeways within and adjacent to unincorporated areas. This includes adding or extending mixed flow general purpose lanes, adding or extending existing HOV lanes, adding Express Lanes (high occupancy toll lanes), incorporating truck climbing lanes, improving interchanges and other freeway related improvements.	Coordinate with Caltrans related to freeway improvements	Ongoing	County of Los Angeles	County of Los Angeles Department of Public Works
T-5	The County shall require traffic engineering firms retained to prepare traffic impact studies for future development projects to consult with Caltrans, when a development proposal meets the requirements of statewide, regional, or areawide significance per CEQA Guidelines §15206(b). When preparing traffic impact studies, the most up to date Guide for the Preparation of Traffic Impact Studies from Caltrans shall be followed. Proposed developments meeting the criteria of statewide, regional or areawide include: • Proposed residential developments of more than 500 dwelling units • Proposed shopping centers or business establishments employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space. • Proposed commercial office buildings employing more than 1,000 persons or encompassing more than 250,000 square feet	Consult with Caltrans related to project impacts	Prior to project approvals	Project Applicants/Developers; Project Engineers	County of Los Angeles Department of Public Works

2. Mitigation Monitoring Requirements

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
	of floor space • Proposed hotel/motel developments of more than 500 rooms When the CEQA criteria of regional significance are not met, Caltrans recommends that Project Applicants consult with Caltrans when a proposed development includes the following characteristics: • All proposed developments that have the potential to cause a significant impact to state facilities (right-of-way, intersections, interchanges, etc.) and when required mitigation improvements are proposed in the initial study. Mitigation concurrence should be obtained from Caltrans as early as possible. • Any development that assigns 50 or more trips (passenger car equivalent trips) during peak hours to a state highway/freeway. • Any development that assigns 10 or more trips (passenger car equivalent trips) during peak hours to an off-ramp. On/off-ramps that are very close to each other in which the project trips may cause congestion on the left-turn lane storage to the on-ramp. • Any development located adjacent to or within 100 feet of a state highway facility and may require a Caltrans Encroachment Permit. (Exceptions: additions to single family homes or 10 residential units or less). • When the County cannot determine whether or not Caltrans will expect a traffic impact analysis pursuant to CEQA.				
5.14 TRIBAL CULTURAL RESOURCES					
TCR-1	If human remains are encountered, the County or its contractor shall halt work in the vicinity (within 100 feet) of the find and contact the Los Angeles County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98. The NAHC will designate an MLD for the remains per PRC Section 5097.98. Until the landowner has conferred with the MLD, County shall ensure that the immediate vicinity where the discovery occurred is not disturbed	Halt work upon discovery of human remains Comply with provisions per TCR-1 related to disturbance of human remains	During earth moving activities	Project Applicants/ Developers; Construction Contractor	County of Los Angeles Department of Regional Planning

Table 3-1 Mitigation Monitoring and Reporting Program (MMRP)

	Mitigation Measure	Action Required	When Implementation/ Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
	by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.				
5.15 UTILITIES AND SERVICE SYSTEMS					
Wastewater Treatment and Collection					
USS-1	Prior to the issuance of grading permits for individual development projects in the West Carson TOD Specific Plan area, the Los Angeles County Department of Public Works shall review the recommended sewer line replacement and upsizing improvements outlined in the "West Carson Environmental Assessment" prepared by IBI Group, Inc. (dated April 25, 2018) and determine whether sewer improvements would be required as part of the proposed projects.	Determine if sewer improvements are required Submit a site-specific sewer flow monitoring study	Prior to issuance of grading permits	County of Los Angeles (Public Works); Project Applicants/Developers	County of Los Angeles Department of Public Works
Water Supply and Distribution Systems					
USS-2	Prior to the issuance of grading permits for individual development projects in the West Carson TOD Specific Plan area that would be served by the trunk line south of 220th Street, the Los Angeles County Department of Public Works shall review the recommended water conveyance system improvements outlined in the "West Carson Water Area Study" prepared by IBI Group, Inc. (dated August 13, 2017) and determine whether recommended improvements would be required as part of the proposed projects. To assist in the determination, the Department of Public Works may require the project applicant/developer to submit a site-specific water flow monitoring study to provide a more detailed analysis of the true water flow depths over time to determine if the potential surcharge conditions would occur due to project development. The water flow monitoring study shall be submitted to the Department of Public Works for review and approval.	Review recommended water conveyance system improvements Submit a site-specific water flow monitoring study	Prior to issuance of grading permits	County of Los Angeles (Public Works); Project Applicants/Developers	County of Los Angeles Department of Public Works

2. Mitigation Monitoring Requirements

This page intentionally left blank.

3. Report Preparation

3.1 LIST OF PREPARERS

PlaceWorks

William Halligan, Esq., Principal, Environmental Services

Ryan Potter, AICP, Associate

Los Angeles County Department of Regional Planning

Leon Freeman, Regional Planning Assistant II

3. Report Preparation

This page intentionally left blank.

June 2018 | Final Environmental Impact Report
State Clearinghouse No. 2017011010

WEST CARSON TOD SPECIFIC PLAN

Los Angeles County Department of Regional Planning

Prepared for:

Los Angeles County Department of Regional Planning
Leon Freeman
320 West Temple Street, 13th Floor
Los Angeles, California 90012
213.974.6406

Prepared by:

PlaceWorks
William Halligan, Esq., Principal, Environmental Services
3 MacArthur Place, Suite 1100
Santa Ana, California 92707
714.966.9220
info@placeworks.com
www.placeworks.com

PLACEWORKS

Table of Contents

Table of Contents

This page intentionally left blank.

1. Introduction

1.1 INTRODUCTION

This Final Environmental Impact Report (FEIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) as amended (Public Resources Code §§ 21000 et seq.) and CEQA Guidelines (California Code of Regulations §§ 15000 et seq.).

According to the CEQA Guidelines, Section 15132, the FEIR shall consist of:

(a) The Draft Environmental Impact Report (DEIR) or a revision of the Draft;

(b) Comments and recommendations received on the DEIR either verbatim or in summary;

(c) A list of persons, organizations, and public agencies comments on the DEIR;

(d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process; and

(e) Any other information added by the Lead Agency.

This document contains responses to comments received on the DEIR for the West Carson TOD Specific Plan during the public review period, which began February 28, 2018 and closed April 13, 2018. This document has been prepared in accordance with CEQA and the CEQA Guidelines and represents the independent judgment of the Lead Agency. This document and the circulated DEIR comprise the FEIR, in accordance with CEQA Guidelines, Section 15132.

1.2 FORMAT OF THE FEIR

This document is organized as follows:

Section 1, Introduction. This section describes CEQA requirements and content of this FEIR.

Section 2, Response to Comments. This section provides a list of agencies and interested persons commenting on the DEIR; copies of comment letters received during the public review period, and individual responses to written comments. To facilitate review of the responses, each comment letter has been reproduced and assigned a number (A-1 through A-2 for letters received from agencies and organizations, and R-1 for a letter received from residents). Responses to comments received at a public meeting on the Draft EIR held March 8, 2018 are also provided. Individual comments have been numbered for each letter and the letter is followed by responses with references to the corresponding comment number.

Section 3. Revisions to the Draft EIR. This section contains revisions to the DEIR text and figures as a result of the comments received by agencies and interested persons as described in Section 2, and/or errors and omissions discovered subsequent to release of the DEIR for public review.

The responses to comments contain material and revisions that will be added to the text of the FEIR. Los Angeles County (County) staff has reviewed this material and determined that none of this material constitutes the type of significant new information that requires recirculation of the DEIR for further public comment under CEQA Guidelines Section 15088.5. None of this new material indicates that the project will result in a significant new environmental impact not previously disclosed in the DEIR. Additionally, none of this material indicates that there would be a substantial increase in the severity of a previously identified environmental impact that will not be mitigated, or that there would be any of the other circumstances requiring recirculation described in Section 15088.5.

1.3 CEQA REQUIREMENTS REGARDING COMMENTS AND RESPONSES

CEQA Guidelines Section 15204 (a) outlines parameters for submitting comments and reminds persons and public agencies that the focus of review and comment of DEIRs should be "on the sufficiency of the document in identifying and analyzing possible impacts on the environment and ways in which significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. At the same time, reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible. …CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR."

CEQA Guidelines Section 15204 (c) further advises, "Reviewers should explain the basis for their comments, and should submit data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to Section 15064, an effect shall not be considered significant in the absence of substantial evidence." Section 15204 (d) also states, "Each responsible agency and trustee agency shall focus its comments on environmental information germane to that agency's statutory responsibility." Section 15204 (e) states, "This section shall not be used to restrict the ability of reviewers to comment on the general adequacy of a document or of the lead agency to reject comments not focused as recommended by this section."

In accordance with CEQA, Public Resources Code Section 21092.5, copies of the written responses to public agencies will be forwarded to those agencies at least 10 days prior to certifying the environmental impact report. The responses will be forwarded with copies of this FEIR, as permitted by CEQA, and will conform to the legal standards established for response to comments on DEIRs.

2. Response to Comments

Section 15088 of the CEQA Guidelines requires the Lead Agency (Los Angeles County) to evaluate comments on environmental issues received from public agencies and interested parties who reviewed the DEIR and prepare written responses.

This section provides all written responses received on the DEIR and the County's responses to each comment.

Comment letters and specific comments are given letters and numbers for reference purposes. Where sections of the DEIR are excerpted in this document, the sections are shown indented. Changes to the DEIR text are shown in underlined text for additions and ~~strikeout~~ for deletions.

The following is a list of agencies and persons that submitted comments on the DEIR during the public review period.

2. Response to Comments

This page intentionally left blank.

LETTER A1 – Los Angeles County Fire Department (3 Pages)

COUNTY OF LOS ANGELES
FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 881-2401
www.fire.lacounty.gov

"Proud Protectors of Life, Property, and the Environment"

DARYL L. OSBY
FIRE CHIEF
FORESTER & FIRE WARDEN

March 15, 2018

Maya Saraf, Planning Assistant
Department of Regional Planning
Community Studies West Section
320 West Temple Street
Los Angeles, CA 90012

Dear Ms. Saraf:

DRAFT ENVIRONMENTAL IMPACT REPORT, "WEST CARSON TOD SPECIFIC PLAN," COVERS APPROXIMATELY 319.3 ACRES PREPARED TO GUIDE FUTURE TRANSIT-ORIENTED DEVELOPMENT THROUGHOUT THE PROJECT AREA TO IMPROVE CONNECTIONS AND ACCESS FOR ALL USERS; AND IMPROVE THE SAFETY, ECONOMIC VITALITY, AND OVERALL QUALITY OF LIFE FOR THE COMMUNITY, 1000 WEST CARSON STREET, TORRANCE, FFER 201800031

The Draft Environmental Impact Report has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department.

The following are their comments:

PLANNING DIVISION:

Our previous comments are still valid and were as follows:

A1-1

Table 5.11-1 Fire Stations Serving the Project Site should be corrected as follows (recommended changes are underlined):

SERVING THE UNINCORPORATED AREAS OF LOS ANGELES COUNTY AND THE CITIES OF:

AGOURA HILLS	CALABASAS	EL MONTE	INDUSTRY	LAWNDALE	PARAMOUNT	SIGNAL HILL
ARTESIA	CARSON	GARDENA	INGLEWOOD	LOMITA	PICO RIVERA	SOUTH EL MONTE
AZUSA	CERRITOS	GLENDORA	IRWINDALE	LYNWOOD	POMONA	SOUTH GATE
BALDWIN PARK	CLAREMONT	HAWAIIAN GARDENS	LA CANADA-FLINTRIDGE	MALIBU	RANCHO PALOS VERDES	TEMPLE CITY
BELL	COMMERCE	HAWTHORNE	LA HABRA	MAYWOOD	ROLLING HILLS	WALNUT
BELL GARDENS	COVINA	HERMOSA BEACH	LA MIRADA	NORWALK	ROLLING HILLS ESTATES	WEST HOLLYWOOD
BELLFLOWER	CUDAHY	HIDDEN HILLS	LA PUENTE	PALMDALE	ROSEMEAD	WESTLAKE VILLAGE
BRADBURY	DIAMOND BAR	HUNTINGTON PARK	LAKEWOOD	PALOS VERDES ESTATES	SAN DIMAS	WHITTIER
	DUARTE		LANCASTER		SANTA CLARITA	

2. Response to Comments

Station and Address	Equipment	Daily Staff
Station #36 127 W. 223rd Street, Carson	2 fire engines (4 persons each) 1 paramedic *squad* (2 persons)	2 captains, 2 firefighter specialists, 2 firefighter paramedics, 4 firefighters
Station #116 755 E. Victoria Street, Carson	1 fire truck (4 persons) 1 fire engine (3 persons) 1 paramedic *squad* (2 persons)	2 captains, 2 firefighter specialists, 3 firefighter paramedics, 2 firefighters
Station #127 2049 E. 223rd Street, Carson	1 quint* (4 persons) 1 fire engine (2 persons) *(quint & fire engine respond together as a light force)*	1 captain, 2 firefighter specialists, 3 firefighters
*A quint is a combination fire engine/ladder truck.		

A1-1 Cont'd

Additionally, we have updated the referenced response times as follows:

During 2017, Fire Station 36's jurisdiction had an average emergency response time of 4:58 minutes:seconds, Fire Station 116's had an average emergency response time of 4:49 minutes:seconds, and Fire Station 127's had an average emergency response time of 5:14 minutes:seconds.

A1-2

LAND DEVELOPMENT UNIT:

1. The Land Development Unit has no additional comments for the "Draft Environmental Impact Report" for the West Carson Transit Orientated District Specific Plan. The development of this project must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.

2. Specific fire and life safety requirements for the construction phase will be addressed at the building plan check.

A1-3

There may be additional fire and life safety requirements during this time. For any questions regarding this report, please contact FPEA, Wally Collins at (323) 890-4243 or Wally.Collins@fire.lacounty.gov.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

The statutory responsibilities of the County of Los Angeles Fire Department's Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance.

A1-4

Maya Saraf, Planning Assistant
March 15, 2018
Page 3

The County of Los Angeles Fire Department's Forestry Division has no objection to the proposed project. A1-4 Cont'd

HEALTH HAZARDOUS MATERIALS DIVISION:

The Health Hazardous Materials Division of the Los Angeles County Fire Department has no comments or requirements for the project at this time. A1-5

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

Very truly yours,

MICHAEL Y. TAKESHITA, ACTING CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

MYT:ac

2. Response to Comments

This page intentionally left blank.

A1. Response to Comments from Los Angeles County Fire Department (LACoFD), dated March 15, 2018.

A1-1 The comment sets forth certain corrections to Table 5.11-1 in DEIR Section 5.11, Public Services, Page 5.11-2. Added text is underlined and deleted text shown in ~~strikeout~~.

Table 5.11-1 Fire Stations Serving the Project Site

Station and Address	Equipment	Daily Staffing
Fire Station #36 127 W. 223rd Street, Carson	2 fire engines (4 persons each) 1 paramedic ~~truck~~squad (2 persons)	2 captains, 2 firefighter specialists; 2 firefighter paramedics; 4 firefighters
Fire Station #116 755 E. Victoria Street, Carson	1 fire truck (4 persons) 1 fire engine (3 persons) 1 paramedic ~~truck~~squad (2 persons)	2 captains, 2 firefighter specialists; 3 firefighter paramedics; 2 firefighters
Fire Station #127 2049 E. 223rd Street, Carson	1 quint (combination engine/ladder truck) (4 persons) 1 fire engine (2 persons) (Quint and fire engine respond together as a light force)	1 captain, 2 firefighter specialists, 3 firefighters

Source: ~~Vidales~~Takeshita 201~~7~~8.

The DEIR is hereby revised per the comment in Chapter 3, *Revisions to the Draft EIR*, of this FEIR.

A1-2 The comment is an update to response time information in DEIR Section 5.11, Public Services, Page 5.11-2. Added text is underlined and deleted text shown in ~~strikeout~~.

During 201~~6~~7, Fire Station #36 had an average emergency response time of 4:~~41~~58 minutes, Fire Station #116 had an average emergency response time of 4:~~54~~49 minutes, and Fire Station #127 had an average emergency response time of 5:14 minutes (~~Vidales~~Takeshita 201~~7~~8).

The DEIR is hereby revised per the comment in Chapter 3, *Revisions to the Draft EIR*, of this FEIR.

A1-3 The comment states that the LACoFD Land Development Unit currently has no additional comments; but may have additional comments during building plan check. As the Proposed Project is a Specific Plan and not a specific development proposal, the referenced plan check is that for individual development projects pursuant to the Specific Plan. The comment does not address the adequacy of the EIR and no response is required.

2. Response to Comments

A1-4 The comment states that the LACoFD Forestry Division has no objection to the project. No response is required.

A1-5 The comment states that the LACoFD Health Hazardous Materials Division has no comments or requirements for the project at this time. No response is needed.

LETTER A2 – California Department of Transportation (Caltrans) District 7 (3 Pages)

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 897-8391
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Serious Drought.
Making Conservation
a California Way of Life.

April 10, 2018

Mr. Leon Freeman
Department of Regional Planning
County of Los Angeles
320 West Temple Street, Room 1356
Los Angeles, CA 90012

RE: West Carson Transit Oriented District SP
SCH # 2017011010
Ref. GTS LA-2017-00533-NOP-AL
GTS LA-2017-01364-DEIR-AL
Vic. LA-110/PM 7.34 to 6.53,
LA-405/PM 13.86 to 13.32

Dear Mr. Freeman:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The West Carson TOD Specific Plan would encourage transit oriented development; promote active transportation and improve quality of life for residents; reduce vehicle miles traveled; create community benefits with improvements to the public realm; improve economic vitality and employment opportunities; and streamline the environmental review process for future projects. A2-1

Overall, the Specific Plan would potentially accommodate an additional 2,271 dwelling units and approximately 1,704,985 square feet of non-residential land uses. The project also includes pedestrian sidewalk and intersection improvements.

The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. Senate Bill 743 (2013) mandated that CEQA review of transportation impacts of proposed development be modified by using Vehicle Miles Traveled (VMT) as the primary metric in identifying transportation impacts for all future development projects. For future project, you may reference to The Governor's Office of Planning and Research (OPR) for more information. A2-2

http://opr.ca.gov/ceqa/updates/guidelines/

Caltrans is aware of challenges that the region faces in identifying viable solutions to alleviating congestion on State and Local facilities. With limited room to expand vehicular capacity, future A2-3

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

2. Response to Comments

development should incorporate multi-modal and complete streets transportation elements that will actively promote alternatives to car use and better manage existing parking assets. Prioritizing and allocating space to efficient modes of travel such as bicycling and public transit can allow streets to transport more people in a fixed amount of right-of-way.

Caltrans supports the implementation of complete streets and pedestrian safety measures such as road diets and other traffic calming measures. Please note the Federal Highway Administration (FHWA) recognizes the road diet treatment as a proven safety countermeasure, and the cost of a road diet can be significantly reduced if implemented in tandem with routine street resurfacing.

We encourage the Lead Agency to integrate transportation and land use in a way that reduces Vehicle Miles Traveled (VMT) and Greenhouse Gas (GHG) emissions by facilitating the provision of more proximate goods and services to shorten trip lengths, and achieve a high level of non-motorized travel and transit use. We a' icourage the Lead Agency to evaluate the potential of Transportation Demand Man ent (TDM) strategies and Intelligent Transportation System (ITS) applications in orue to better manage the transportation network, as well as transit service and bicycle or pedestrian connectivity improvements.

A2-3 Cont'd

After reviewing the Draft Environmental Impact Report for this project, Caltrans has the following comments:

Caltrans concurs the conceptual mitigation measures at the following locations. However, any proposed improvement would need to submit to Caltrans for approval.

- MM11-SB I-110 Ramps and Carson Street
- MM24-Figueroa Street and 220th Street/NB I-110 Ramps
- MM29-SB I-110 Ramps and 223rd Street
- MM32-Hamilton Avenue and SB I-110 Ramps

A2-4

Please be reminded that any work performed within the State Right-of-way will require an Encroachment Permit from Caltrans. Any modifications to State facilities must meet all mandatory design standard and specifications.

A2-5

Transportation of heavy construction equipment and/or materials, which requires the use of oversized-transport vehicles on State highways, will require a transportation permit from Caltrans. The construction time schedule of working hours should be considered off peak hours for the large size truck trips to minimize traffic congestion and to provide maximum safety to the pedestrians and vehicular traffic on the streets and freeways.

A2-6

Storm water run-off is a sensitive issue for Los Angeles. Please be mindful that projects should be designed to discharge clean run-off water. Additionally, discharge of storm water run-off is not permitted onto State highway facilities without a storm water management plan.

A2-7

Mr. Leon Freeman
April 10, 2018
Page 3 of 3

If you have any questions, please feel free to contact project coordinator Mr. Alan Lin at (213) 897-8391 and refer to GTS # LA-2016-01364-DEIR-AL.

Sincerely,

FRANCES LEE
IGR/CEQA Acting Branch Chief

cc: Scott Morgan, State Clearinghouse

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

2. Response to Comments

This page intentionally left blank.

A2. Response to Comments California Department of Transportation (Caltrans) District 7, dated April 10, 2018.

A2-1 The comment accurately summarizes the project description and project objectives. No response is required.

A2-2 The comment identifies vehicle miles traveled (VMT) as the primary measure of transportation impacts pursuant to Senate Bill 743 (2013). Project VMT impacts are analyzed in Section 5.13, *Transportation and Traffic*, of the DEIR.

A2-3 The comment consists of suggestions regarding multi-modal transportation, complete streets measures, and reducing VMT. These suggestions were previously incorporated into the Specific Plan; see Chapter 3, *Project Description*, of the DEIR.

A2-4 The comment states that Caltrans concurs with the mitigation measures at Interstate 110 (I-110) ramps to and from four roadways; and notes that any proposed improvement must be submitted to Caltrans for approval. Comment noted and no further response is required.

A2-5 The comment notes that any work performed within the State Right-of-way will require an Encroachment Permit from Caltrans; and that any modifications to State facilities must meet all mandatory design standard and specifications. Comment noted and no further response is required.

A2-6 The comment sets forth Caltrans requirements and suggestions respecting transportation of oversize loads on State highways. Comment noted and no further response is required.

A2-7 The comment consists of requirements for discharge of stormwater onto State highway facilities. Project water quality impacts are addressed in Section 5.7, *Hydrology and Water Quality*, of the DEIR. Comment noted and no further response is required.

2. Response to Comments

This page intentionally left blank.

LETTER R1 – Peter and Doreen Waack (1 page)

From: DRP West Carson
To: William Halligan
Subject: FW: West Carson TOD Draft EIR
Date: Monday, March 12, 2018 6:47:59 AM

FYI

From: lp16159@aol.com [mailto:lp16159@aol.com]
Sent: Sunday, March 11, 2018 11:42 AM
To: DRP West Carson <westcarson@planning.lacounty.gov>
Cc: lp16159@aol.com
Subject: West Carson TOD Draft EIR

Attn: Anita Gutierrez, we've been home owners at 21414 S. Berendo Avenue for 42 years. Since the opening of additional facilities at Harbor UCLA Hospital our neighborhood has been flooded with traffic, both vehicle and pedestrian during the weekdays, Wednesday, Thursday and Fridays. Patients and visitors park their vehicles on our street and walk to the hospital for visitations, clinic appointments etc. Many leave their trash in our driveways, food, dirty diapers, gauze, bandages, needles and various items of hospital paperwork. This has become a nuisance over the years. R1-1

I'm writing to ask that during the planning of this extensive project, that you please take into consideration the needs of the local residents in the surrounding areas of the hospital. We would like to see some signs posted and additional parking provided for the hospital visitors and patients. R1-2

If you require any further information, please do not hesitate to contact us.

Peter and Doreen Waack
21414 S. Berendo Avenue
Torrance, CA 90502
3310-533-0165

2. Response to Comments

This page intentionally left blank.

R1. Response to Comments from Peter and Doreen Waack, dated March 11, 2018.

R1-1 The comment describes traffic, parking, and littering problems in the commenters' neighborhood since the opening of additional facilities at Harbor UCLA Medical Center (HUCLAMC) (year not specified). Development of the HUCLAMC is controlled by the adopted Harbor-UCLA Master Plan and is not part of this project. However, all comment letters will be provided to the County of Los Angeles Board of Supervisors so that these concerns will be presented directly to the decision makers prior to consideration of whether or not to approve the Proposed Project.

R1-2 The comment asks that the needs of residents surrounding HUCLAMC be considered during project planning; and requests signs and additional parking for HUCLAMC visitors and patients. Traffic impacts are addressed in Section 5.13, *Transportation and Traffic*, of the DEIR, and parking impacts are addressed in Section 5.8, *Land Use and Planning*. All comment letters will be provided to the County of Los Angeles Board of Supervisors so that these concerns will be presented directly to the decision makers prior to consideration of whether or not to approve the Proposed Project.

2. Response to Comments

This page intentionally left blank.

LETTER R2 – Chris Tabellario (4 pages)

William Halligan

Subject: FW: West Carson TOD DEIR, A Resident's Concerns

From: C M Tabellario [mailto:cmtab46@sbcglobal.net]
Sent: Friday, April 27, 2018 6:53 AM
To: DRP West Carson <westcarson@planning.lacounty.gov>
Cc: Mark Child <mchild@planning.lacounty.gov>
Subject: West Carson TOD DEIR, A Resident's Concerns

My understanding, from the March 8th meeting at Harbor-UCLA, comments on the DEIR were due by the end of April.
While reviewing the PowerPoint presentation for the email address to send comments on the DEIR, comments were due by April 13. I am hopeful my concerns will still be considered, particularly in regards to health and well being of people and loss of privacy. Thank you.

A resident's concerns regarding the lack of sensitivity and jeopardizing the health and well-being of people as could be brought about by the West Carson Transit Oriented District's Draft Environmental Impact Report.

From the DEIR 1.4 Project Summary
"...It is intended to expand opportunities for compact, infill development that is compatible with and supports intensification **while staying sensitive to the existing single-family neighborhoods.**

The major concerns are stemming from the proposed colossal increases in population and MFR residences.
From DEIR Table 1-2

- Current Population of 4,073
- Projected Population of 9,840
  - Represents a HUGE increase of 5,767 people (142% increase in population)

R2-1

- Current SFRs 1188 units
- Project SFRs 938
  - A reduction of 250 homes (where are these people to go? Add more to the existing homeless situation?)

- Current MFRs 181 units
- Project MFRs 2636
  - Represents a COLOSSAL increase of 2455 MFRs (1,356% increase in MFRs)

The proposed West Carson TOD is NOT **staying sensitive to the existing single-family neighborhoods.** The project's MASSIVE increases in MFRs and population will in turn cause:
  - Privacy invasion for many residents due to the height of the Multi Family Residences (MFRs).
  - Intensify existing Traffic problems and is Not being mitigated.

1

2. Response to Comments

- Intensify existing Parking problems in neighborhoods and is Not being mitigated.

- Unavoidable Significant Adverse Impacts brought about from the TOD
- Borders on a Super Fund Toxic Waste Site

R2-1 Cont'd

Privacy Invasion
From the DEIR 1.4 Project Summary
Current MFRs are 181
Project MFRs to be 2636,
This is a HUGE increase of 2455 MFRs

Due to my home's location, as well as several neighbors, The West Carson TOD project will Significantly impact us. Our residences will literally back up to 3 story multi-family residences (MFRs) and as such, our Privacy will be severely compromised, if not completely taken away by these MFRs as the height will allow easy viewing of yards and homes.
Are TODs exempt from justifying "Burden of Proof" that this will enhance the area?
Acceptable alternatives to mitigate the privacy issues:
To mitigate the privacy invasion:

- Please add language that All multi-story buildings that are adjacent to residences must have Privacy glass windows installed on those sides of the buildings that overlook neighbors' yards and homes.
- Reduce the 3 story MFRs to those areas backing up to neighborhoods to 2 story MFRs as an alternative as this will minimize privacy issues and allow continued view of the sun and sky as opposed to being barricaded by tall buildings.

R2-2

Intensify Existing Traffic and Parking Issues
These additional residential units and businesses most certainly will bring in additional traffic to an already very congested traffic area. And nothing is being proposed to mitigate it, as the assumption is people will be not using cars. A misconception, given the bus stop is located below a freeway overpass. An unnerving place to wait as cars on the 110 freeway whizz by and is unsafe given the homeless situation in the area.

Parking is already a challenging issue in neighborhoods and will most certainly become a larger issue for neighborhoods surrounding the proposed MFRs due the ratio of parking spaces for each MFR.
Comments from the DEIR: Table 2-2 NOP Written Comments Summary
Agency: California Department of Transportation (Caltrans), District 7

> **With limited room to expand vehicular capacity**, the proposed project should incorporate multimodal and complete streets elements to promote alternatives to vehicular travel and **better manage parking assets.**

The proposed increases of adding 2,455 MFR residential units with minimal parking, the increase in non-residential land use, and the increase in population by adding 5,767 people are too intense for the area streets and parking.
Please decrease the intensity of the population, the residential and business units.

R2-3

Super Fund Toxic Waste Site
A Major concern, this TOD (conveniently?) skirts the border of a Super Fund Toxic Waste site, yet, this topic has been avoided. How will construction from this TOD affect the extreme contamination?

R2-4

Significant Adverse Impacts

R2-5

2

From DEIR 2.3.3

Unavoidable Significant Adverse Impacts

This DEIR identifies four environmental topical sections with significant and unavoidable adverse impacts, as defined by CEQA, that would result from implementation of the proposed project. Unavoidable adverse impacts may be considered significant on a project-specific basis, cumulatively significant, and/or potentially significant. The County must prepare a "statement of overriding considerations" before it can approve the project, attesting that the decision-making body has balanced the benefits of the proposed project against its unavoidable significant environmental effects and has determined that **the benefits outweigh the adverse effects, and therefore the adverse effects are considered acceptable.** The impacts that were found in the DEIR to be significant and unavoidable are:

- Air Quality
- Greenhouse Gas Emissions
- Noise
- Transportation and Traffic

From DEIR 2.3.2

Potentially Significant Adverse Impacts

The County of Los Angeles determined that the following 15 environmental factors have potentially significant impacts if the proposed project is implemented.

- Aesthetics
- *Air Quality*
- Cultural Resources
- Geology and Soils
- *Greenhouse Gas Emissions*
- *Hazards and Hazardous Materials*
- *Hydrology/Water Quality*
- Land Use and Planning
- *Noise*
- *Population and Housing*
- Public Service
- Recreation
- *Transportation and Traffic*
- Tribal Cultural Resources
- *Utilities and Service Systems*

R2-5 Cont'd

The health and well-being of people are being jeopardized or at-risk by this project.

Do these "potentially significant", and the "significant and unavoidable impacts" truly support TOD Objective 1: ensure the **health and safety** of residents, visitors and employees?

How does anyone justify the benefit of this TOD, when critical and fundamental elements that affect the health and well being of people are found to be "potentially significant" and "significant and unavoidable"?

The proposed West Carson TOD is not right for the area! It is Not sensitive to neighbors, as the benefits do not outweigh:

- The loss of personal privacy
- The profound negative impacts of people's health and well-being.
- Increases in already congested traffic and parking in the area
- The possible effects the construction will have on the very nearby Super Fund Toxic Waste Site

R2-6

3

2. Response to Comments

Please reconsider more reasonable and sensitive alternatives than the proposed colossal high-density population and residences that will only acerbate existing problems and create more problems. R2-6 Cont'd

Sincerely,
Chris Tabellario
21534 Meyler Street
Torrance, CA 90502

4

R2. Response to Comments from Chris Tabellario, dated March 11, 2018.

R2-1 The comment expresses concerns about project population and housing impacts and asserts that those impacts conflict with part of the intention behind the project stated in DEIR Chapter 1 (sensitivity to the existing single-family neighborhoods). The comment asserts that project development would cause privacy invasion, traffic and parking impacts, and hazard impacts (arising from an adjacent Superfund site); and expresses an evaluation that the significant impacts of the project outweigh the benefits. Each of these assertions about the project is discussed further in a subsequent paragraph; responses are provided below.

The comment accurately summarizes project buildout population and housing forecasts from DEIR Table 1-2. The comment asks where would people who could be displaced by the net decrease of 250 single-family housing units go?

Specific Plan buildout would involve development of a net increase of up to 2,271 (multi-family) housing units. A net increase of 9,368 housing units is forecast in the unincorporated areas of the South Bay Cities Subregion between 2012 and 2040, excluding project impacts (see DEIR Section 5.10, Population and Housing). There are sufficient net increases in housing units such that a potential net decrease in 250 single-family housing units due to Specific Plan implementation would not displace substantial numbers of residents.

R2-2 The comment expresses concerns about loss of privacy [the proposed MU-1 zoning district would permit building heights up to 3 stories]. The comment requests installation of privacy glass on windows of buildings in the MU-1 District; or reducing permitted building heights to 2 stories next to existing single-family residences. The request for privacy glass will be considered by the County Board of Supervisors before the Board decides whether to certify the EIR and approve the project. A reduced intensity alternative is analyzed in DEIR Chapter 7, *Alternatives*. All comment letters will be provided to the County of Los Angeles Board of Supervisors so that these concerns will be presented directly to the decision makers prior to consideration of whether or not to approve the Proposed Project.

R2-3 The comment expresses concerns about traffic and parking impacts; and requests decreases in proposed land use intensity. The comment questions whether project development would decrease use of cars, as the bus stop [Carson Metro Station] is below a freeway overpass. Traffic impacts of the proposed project would be significant and unavoidable; see DEIR Section 5.13, *Transportation and Traffic*. Off-street parking standards are set forth in Specific Plan Chapter 4, *Mobility and Public Realm*. The comment requests inclusion of multimodal and complete streets elements; such elements are key features of the proposed project, as described in DEIR Chapter 3, Project Description. The comment asks for decreased intensity; a reduced-intensity

alternative is analyzed in DEIR Chapter 7, Alternatives. All comment letters will be provided to the County of Los Angeles Board of Supervisors so that these concerns will be presented directly to the decision makers prior to consideration of whether or not to approve the Proposed Project.

R2-4 The comment asks how construction pursuant to the Specific Plan would affect contamination in the nearby Superfund site. No Superfund sites were identified in the EDR Radius Report on or within 0.25 mile of the project site. The Del Amo Superfund Site, about 1,500 feet north of the project site, is discussed in DEIR Section 5.6, *Hazards and Hazardous Materials*. Contamination has affected groundwater. Contaminated soil from part of the site has been removed, and remediation via soil vapor extraction is underway.

Environmental site assessments (ESAs) would be required for individual development projects under the Specific Plan; see Mitigation Measure HAZ-2 in DEIR Section 5.6. ESAs would assess whether construction of such projects could disturb existing contamination on or near those sites and recommend appropriate remedial or avoidance measures.

R2-5 The comment asserts that the adverse impacts of the project undermine Objective 1 for the proposed project (ensure the health and safety of residents, visitors and employees). The comment correctly identifies 4 impacts determined to be significant and unavoidable in the DEIR. The comment mentions 15 potentially significant impacts from DEIR Section 2.3.2 (quoted from the Notice of Preparation); note that DEIR Chapter 5, Environmental Analysis, only identified nine potentially significant project impacts: Air Quality, Cultural Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Noise, Public Services, Transportation and Traffic, Tribal Cultural Resources, and Utilities and Service Systems).

R2-6 The comment summarizes statements in comments R2-2 through R2-5; claims that adverse project impacts would outweigh project benefits; and requests consideration of lower-intensity alternatives. The commenter's concern about project impacts relative to benefits will be considered by the County Board of Supervisors before the Board decides whether to certify the EIR and approve the project. A lower-intensity alternative is analyzed in DEIR Chapter 7, Alternatives. All comment letters will be provided to the County of Los Angeles Board of Supervisors so that these concerns will be presented directly to the decision makers prior to consideration of whether or not to approve the Proposed Project.

R3. Response to Comments received at a public meeting on the Draft EIR held March 8, 2018.

The following comments were received at a public meeting on the Draft EIR held by the County at the Harbor-UCLA Medical Center on March 8, 2018. These comments are hereby incorporated into this Final EIR. The Final EIR, including copies of all comments submitted, will be provided to the County of Los Angeles Board of Supervisors. Therefore, these concerns will be presented directly to the decision makers prior to consideration of whether or not to approve the Proposed Project.

1. Concerns about the Cumulative Impacts

Response: Cumulative impacts are discussed throughout Chapter 5 of the DEIR.

2. Inadequacies of the EIR:

a. DEIR addresses only impacts at the scale of buildout

Response: CEQA requires that an EIR analyze the "whole of the project." Consistent with CEQA requirements, the EIR analyzes full buildout of the specific plan area. However, various alternatives to the proposed project are discussed in Chapter 7 of the DEIR.

b. No non-TOD options are considered

Response: A Transit Oriented District (TOD) is an area located within a ½ mile radius from a major transit station that has development and design standards and incentives to facilitate transit-oriented development. Accordingly, transit-oriented development is development that is concentrated around transit stations. Transit-oriented development connects neighborhoods, and community and employment centers, through a broad network of pedestrian, bicycle, transit, and roadway facilities. The recently updated Los Angeles County General Plan identified 11 areas, including West Carson, which will be the focus of TOD efforts and strategies. Creation of a TOD specific plan is consistent with the County's General Plan and is a major objective of the project. Therefore, no other non-TOD options are considered nor required.

c. Socio-economic demand is not demonstrated.

Response: CEQA only requires analyzing and mitigating for physical environmental impacts, not economic "impacts" such as socio-economic demand. As a result, it is not necessary to demonstrate economic demand for the project.

3. Concerns with phasing assumptions [plan uses the 2016-2035 implementation window]

Response: The phasing assumptions for specific plan implementation are considered a realistic time-frame for implementation of the proposed project.

4. Excludes short-term (peak) assumptions

Response: Consistent with CEQA, the EIR analyzes full buildout of the proposed project. The maximum impact of the project would occur at full-buildout.

5. Scoping Agencies are missing: HUD, private utilities, internet providers, cable.

Response: Consistent with CEQA, all responsible and trustee agencies were sent a copy of the Notice of Availability (NOA). Private utility companies serving the specific plan area were also sent a copy of the NOA. No additional notice is required.

6. Questions on the scoping & findings on biological resources (further details on this comment were not provided to date)

Response: Comment noted.

7. Traffic & Air Pollution – offsets/credits comparing West Carson to county baseline, quantify the offset cap-n-trade.

Response: The California Cap and Trade Program is not related to the proposed project.

8. Concern of [added residential] density

Response: Comment noted.

9. Allocation of Section 8 housing

Response: The specific plan does not include an allocation of Section 8 housing.

10. Parking [standards for] (TOD) needs to be validated.

Response: Parking is not a CEQA-related issue.

11. Public Participation Process [not enough outreach]

Response: Throughout the planning process, extensive community outreach was conducted. However, your comment is hereby noted and will forwarded to the County decision-makers.

12. Localized light glare analysis [not provided].

Response: Potential light and glare impacts are discussed beginning on Page 5.1-7 of the DEIR.

13. Public Space Patrol [increased need for police/public safety]

Response: The comment related to existing police/public safety concerns in the area is hereby noted. Potential police protection impacts are discussed beginning on Page 5.11-6 of the DEIR.

14. Homeless issues.

Response: The comment related to existing homeless issues in the area is hereby noted. However, this is an existing problem throughout California and not related to the proposed project.

15. Environmental Justice Concerns: Are we [West Carson, accommodating increased density by being] designated a TOD so [that a more affluent area like] Redondo [Beach doesn't have to?]

Response: The TOD designation is solely related to the fact that the specific plan area is currently served by the Silver Line-Carson Station. Redondo Beach is an incorporated City and the County has no land use authority within incorporated cities.

16. Impacts from nearby Superfund Site

Response: (Response provided at meeting) Development would require a Phase I Study and the NOP/DEIR was sent to DTSC.

17. Notification challenges. The name 'West Carson' is confusing to local residents.

Response: Comment noted. The name of the proposed specific plan is not an EIR-related issue. However, the Final EIR, including copies of all comments submitted, will be provided to the County of Los Angeles Board of Supervisors. Therefore, these concerns will be presented directly to the decision makers prior to consideration of whether or not to approve the Proposed Project.

18. Alternatives in EIR;

    a. Lesser density alternative

Response: A reduced intensity alternative is discussion in Section 7.4.2 of the DEIR.

    b. Increased setbacks

Response: Comment noted. The Final EIR, including copies of all comments submitted, will be provided to the County of Los Angeles Board of Supervisors. Therefore, these concerns will be presented directly to the decision makers prior to consideration of whether or not to approve the Proposed Project.

19. Lack of parking (existing)

a. Hospital employees [and hospital users] park within nearby neighborhoods

Response: The comment related to existing parking issues in the area is hereby noted. However, this is an existing problem in the project area and not related to the proposed project.

b. Where are you putting new parking

Response: The proposed specific plan includes parking standards for new development. Future development project will need to provide the necessary parking on-site consistent with these parking standards.

c. [area as a whole] needs more parking

Response: Comment noted. See previous responses.

20. Reduced Intensity Plan

Response: A reduced intensity alternative is discussion in Section 7.4.2 of the DEIR.

21. Density – No Increase in Density [participants oppose any increase in density]

Response: The proposed density is consistent with transit oriented development and is necessary to promote redevelopment of underutilized and blighted properties. However, these concerns will be presented directly to the decision makers prior to consideration of whether or not to approve the Proposed Project.

22. MU-2 [which is the highest proposed density] next to freeway. [What about the rule about siting housing within] 500' of freeway.

Response: The California Air Resources Board (CARB)has published the Air Quality and Land Use Handbook, which recommends that residential uses be located 500-feet from a freeway. However, there are various methods to mitigate potential air quality impacts on future residents, such as incorporation higher rated MERV filters into the HVAC systems for future projects.

23. Participants want a library, parks, dog parks.

Response: Comment noted. The proposed specific plan addresses the need for additional public facilities including parks.

24. Fire/Sheriff are 'overburdened already" [according to the agencies own statements]

Response: Comment noted. Potential police protection impacts are discussed beginning on Page 5.11-6 of the DEIR.

25. Encourage solar for new development

Response: Comment noted.

26. Ensure quality control on new work (poor quality workmanship noted at 220th St exit out of hospital).

Response: Comment noted. The proposed specific plan includes design guidelines to ensure quality development.

2. Response to Comments

This page intentionally left blank.

3. Revisions to the Draft EIR

3.1 INTRODUCTION

This section contains revisions to the DEIR based upon (1) additional or revised information required to prepare a response to a specific comment; (2) applicable updated information that was not available at the time of DEIR publication; and/or (3) typographical errors. This section also includes additional mitigation measures to fully respond to commenter concerns as well as provide additional clarification to mitigation requirements included in the DEIR. The provision of these additional mitigation measures does not alter any impact significance conclusions as disclosed in the DEIR. Changes made to the DEIR are identified here in ~~strikeout text~~ to indicate deletions and in <u>underlined text</u> to signify additions.

3.2 DEIR REVISIONS IN RESPONSE TO WRITTEN COMMENTS AND OTHER CLARIFICATIONS

The following text has been revised in response to comments received on the DEIR.

Page 5.11-2, Section 5.11, Public Services. The following corrections are made in response to Comment A1-1, from the Los Angeles County Fire Department. Added text is <u>underlined</u> and deleted text shown in ~~strikeout~~.

Table 5.11-1 Fire Stations Serving the Project Site

Station and Address	Equipment	Daily Staffing
Fire Station #36 127 W. 223rd Street, Carson	2 fire engines (4 persons each) 1 paramedic ~~truck~~<u>squad</u> (2 persons)	2 captains, 2 firefighter specialists; 2 firefighter paramedics; 4 firefighters
Fire Station #116 755 E. Victoria Street, Carson	1 fire truck (4 persons) 1 fire engine (3 persons) 1 paramedic ~~truck~~<u>squad</u> (2 persons)	2 captains, 2 firefighter specialists; 3 firefighter paramedics; 2 firefighters
Fire Station #127 2049 E. 223rd Street, Carson	1 quint (combination engine/ladder truck) (4 persons) 1 fire engine (2 persons) <u>(Quint and fire engine respond together as a light force)</u>	1 captain, 2 firefighter specialists, 3 firefighters

Source: ~~Vidales~~<u>Takeshita</u> 201~~7~~<u>8</u>.

3. Revisions to the Draft EIR

Page 5.11-2, Section 5.11, Public Services. The following corrections are made in response to Comment A1-2, from the Los Angeles County Fire Department. Added text is underlined and deleted text shown in ~~strikeout~~.

> *During 201~~6~~7, Fire Station #36 had an average emergency response time of 4:~~41~~58 minutes, Fire Station #116 had an average emergency response time of 4:~~54~~49 minutes, and Fire Station #127 had an average emergency response time of 5:14 minutes (~~Vidales~~Takeshita 2017~~8~~).*

Page 5.15-9, Section 5.11, Public Services. The following corrections are made to clarify information contained in the Draft EIR. Added text is underlined and deleted text shown in ~~strikeout~~.

Sewers

The analysis conducted for the Sewer Area Study assesses the potential impact of the proposed Specific Plan in terms of the system's physical capacity to transport wastewater through collection mains. There is an increase in land use density in the proposed build-out, with a corresponding increase in water and wastewater demand anticipated. While strictly single-family residential areas are minimally affected, the increases in other zones warrant analysis. Collection areas were delineated from collection line locations. Sewage effluent in each collection area was calculated using the Zoning Coefficient for runoff for a typical sewer area study developed by Los Angeles County Department of Public Works Land Development Division. Each planned development zone's acreage in collection zones was used with the Zoning Coefficient to determine total flow through the lines.

All existing sewer mains in the Specific Plan area are 8" or above in diameter. ~~Using the minimum allowable slope of 0.24% (0.12% for 15" or above), the design capacity for the existing sewer pipes is 0.265 cfs for 8" mains and 0.455 cfs for 10" pipes. Design capacity for lines below 15" diameter, defined by LA County Sanitation District, is half of the diameter of the pipe to be filled.~~

~~One of the purposes of this study is to determine the deficiencies in existing utilities when using the future development of the Plan Area.~~ The purpose of the West Carson TOD sewer area study is to determine potential areas that may exceed the existing sewer capacity after buildout. Based on ~~this~~ the analysis of the sewer area study submitted to the County for review, four (4) of the existing tributary areas have the potential to exceed the existing sewage capacity defined by LA County. Tributary Areas 2, 8, 12, and 13 have the potential to exceed the existing sewage capacity of their connecting sewer mains. The remaining tributary areas, based on zoning coefficients from Los Angeles County, should remain below the designed sewage capacity.

Page 5.15-10, Section 5.11, Public Services. The following corrections are made to clarify information contained in the Draft EIR. Added text is underlined and deleted text shown in ~~strikeout~~.

A more detailed analysis of types of buildings and historical flows in areas where little to no build-out will occur can mitigate some of the issues in collection mains. ~~For example, Tributary Area 12, based on the analysis, would be over capacity. However, communication with LACDPW has indicated they have had no known issues with lines in the existing West Carson area, and Tributary Area 12 is not expecting to change much in full build out.~~

Page 5.15-11, Section 5.11, Public Services, Mitigation Measure USS-1. The following corrections are made to clarify information contained in the Draft EIR. Added text is underlined and deleted text shown in ~~strikeout~~.

USS-1 Prior to the issuance of grading permits for individual development projects in the West Carson TOD Specific Plan area, the Los Angeles County Department of Public Works shall review the recommended sewer line replacement and upsizing improvements outlined in the "West Carson TOD Sewer Area Study" prepared by IBI Group, Inc. (dated April 25, 2018 ~~February 2, 2018~~) and determine whether sewer improvements would be required as part of the proposed projects.

~~To assist in the determination, the Department of Public Works may require the project applicant/developer to submit a site-specific sewer flow monitoring study to provide a more detailed analysis of the true sewer flow depths over time and to determine if the potential for surcharge conditions would occur due to project development. The sewer flow monitoring study shall be submitted to the Department of Public Works for review and approval.~~

Appendix J of the Draft EIR has been replaced with an updated traffic study, included in this Final EIR as Appendix A.

Appendix K of the Draft EIR has been replaced with an updated sewer area study, included in this Final EIR as Appendix B.

3. Revisions to the Draft EIR

This page intentionally left blank.

Appendix A. Updated Traffic Study

Appendix

This page intentionally left blank.

TECHNICAL MEMORANDUM

WEST CARSON TOD SPECIFIC PLAN

TRAFFIC IMPACT STUDY

Prepared for County of Los Angeles

by IBI Group

October 12, 2017

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLE OF CONTENTS (CONTINUED)

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

1.1 STUDY PURPOSE

This traffic analysis report has been prepared as part of the West Carson TOD Specific Plan Environmental Impact Report (EIR). The purpose of this traffic study is to document the forecast traffic conditions within the study area with development proposed in the Specific Plan, to identify potential impacts to study area intersections and roadway segments based on the County of Los Angeles standards, and to formulate measures to mitigate those impacts.

1.2 REPORT ORGANIZATION

This report is organized into the following twelve sections:

- Introduction
- Project Description
- Analysis Methodology
- Existing Year (2016) Conditions
- Future Year (2035) Forecast Modeling
- Future Year (2035) No Project
- Project Traffic
- Existing Year (2016) With Project
- Future Year (2035) With Project
- Mitigation Measures and Funding
- Conclusions
- Appendices

Section 1 provides a brief introduction to the study purpose and report organization. Section 2 provides a summary of the background history, existing land uses, and future land uses under the Specific Plan. Section 3 includes the methodology utilized in the analysis and the referenced standards. The study area roadways and Existing Year (2016) intersection geometry, turning movement volumes, and level of service are presented in Section 4. The Future Year (2035) forecast modeling methodology is provided in Section 5. Section 6 describes the Future Year (2035) No Project condition and provides the roadway segment and intersection level of service results. Section 7 describes the project trip generation, distribution, and assignment. Section 8 describes the Existing Year (2016) With Project scenario and provides the roadway segment and intersection level of service results. Section 9 describes the Future Year (2035) With Project scenario and provides the roadway segment and intersection level of service results. Section 10 presents the mitigation measures to address facilities operating at an unacceptable level of service; fair share calculations are also presented in this section. Findings and conclusions from this study are presented in Section 11. Lastly, the appendices are provided in Section 12.

2 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

The West Carson TOD Specific Plan covers approximately 418 acres in the unincorporated area of West Carson. The project area is bounded by the 208th Street flood control channel and West Torrance Boulevard to the north, 223rd Street to the south, Interstate 110 to the east, and Normandie Avenue to the west. The project area includes the Carson Street Metro Silver Line Station, a bus rapid transit stop along a designated bus lane adjacent to the Interstate 110 freeway.

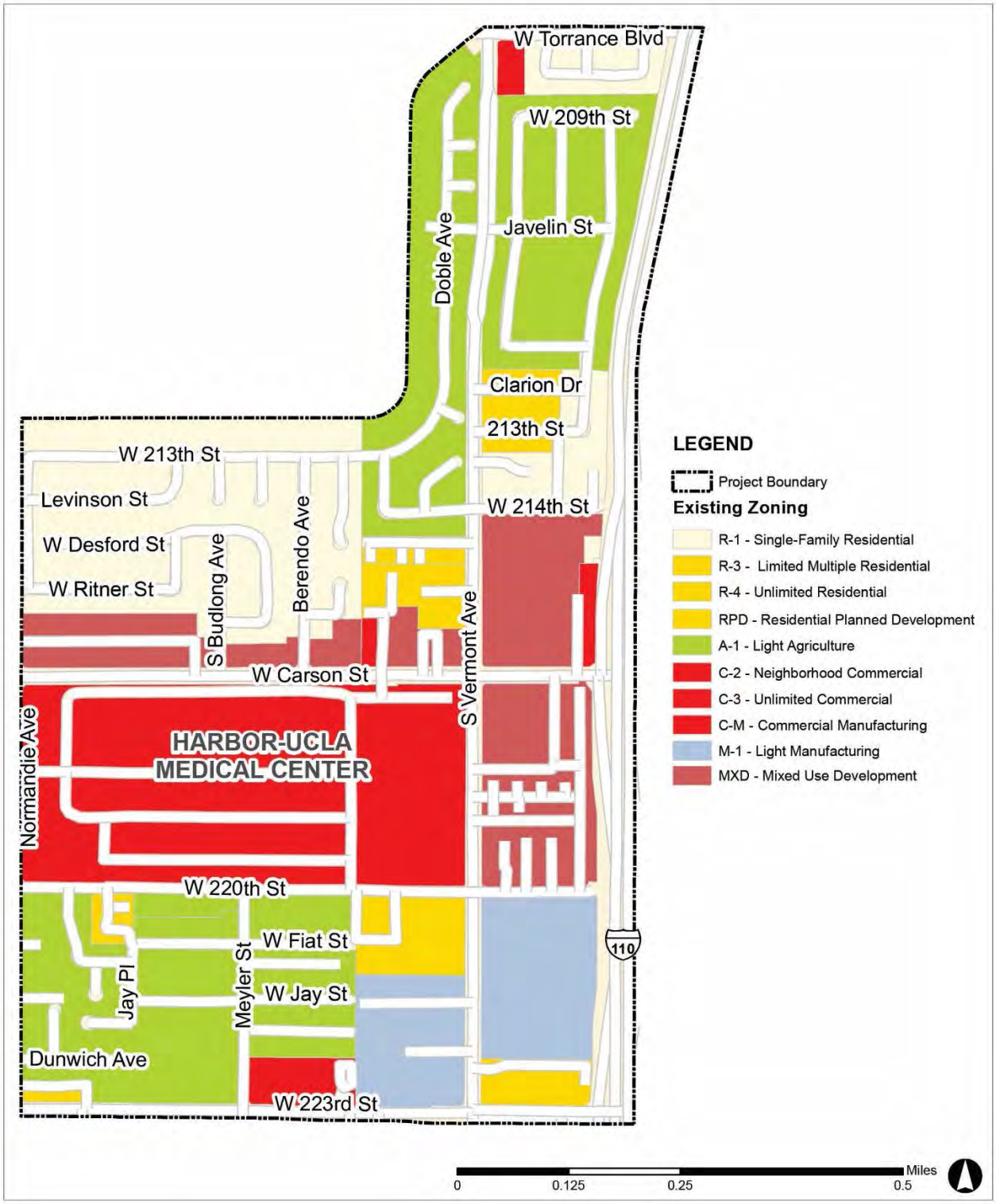
2.2 EXISTING LAND USE ZONING

The West Carson TOD Specific Plan is comprised of a number of land uses including commercial, manufacturing, residential, mixed-use, and agricultural. Figure 2.1 illustrates the existing zoning by traffic analysis zone (TAZ) for the Specific Plan area, while Table 2.1 summarizes the existing square footage for each land use.

TABLE 2.1: EXISTING LAND USES

LAND USE ZONE	LAND USE TYPE	EXISTING
Harbor UCLA Medical Zone	Non-Residential SF	-
	Residential Dwelling Units	-
Industrial Flex	Non-Residential SF	348,061
	Residential Dwelling Units	15
Mixed Use Development 1	Non-Residential SF	233,928
	Residential Dwelling Units	30
Mixed Use Development 2	Non-Residential SF	258,259
	Residential Dwelling Units	63
Neighborhood Commercial	Non-Residential SF	14,787
Residential Planned Development	Residential Dwelling Units	37
Unlimited Commercial	Non-Residential SF	58,827
	Residential Dwelling Units	-
West Carson Residential 1	Residential Dwelling Units	955
West Carson Residential 3	Residential Dwelling Units	87
West Carson Residential 4	Non-Residential SF	42,473
	Residential Dwelling Units	116

FIGURE 2.1: EXISTING LAND USE ZONING



Source: IBI Group

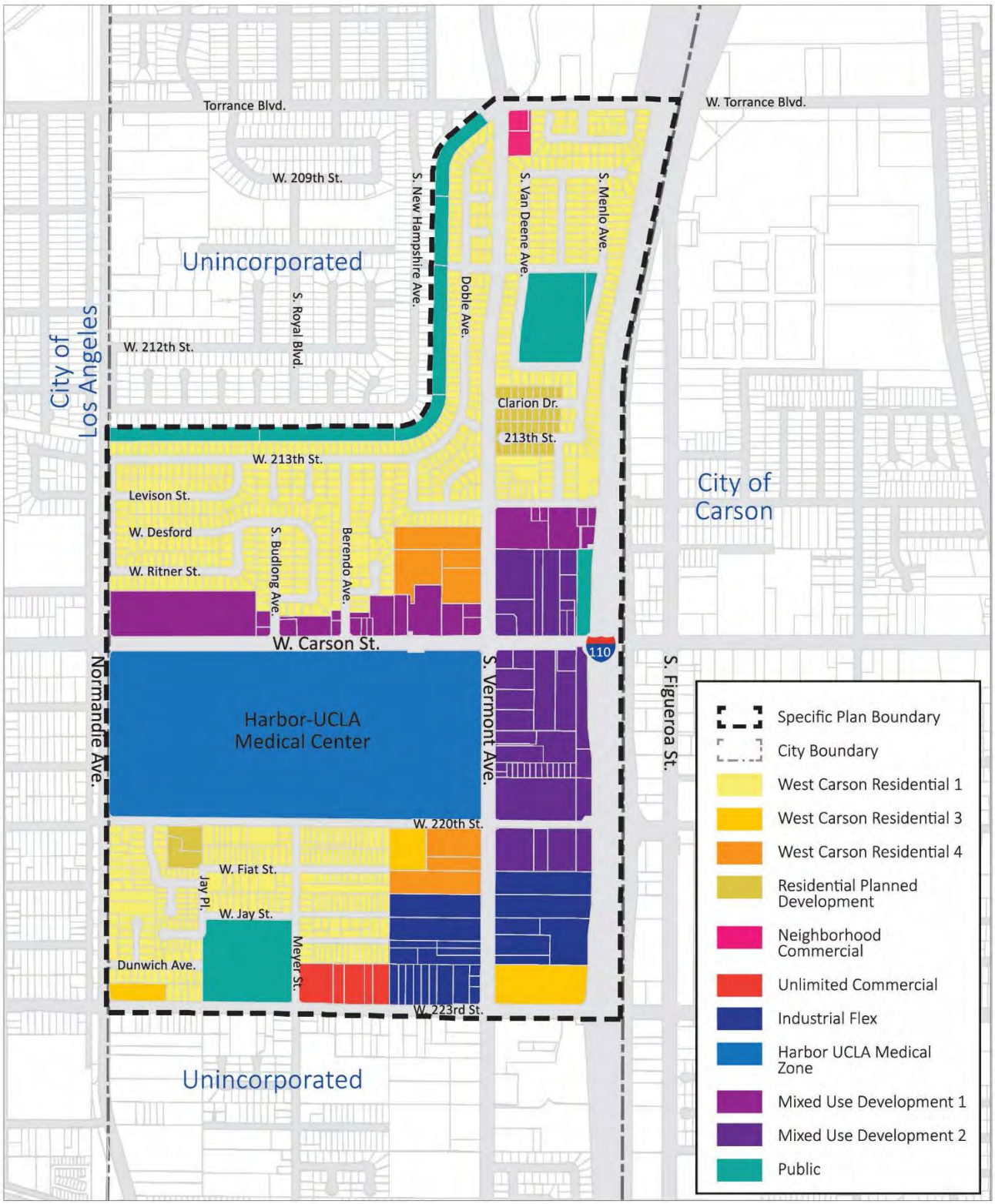
2.3 PROPOSED LAND USE ZONING

Figure 2.2 illustrates the proposed land use zoning for the Specific Plan area. Table 2.2 summarizes the changes in square footage and dwelling units for each land use from the existing to the proposed condition.

TABLE 2.2: PROPOSED SPECIFIC PLAN AREA LAND USES

LAND USE ZONE	LAND USE TYPE	EXISTING	PROPOSED
Harbor UCLA Medical Zone	Non-Residential SF	-	-
	Residential Dwelling Units	-	100
Industrial Flex	Non-Residential SF	348,061	1,133,779
	Residential Dwelling Units	15	486
Mixed Use Development 1	Non-Residential SF	233,928	483,460
	Residential Dwelling Units	30	143
Mixed Use Development 2	Non-Residential SF	258,259	978,675
	Residential Dwelling Units	63	1,223
Neighborhood Commercial	Non-Residential SF	14,787	14,787
Residential Planned Development	Residential Dwelling Units	37	88
Unlimited Commercial	Non-Residential SF	58,827	50,620
	Residential Dwelling Units	-	30
West Carson Residential 1	Residential Dwelling Units	955	851
West Carson Residential 3	Residential Dwelling Units	87	171
West Carson Residential 4	Non-Residential SF	42,473	-
	Residential Dwelling Units	116	484

FIGURE 2.2: PROPOSED LAND USE ZONING



Source: West Carson Transit Oriented Development Specific Plan

3 ANALYSIS METHODOLOGY

The traffic analysis to be prepared for the West Carson Transit Oriented Development (TOD) Specific Plan follows the requirements and guidelines set forth by the County of Los Angeles, City of Carson, City of Torrance, and Caltrans. The intersection analysis methodology and performance criteria used in this analysis conform to the County and City requirements for traffic impact studies prepared consistent with the California Environmental Quality Act (CEQA) guidelines.

The traffic analysis conducted for the West Carson TOD Specific Plan includes an assessment of traffic conditions for 37 existing intersections located within the unincorporated area of West Carson, the City of Torrance and the City of Carson (Figure 3.1). Analysis scenarios and horizon years are summarized in Table 3.1. It should be noted that County of Los Angeles specifies use of the Existing Year (2016) No Project as a baseline for comparison to the Existing Year (2016) With Project and Future Year (2035) With Project scenarios; thus, County intersection performance and impacts in the Future Year (2035) No Project scenario were not assessed.

TABLE 3.1: ANALYSIS SCENARIOS

ANALYSIS YEAR	ANALYSIS SCENARIO
2016	Existing Year (2016) No Project
2016	Existing Year (2016) With Project
2035	Future Year (2035) No Project
2035	Future Year (2035) With Project

3.1 TRAFFIC COUNT DATA

The existing intersection turning movement counts were taken on Tuesday, May 24, 2016 at 37 intersections during the morning peak period (7:00 AM to 9:00 AM) and the afternoon peak period (4:00 PM to 6:00 PM). The AM and PM peak analyses are based on the hour of highest total intersection volume during the morning and afternoon periods. Average daily traffic volumes were also conducted on Tuesday, May 24, 2016 at 10 roadway segments. The daily segment and peak hour intersection count data sheets are included in the Appendix of this report.

3.2 TRAVEL DEMAND FORECASTING

The horizon year 2035 volumes are derived based on the Southern California Association of Governments (SCAG) regional model. The SCAG regional model is the accepted regional model for forecasting travel demand in Los Angeles County. The SCAG regional model was used to develop Existing Year (2016) No Project and Future Year (2035) No Project scenario volumes. Growth rates between base year and future year were developed and applied to existing turning movement volumes to determine future year turning movement volumes. The compound annual growth rate (CAGR) developed from these comparisons was determined to be 0.6284%.

3.3 PEAK HOUR LINK LEVEL OF SERVICE ANALYSIS

The peak hour link level of service analysis was conducted by calculating the traffic volume in each direction for a specified link segment. Link volumes were derived from the peak hour turning movement volumes between the two adjacent study intersections. A volume-to-capacity (V/C) ratio was taken; the LOS letter grade was assigned using the range of V/C values shown in Table 3.2. LOS D is generally taken to be the minimum.

FIGURE 3.1: PROJECT SITE LOCATION AND STUDY INTERSECTIONS / LINKS

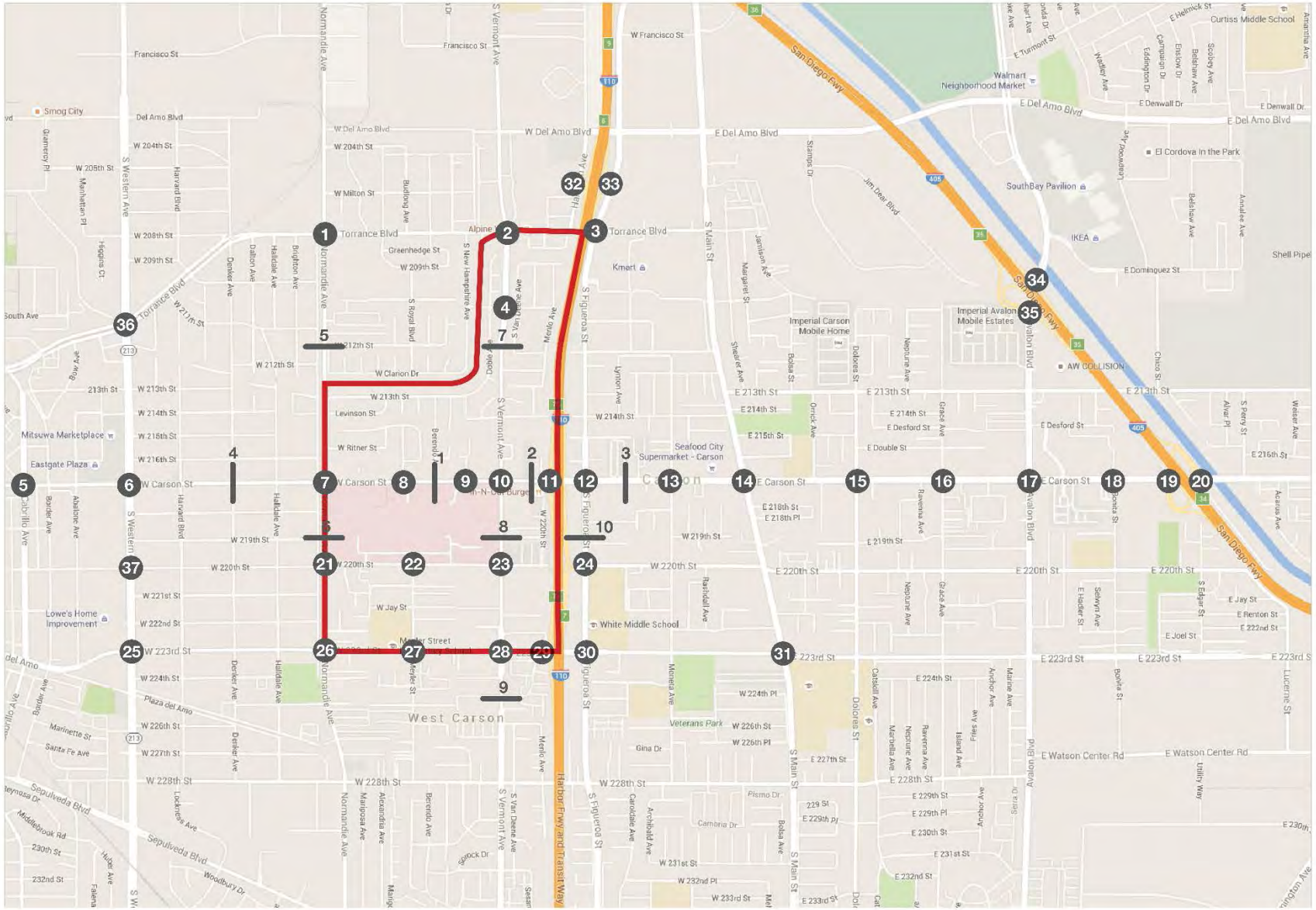


TABLE 3.2: ICU AND LINK LEVEL OF SERVICE DEFINITION

LEVEL OF SERVICE	RANGE OF V/C RATIOS	DEFINITION
A	0.00 – 0.60	**Free Flow:** Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	0.61 – 0.70	**Stable Flow:** The ability to maneuver within the traffic stream is only slightly restricted and control delay at intersections is not significant. The travel speed is between 67% and 85% of base free-flow speed.
C	0.71 – 0.80	**Stable Flow:** The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	0.81 – 0.90	**Approaching Unstable Flow:** Small increases in flow may cause substantial increases in delay and decreases in travel speed. The travel speed is between 40% and 50% of the base free-flow speed.
E	0.91 – 1.00	**Unstable Flow:** Significant delay is commonly experienced. The travel speed is between 30% and 40% of the base free-flow speed.
F	> 1.00	**Forced Flow:** Congestion is likely occurring at intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed.

Source: *Transportation Research Circular No. 212, Interim Materials on Highway Capacity,* Transportation Research Board, 1980.

3.4 INTERSECTION LEVEL OF SERVICE ANALYSIS AND IMPACT CRITERIA

This section summarizes the methods by which the study intersection performance and impacts were assessed. The jurisdictions in which the study intersections are located are the County of Los Angeles, City of Los Angeles, City of Torrance, City of Carson, and Caltrans. Intersections were assessed utilizing all applicable jurisdiction assessment criteria. Study intersections were selected for analysis based on the forecasted project trip generation and distribution, particularly in consideration of each agency's guidelines in determining need for analysis based on the forecasted amount of project trips traveling to each intersection. The Los Angeles County Department of Public Works (LACDPW) reviewed and approved the proposed study intersections locations. The analysis also considered a comment letter provided to the County by Caltrans District 7 during the Notice of Preparation (NOP) comment period. Caltrans-controlled intersections have been included as study locations based on a review of Caltrans guidelines of forecast trip generation. In cases where intersections suggested by Caltrans for analysis are not included, the project team conducted discussions with Caltrans regarding existing level of service and the relatively small number of project trips expected at these locations.

3.4.1 COUNTY OF LOS ANGELES

Traffic conditions at signalized intersections are evaluated using the Intersection Capacity Utilization (ICU) method. The ICU method is based on intersection volume-to-capacity (V/C) ratios. The V/C value for each movement is the observed or forecast volume divided by the saturation flow volume. The intersection ICU value is the sum of the V/C values for the critical movement on each leg, where critical movements are the pairs of conflicting movements with the highest combined V/C values. ICU is expressed as a decimal value (e.g. 0.740), where 1.00 represents the saturated condition in which the volume of traffic flow is equal to the capacity. This study uses maximum saturation volumes of 1,600 vehicles per hour per lane (VPHPL) for turning and through lanes; a lane saturation value of 2,880 VPHPL was used for dual left-turn lanes. A 10% increase in intersection saturation was established when accounting for signal timing mitigations such as the implementation of ATSAC/ATCS.

The County of Los Angeles traffic study guidelines do not specify a method for assessing unsignalized intersections. In these instances, the Highway Capacity Manual (HCM) 2010 All-Way Stop Control (AWSC) method was employed using the Synchro 9 software.

The efficiency of traffic operations is measured in terms of Level of Service (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. Evaluation of intersections involves the assignment of grades from "A" to "F," with LOS "A" representing the highest level operating conditions and LOS "F" representing extremely congested and restricted operations. Each letter grade corresponds to a range of V/C or delay values, as described in Table 3.2. LOS D is generally the minimum level of service for both signalized and unsignalized intersections.

In conformance with the County guidelines, intersection performance for the following scenarios were assessed in order to determine impacts:

- Existing Year (2016) No Project
- Existing Year (2016) With Project
- Future Year (2035) With Project

The Existing Year (2016) No Project was utilized as the baseline for comparison to the Existing Year (2016) With Project and Future Year (2035) With Project scenarios. The County of Los Angeles criteria for impact thresholds are shown below in Table 3.3.

TABLE 3.3: COUNTY OF LOS ANGELES SIGNIFICANT IMPACT TRESHOLD CRITERIA

LEVEL OF SERVICE	RANGE OF V/C RATIO	SIGNIFICANT IMPACT THRESHOLD PROJECT V/C INCREASE OR RESULTANT V/C
A	0 - .600	0.750
B	> 0.600 - 0.700	0.750
C	> 0.700 - 0.800	0.04 or more
D	> 0.800 - 0.900	0.02 or more
E	> 0.900 - 1.000	0.01 or more
F	> 1.000	0.01 or more

Source: Los Angeles County Department of Public Works Traffic Impact Analysis Report Guidelines, 2013.

3.4.2 CITY OF LOS ANGELES

Per the traffic impact study guidelines set forth by the City of Los Angeles, the Critical Movement Analysis (CMA) method was utilized to assess intersection performance and impacts. The method was implemented with the Department of Transportation's (LADOT) CalcaDB software (CMA worksheets). Lane capacities vary due to the intersection phasing serving as the base upon which capacities are determined. Per correspondence with LADOT, the number of phases input was determined to be the amount of phase movements and not individual phases; the opposed phasing input was taken to be split phasing. A 10% increase in flow rate is taken into account within the worksheet when accounting for signal timing mitigations such as the implementation of ATSAC/ATCS.

The efficiency of traffic operations is measured in terms of Level of Service (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. Evaluation of intersections involves the assignment of grades from "A" to "F," with LOS "A" representing the highest level operating conditions and LOS "F" representing extremely congested and restricted operations. Each letter grade corresponds to a range of V/C values, as described in Table 3.2. LOS D is generally the minimum level of service for both signalized and unsignalized intersections.

Intersection performance in the following scenarios were assessed in order to determine impacts:

- Existing Year (2016) No Project
- Existing Year (2016) With Project
- Future Year (2035) No Project
- Future Year (2035) With Project

LADOT outlines guidelines for threshold criteria to determine significant traffic impacts. The thresholds are outlined in Table 3.4.

TABLE 3.4: CITY OF LOS ANGELES SIGNIFICANT IMPACT THRESHOLD CRITERIA

LEVEL OF SERVICE	RANGE OF V/C RATIO	SIGNIFICANT IMPACT THRESHOLD PROJECT V/C INCREASE
C	0.71 - 0.80	0.04 or more
D	0.81 - 0.90	0.02 or more
E / F	> 0.90	0.01 or more

Source: City of Los Angeles Transportation Impact Analysis Study Guidelines – Los Angeles Department of Transportation (LADOT), 2016.

3.4.3 CITY OF TORRANCE

The City of Torrance assesses intersection performance and impacts utilizing the Highway Capacity Manual (HCM) 2000 method. The Synchro 9 software was used to implement this method. Standard settings were utilized. A 10% increase in flow rate was established when accounting for signal timing mitigations such as the implementation of ATSAC/ATCS. The efficiency of traffic operations is measured in terms of Level of Service (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. Evaluation of intersections involves the assignment of grades from “A” to “F,” with LOS “A” representing the highest level operating conditions and LOS “F” representing extremely congested and restricted operations. LOS D is generally the minimum level of service for signalized intersections.

Intersection performance in the following scenarios were assessed in order to determine impacts:

- Existing Year (2016) No Project
- Existing Year (2016) With Project
- Future Year (2035) No Project
- Future Year (2035) With Project

The City of Torrance maintains criterial for thresholds of significance as outlined in Table 3.5.

- The project causes a change from LOS D or better to LOS E or F; or
- The project causes a change from LOS E to LOS F; or
- If the intersection is operating at LOS F in the baseline condition, any increase in vehicle delay is taken to be an impact; LOS should be returned to, at least, the pre-project conditions.

TABLE 3.5: CITY OF TORRANCE SIGNIFICANT IMPACT THRESHOLD CRITERIA

LEVEL OF SERVICE	SIGNIFICANT IMPACT THRESHOLD DELAY INCREASE OR RESULTANT LOS
A / B / C / D	LOS E or LOS F
E	LOS F
E / F	0

Source: City of Torrance General Plan Update - Traffic Impact Analysis (RBF, 2009).

3.4.4 CITY OF CARSON

The City of Carson assesses intersection performance and impacts using the Intersection Capacity Utilization (ICU) method. The ICU method is based on intersection volume-to-capacity (V/C) ratios. The V/C value for each movement is the observed or forecast volume divided by the saturation flow volume. The intersection ICU value is the sum of the V/C values for the critical movement on each leg, where critical movements are the pairs of conflicting movements with the highest combined V/C values. ICU is expressed as a decimal value (e.g. 0.740), where 1.00 represents the saturated condition in which the volume of traffic flow is equal to the capacity. This study uses maximum saturation volumes of 1,600 vehicles per hour per lane (VPHPL) for turning and through lanes; a lane saturation value of 2,560 VPHPL was used for dual left-turn lanes. A 10% increase in intersection saturation was established when accounting for signal timing mitigations such as the implementation of ATSAC/ATCS.

The efficiency of traffic operations is measured in terms of Level of Service (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. Evaluation of intersections involves the assignment of grades from “A” to “F,” with LOS “A” representing the highest level operating conditions and LOS “F” representing extremely congested and restricted operations. Each letter grade corresponds to a range of V/C or delay values, as described in Table 3.2. LOS D is generally the minimum level of service for signalized intersections.

The following scenarios were assessed in order to determine impacts:

- Existing Year (2016) No Project
- Existing Year (2016) With Project
- Future Year (2035) No Project
- Future Year (2035) With Project

The City of Carson uses the following thresholds of significance to assess project impacts:

- The addition of project trips causes an intersection V/C ratio increase of 0.02 or more; and
- The intersection is projected to operate at LOS E or F under the Future with Project conditions.

3.4.5 CALTRANS

Caltrans assesses facility performance and impacts utilizing the Highway Capacity Manual (HCM) 2000 method. Facilities evaluated with this method include freeway terminals (intersections) and off-ramps (queues). The Synchro 9 software was used to implement this method. Standard settings were utilized. A 10% increase in flow rate was established when accounting for signal timing mitigations such as the implementation of ATSAC/ATCS. The efficiency of traffic operations is measured in terms of Level of Service (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. Evaluation of intersections involves the assignment of grades from "A" to "F," with LOS "A" representing the highest level operating conditions and LOS "F" representing extremely congested and restricted operations. LOS C is the minimum level of service for signalized intersections. Caltrans traffic impact analysis guidelines do not specify a minimum LOS for unsignalized intersections, therefore LOS C was taken to be the minimum as well. LOS designations for signalized intersections is presented in Table 3.6.

Intersection performance in the following scenarios were assessed in order to determine impacts:

- Existing Year (2016) No Project
- Existing Year (2016) With Project
- Future Year (2035) No Project
- Future Year (2035) With Project

Caltrans traffic impact analysis guidelines do not explicitly define a significant impact in terms of existing level of service and change in that level of service; therefore, a significant impact is considered to occur when:

- The addition of project trips causes a change from LOS C or better to LOS D or worse; or
- The addition of project trips causes a change from LOS D or worse to degrade to a lower LOS.
- If the intersection is operating at LOS F in the baseline condition, any increase in vehicle delay is taken to be an impact; LOS should be returned to, at least, the pre-project conditions.

TABLE 3.6: SIGNALIZED INTERSECTIONS LEVEL OF SERVICE

LOS	CONTROL DELAY PER VEHICLE
A	≤ 10
B	> 10 - 20
C	> 20 - 35
D	> 35 - 55
E	> 55 - 80
F	> 80

Source: Caltrans, Guide for the Preparation of Traffic Impact Studies, State of California Department of Transportation (2002)

3.5 STATE HIGHWAY ANALYSIS

Peak hour analyses for basic freeway segments and freeway off-ramps were conducted at locations designated by Caltrans as appropriate in order to assess the regional impacts on freeway facilities by project traffic. As a result, CMP monitoring station, freeway mainline, and freeway off-ramp queue analyses were performed. The CMP monitoring station analysis was performed in compliance with the traffic impact analysis procedures outlined in the *2010 Congestion Management Program for Los Angeles County* (Los Angeles County Metropolitan Transportation Authority, October 2010). The freeway mainline analysis was performed using the procedure outlined in the HCM 2010. Lastly, the freeway off-ramp queue analysis was performed in compliance with the procedure provided by Caltrans.

3.5.1 CMP MONITORING STATION ANALYSIS

Peak hour traffic conditions at six CMP monitoring stations were analyzed utilizing the procedures outlined in the CMP. The CMP method assesses a freeway segment based on the density to capacity ratio in the No Project and With Project scenarios for an analysis year. A summary of the CMP monitoring station locations analyzed is provided in Table 3.7. The designation of LOS based on the density to capacity ratio observed is summarized in Table 3.8. LOS F(1) through F(3) designations are assigned where severely congested conditions prevail for more than an hour.

TABLE 3.7: CMP MONITORING STATION LOCATIONS

ID	Freeway	Segment	Station	Direction
1	I-110	at Wilmington Boulevard s/o C Street	1045	NB
				SB
2	I-110	at Manchester Boulevard	1046	NB
				SB
3	I-405	at Santa Fe Avenue	1066	NB
				SB
4	I-405	south of I-110	1067	NB
				SB
5	I-405	north of Inglewood Avenue	1068	NB
				SB
6	SR-91	east of Alameda Street/Santa Fe Avenue	1033	EB
				WB

TABLE 3.8: CMP LEVEL OF SERVICE SUMMARY

LOS	V/C RATIO	LOS	V/C RATIO
A	0.00 - 0.35	F(0)	> 1.00 - 1.25
B	> 0.35 - 0.54	F(1)	> 1.25 - 1.35
C	> 0.54 - 0.77	F(2)	> 1.35 - 1.45
D	> 0.77 - 0.93	F(3)	> 1.45
E	> 0.93 - 1.00		

Source: 2010 Congestion Management Plan for Los Angeles County, Los Angeles Metropolitan Transportation Authority (October 2010)

Per the CMP, a significant impact is defined as:

- An increase in the V/C of 0.02 or more, causing LOS F (V/C > 1.00); or
- An increase in the V/C of 0.02 or more when the freeway segment operates at LOS F (V/C > 1.00) in the No Project scenario.

3.5.2 FREEWAY MAINLINE ANALYSIS

A freeway mainline analysis was conducted at the seven study locations listed in Table 3.9. The HCM 2010 methodology used to assess the freeway segments was implemented using the HCS 2010 software. The standard settings used are: a peak-hour factor of 0.94; level terrain; trucks and buses passenger-car equivalent of 2.0; and a free flow speed of 70 miles per hour. Additional inputs such as the segment volume (vehicles per hour) and percent of trucks and buses varied by location; these values were determined using traffic count data provided by the Caltrans Traffic Census Program for the year 2015. Freeway volumes were derived by applying the peak hour (K) and directional (D) factors to the annual average daily traffic (AADT) volumes for a location. In the instance that data was not available for a single location within reasonable range to a study location or the location data was believed to be inconsistent with the adjacent locations, the average of the upstream and downstream locations was taken (Segment 6). Volumes were then grown using the 0.6284% CAGR derived from the SCAG regional model to generate the year 2016 volumes. However, the percent of truck traffic calculated from the year 2015 data was not altered, as this value was observed to remain constant from the previous year (2014).

TABLE 3.9: FREEWAY MAINLINE STUDY LOCATIONS

ID	Freeway	Location	California Postmile	Absolute Postmile	Direction
1	SR-91	at Avalon Boulevard	7.55	11.5	EB
					WB
2	I-110	at SR-1 (Pacific Coast Highway)	4.17	4.1	NB
					SB
3	I-110	at Sepulveda Boulevard	5.6	5.5	NB
					SB
4	I-110	at El Segundo Boulevard	12.86	12.8	NB
					SB
5	I-405	at I-710	7.63	31.4	NB
					SB
6	I-405	south of I-110 (Carson Scales)	11.82	35.6	NB
					SB
7	I-405	at Western Avenue	14.34	38.1	NB
					SB

The HCM 2010 methodology utilizes lane density (pc/mi/ln) as the measure to determine a freeway segment's level of service. The designation of LOS based upon the density observed is outlined in Table 3.10. Caltrans maintains that the target LOS is the transition between LOS C and LOS D. It should be noted that because there is a linear relationship between freeway mainline density and queues, estimates for freeway mainline densities cannot be provided for conditions of extreme magnitude. Such is the case for instances in which large volumes are exceptionally experienced. When freeway demand conditions exceeds capacity, forced flow results and the corresponding formulas used to estimate density will not be appropriate. As a result, estimates for freeway mainline density are not provided for severe LOS F conditions. An overcapacity (OVR) designation is assigned in these cases.

TABLE 3.10: BASIC FREEWAY SEGMENTS LEVEL OF SERVICE DEFINITION

LOS	DENSITY (VEHICLES PER LANE-MILE)	DESCRIPTION
A	≤ 11	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.
B	11 - 18	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.
C	18 - 26	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.
D	26 - 35	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.
E	35 - 45	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.
F	> 45	Represents a breakdown in flow.

Source: Highway Capacity Manual, Transportation Research Board (2010).

Significant impacts are determined as follows:

- The addition of project trips causes a change from LOS C or better to LOS D or worse; or
- The addition of 50 or more project trips to a freeway mainline segment operating at LOS F in the No Project scenario (based on discussion with Caltrans staff cited in the Traffic Impact Analysis for the Harbor UCLA Medical Center Master Plan Project).

3.5.3 FREEWAY OFF-RAMP QUEUE ANALYSIS

Per Caltrans traffic study guidelines, a queue analysis for freeway off-ramps at intersections within a reasonable distance to the project location is provided. The queue analysis was performed at off-ramps identified by Caltrans as having the potential to be significantly affected by the addition of project traffic; the analysis was performed in accordance with the methodology produced from correspondence with Caltrans in which 85% of the measured queue length is to be used as the threshold for determining a significant impact. The analysis was conducted by measuring the storage capacity of off-ramps from scaled online images (Google Maps). Utilizing the Synchro 9

traffic modeling software, a queue analysis report was generated for each scenario; 95th percentile queue lengths were taken from these reports. Queue analysis summaries are provided in the respective scenario section. Synchro queue reports are provided in the appendices of this report.

3.6 VEHICLE MILES TRAVELED (VMT) ANALYSIS

The VMT analysis is conducted using the California Emissions Estimator Model (CalEEMod), a statewide land use emissions model used to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both the construction and operation of a project. The model calculates these emissions based on the amount of direct and indirect vehicle miles traveled during the construction and operation of the project. Additionally, CalEEMod identifies emission-reducing mitigation measures and calculates the potential benefits of those measures selected.

The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with California Air Districts. Default data such as emission factors and trip lengths are provided by various air districts in order to take into account local requirements and conditions.

For the purposes of this report, CalEEMod was used to demonstrate the benefits of the TOD-associated development benefits in the existing year and future year scenarios. In particular, the model will be used to assess the change in total VMT and VMT per capita for the No Project, With Project, and With Project + Pass-By and TDM Trip Reduction scenarios. The proposed scenarios developed for air quality analysis are listed below:

- Existing Year (2016)
- Existing Year (2016) w/ Project
- Existing Year (2016) w/ Project + Internal Capture and Pass-By Reductions
- Future Year (2035) No Project
- Future Year (2035) w/ Project
- Future Year (2035) w/ Project + Internal Capture, Pass-By, and TDM Trip Reductions

The With Project scenarios for each analysis year listed above were evaluated using the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* released by the Governor's Office of Planning and Research (OPR) in January 2016. The document outlines OPR's recommendations regarding methodology for conducting VMT analysis and establishing thresholds for significant transportation impacts as part of the CEQA analysis for new projects. These recommendations include:

- Vehicle miles traveled is the primary metric for determining transportation impacts across the state;
- Land use development near transit or in VMT-efficient areas should be presumed to cause a less than significant impact;
- Transit, active transportation, and rehabilitation projects that do not add motor vehicle capacity should also be presumes to cause a less than significant impact; and
- Implementation of a VMT metric should be phased in over time.

The City of West Carson has yet to adopt a metric for assessing significant impacts with regards to VMT due to the addition of various types of development projects. Thus, significant impacts and mitigation measures for these impacts, if applicable, are not identified as of the time which this report was produced.

4 EXISTING YEAR (2016) NO PROJECT

This section presents the Existing Year (2016) No Project scenario conditions of the project study area; this scenario will serve as the base for which all upcoming scenarios are assessed. The study area encompasses arterial roadways and signalized intersections within the project area as well as within a reasonable vicinity. Descriptions of geometric features and intersection level of service analysis results for the Existing Year (2016) are included in this section.

4.1 EXISTING ROADWAY NETWORK

Selected arterials that are located in the vicinity of the project corridor are described in this section. Items of note include existing geometry, pedestrian and bicycle facilities, and adjacent land uses.

TORRANCE BOULEVARD

Torrance Boulevard is classified as a Secondary Highway on the County's Highway Plan and runs east and west at the northern edge of the Specific Plan boundary. The corridor is surrounded mostly by residential land use with some light industrial and general commercial use. The posted speed limit is 35 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction with a dedicated auxiliary lane in the center. On-street parking is not permitted along the corridor within the project area. Torrance Transit operates a local bus line along a short segment of the corridor.

VERMONT AVENUE

Vermont Avenue is classified as a Major Highway on the County Highway Plan and runs north and south within the Specific Plan boundary. The corridor is surrounded by a variety of land uses including residential, mixed use, light industrial, and public space. The posted speed limit is 40 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction with a dedicated auxiliary lane in the center. Class II striped bike lanes also exist in each direction within the project area. On-street parking is permitted along much, but not all of the corridor within the project area. Torrance Transit and Metro operate bus lines along the corridor.

NORMANDIE AVENUE

Normandie Avenue is classified as a Secondary Highway on the County Highway Plan and runs north and south within the Specific Plan boundary. The corridor is surrounded by a variety of land uses including residential, mixed use, and public space. The posted speed limit is 35 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction with a dedicated auxiliary lane in the center. On-street parking is permitted along much, but not all of the corridor within the project area. Gardena Municipal and Torrance Transit operate bus lines along the corridor.

CARSON STREET

Carson Street is a Major Highway that runs east and west within the Specific Plan boundary. The corridor is surrounded by mainly mixed use land use and public space within the project area. The posted speed limit is 35 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction with a dedicated auxiliary lane in the center. On-street parking is permitted along much, but not all of the corridor within the project area. Torrance Transit and Metro operate bus lines along the corridor.

223RD STREET

223rd Street is a Secondary Highway that runs east and west within the Specific Plan boundary. The corridor is surrounded by a variety of land uses including residential, general commercial, light industrial, and public space. The posted speed limit is 25 miles per hour between Normandie Avenue and Vermont Avenue and 35 miles per hour east of Vermont Avenue. Within the project

area, the roadway consists of two travel lanes in each direction. On-street parking is permitted along much, but not all of the corridor within the project area.

220TH STREET

220th Street runs east and west within the Specific Plan Boundary and is surrounded by a variety of land uses including residential, commercial, and light manufacturing. The posted speed limit is 30 miles per hour. Within in the project area, the roadway consists of one travel lane in each direction. On-street parking is permitted along some, but not all of the corridor.

MEYLER STREET

Meyler Street runs north and south within the Specific Plan Boundary and is surrounded primarily by residential land uses. The posted speed limit is 25 miles per hour. Within in the project area, the roadway consists of one travel lane in each direction. On-street parking is permitted along some, but not all of the corridor.

FIGUEROA STREET

Figueroa Street is a Major Highway that runs north and south and is surrounded by commercial and residential land uses. The posted speed limit ranges from 25 to 40 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction divided by a center median. On street parking is permitted along most, but not all of the corridor.

MAIN STREET

Main Street is a Major Highway that runs north and south and is surrounded by commercial and residential land uses. The posted speed limit ranges from 25 to 40 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction divided by raised landscaped median. On street parking is permitted along most, but not all of the corridor.

AVALON BOULEVARD

Avalon Boulevard is a Major Highway that runs north and south and is surrounded by commercial and residential land uses. The posted speed limit ranges from 35 to 40 miles per hour. Within the project area, the roadway consists of three travel lanes in each direction divided by raised landscaped median. On street parking is permitted along some, but not all of the corridor.

4.2 STUDY INTERSECTION GEOMETRY AND PEAK HOUR VOLUMES

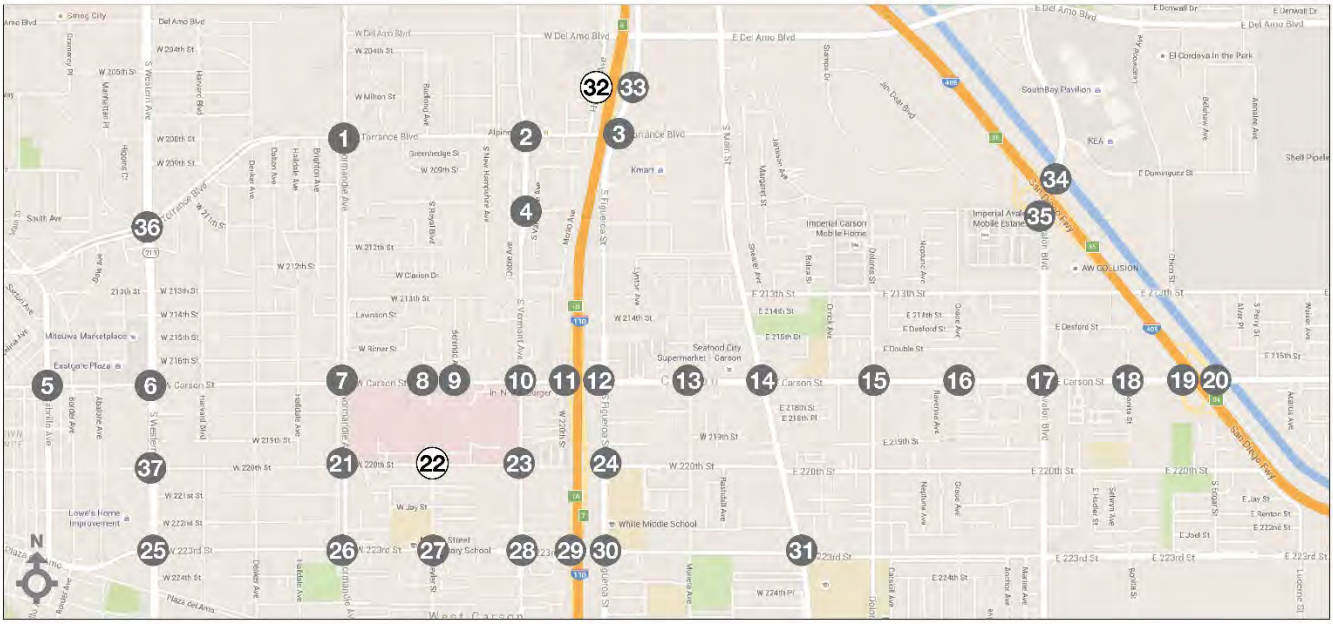
Thirty-seven existing intersections were selected in consultation with the County of Los Angeles for analysis based on traffic impact and vehicle volumes. The existing study intersections are:

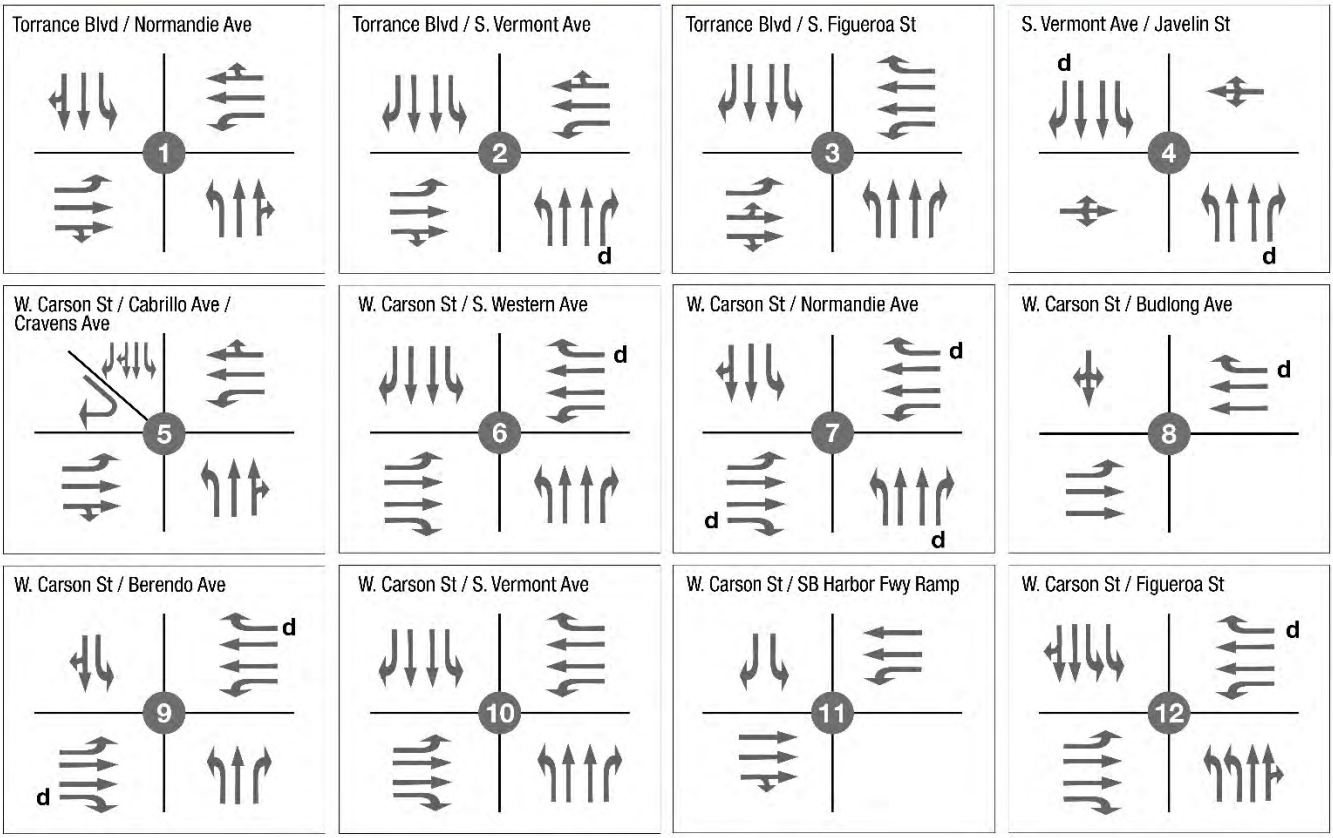
1. Normandie Avenue and Torrance Boulevard
2. Vermont Avenue and Torrance Boulevard
3. Figueroa Street and Torrance Boulevard
4. Vermont Avenue and Javelin Avenue
5. Cabrillo Avenue and Carson Street
6. Western Avenue and Carson Street
7. Normandie Avenue and Carson Street
8. Budlong Avenue and Carson Street
9. Berendo Avenue and Carson Street
10. Vermont Avenue and Carson Street
11. SB I-110 Ramps and Carson Street

12. Figueroa Street and Carson Street
13. Moneta Avenue and Carson Street
14. Main Street and Carson Street
15. Dolores Street and Carson Street
16. Grace Avenue and Carson Street
17. Avalon Boulevard and Carson Street
18. Bonita Street and Carson Street
19. SB I-1405 Ramps and Carson Street
20. NB I-1405 Ramps and Carson Street
21. Normandie Avenue and 220th Street
22. Meyler Street and 220th Street
23. Vermont Avenue and 220th Street
24. Figueroa Street and 220th/I-110 NB Ramps
25. Western Avenue and 223rd Street
26. Normandie Avenue and 223rd Street
27. Meyler Street and 223rd Street
28. Vermont Avenue and 223rd Street
29. SB I-110 Ramps and 223rd Street
30. Figueroa Street and 223rd Street
31. Main Street and 223rd Street
32. Hamilton Avenue and SB I-110 Ramps
33. Figueroa Street and NB I-110 Ramps
34. Avalon Boulevard and NB I-405 Ramps
35. Avalon Boulevard and SB I-405 Ramps
36. Western Avenue and Torrance Boulevard
37. Western Avenue and 220th Street

Existing study intersection geometries are shown in Figure 4.1. Additionally, Existing Year (2016) AM peak hour turning movement volumes are shown in Figure 4.2, and the PM peak hour volumes are shown in Figure 4.3.

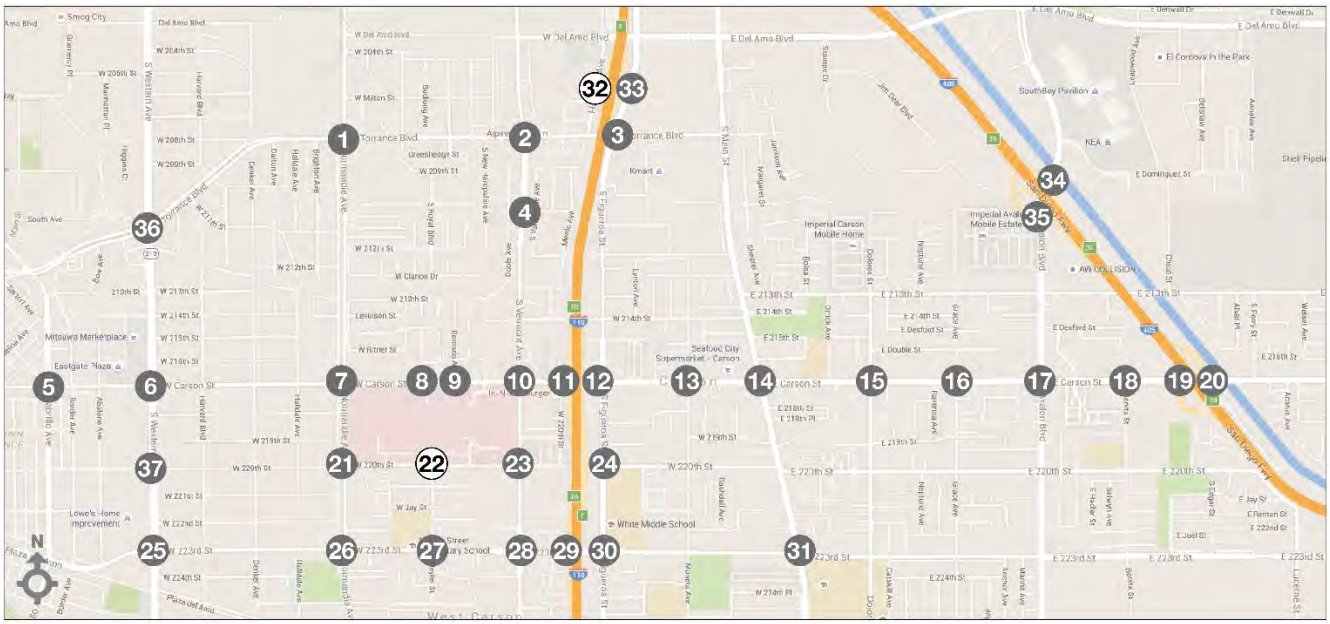
FIGURE 4.1: EXISTING YEAR (2016) INTERSECTION GEOMETRY

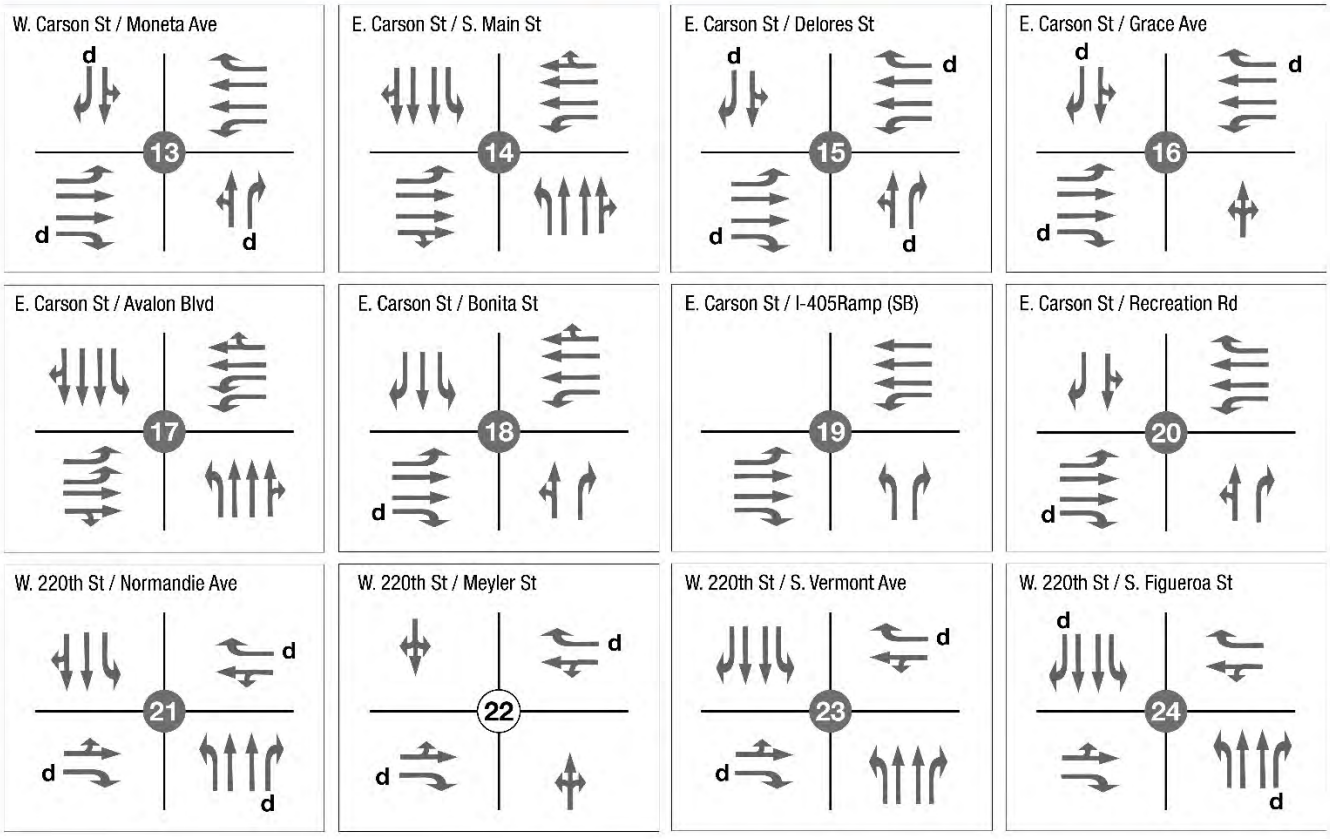




Legend

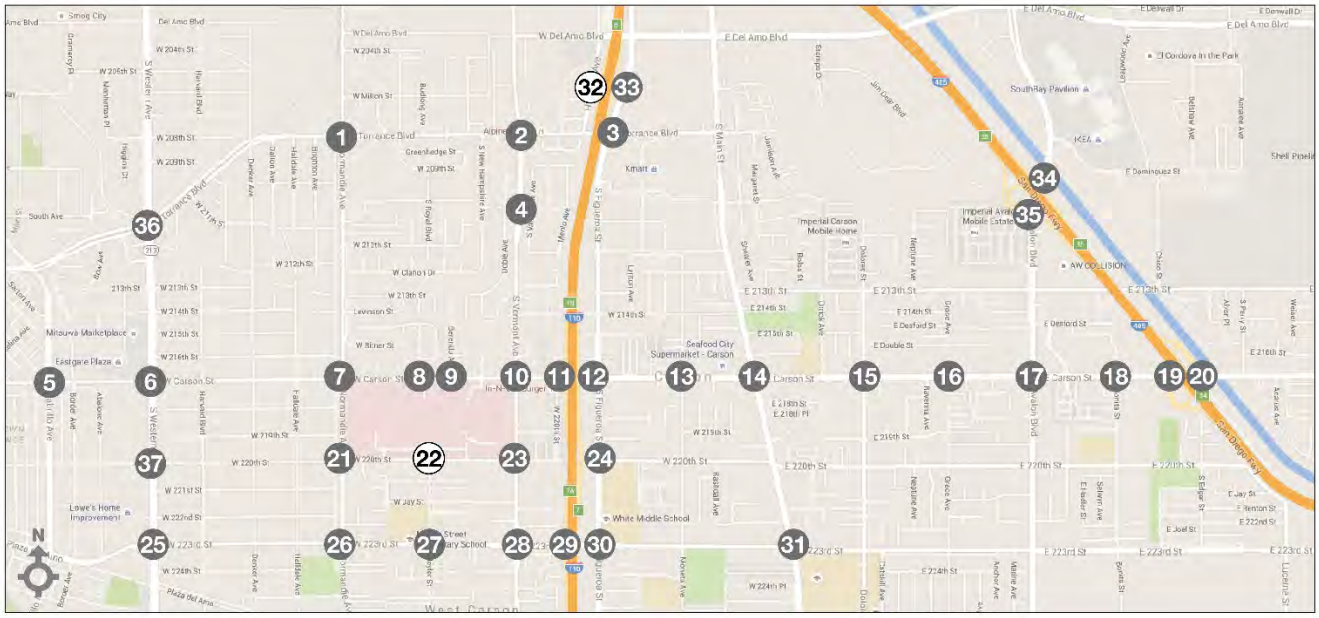
- Signalized Intersection
- Unsignalized Intersection
- Lane Geometry
- **d** de facto Right Turn

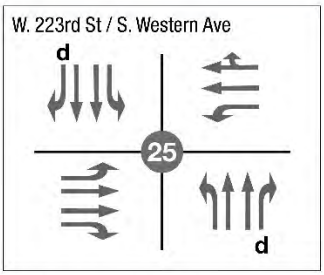


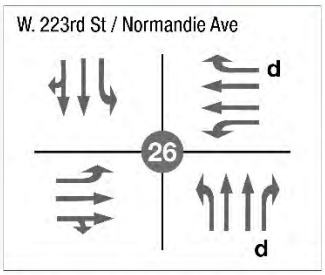


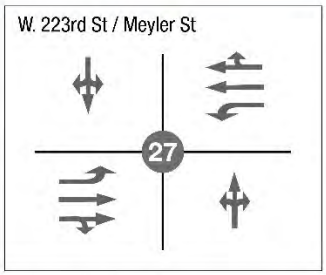
Legend

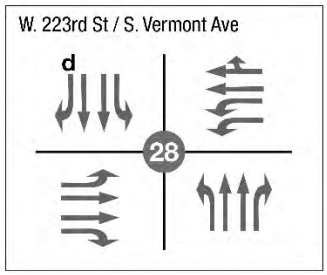
Signalized Intersection | Unsignalized Intersection | Lane Geometry | d de facto Right Turn

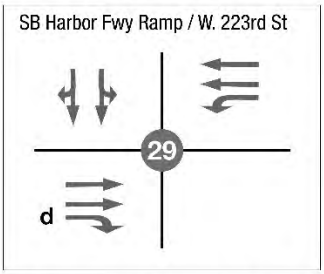


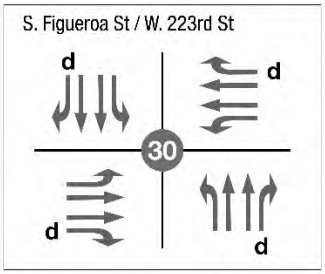


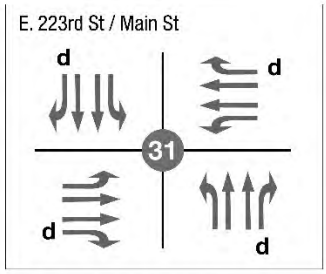


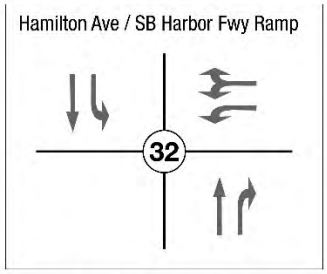


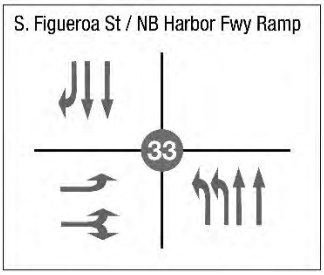


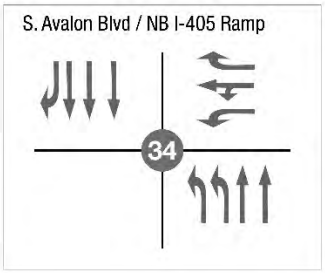


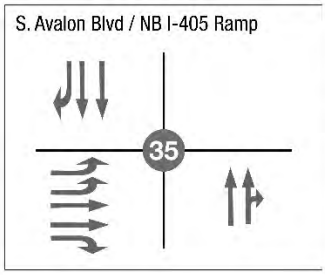


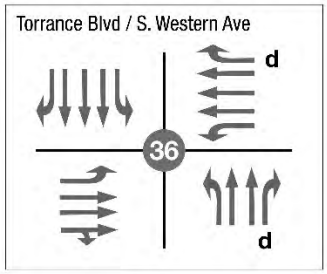






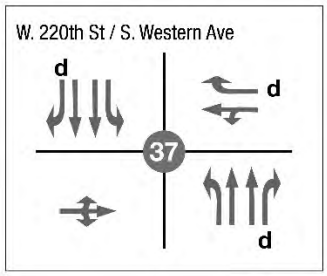






Legend

- Signalized Intersection
- Unsignalized Intersection
- Lane Geometry
- **d** de facto Right Turn



4.3 AVERAGE DAILY TRAFFIC

The average daily traffic volumes for the roadway segments of the 2016 existing year are summarized in Table 4.1. Road segment volumes have been included for noise and air quality purposes. Existing road segment volumes are extracted from 24-hour counts which can be found in Appendix A.

TABLE 4.1: EXISTING YEAR (2016) NO PROJECT ROADWAY SEGMENT DATA COLLECTION SUMMARY

ID	ROADWAY	LOCATION	SOURCE	ADT
1	Carson Street	West of Berendo Avenue	AimTD, May 2016	31,279
2	Carson Street	East of Vermont Avenue	AimTD, May 2016	36,819
3	Carson Street	East of Figueroa Street	AimTD, May 2016	19,337
4	Carson Street	West of Normandie Avenue	AimTD, May 2016	34,261
5	Normandie Avenue	North of Carson Street	AimTD, May 2016	18,173
6	Normandie Avenue	South of Carson Street	AimTD, May 2016	19,616
7	Vermont Avenue	South of Javelin Street	AimTD, May 2016	17,330
8	Vermont Avenue	South of Carson Street	AimTD, May 2016	21,151
9	Vermont Avenue	South of 223rd Street	AimTD, May 2016	21,803
10	Figueroa Street	South of Carson Street	AimTD, May 2016	21,275

4.4 PEAK HOUR LINK LEVEL OF SERVICE

AM and PM peak hour link analyses are presented in Table 4.2 and 4.3, respectively. The peak hour link volumes are derived from the peak hour turning movement volumes; more specifically, the arriving and departing volumes between two intersections that the link of interest joins. In the event that the departures of one intersection did not equal the arrivals of the second intersection, an average of the two volumes was taken to be the link volume experienced. A loss, or even gain, in volumes between two intersections is not uncommon, especially in situations where additional intersections or driveways are present between the intersections of interest. All selected links are expected to operate at LOS E or worse:

- Carson Street from Vermont Avenue to I-110 SB Ramp
- Carson Street from Western Avenue to Normandie Avenue

TABLE 4.2: EXISTING YEAR (2016) NO PROJECT AM PEAK HOUR LINK ANALYSIS

Link ID	Street	Segment		Class	Capacity per Lane	Number of Lanes		Volumes		V/C Ratio		Level of Service	
		From	To			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	Carson Street	Budlong Ave	Berendo Ave	Major	750	2	2	787	1354	0.52	0.90	A	D
2	Carson Street	Vermont Ave	I-110 SB Ramp	Major	750	3	2	903	1648	0.40	**1.10**	A	**F**
3	Carson Street	Figueroa St	Moneta Ave	Major	750	2	2	566	733	0.38	0.49	A	A
4	Carson Street	Western Ave	Normandie Ave	Major	750	2	2	967	1,344	0.64	0.90	B	D
5	Normandie Avenue	Torrance Blvd	Carson St	Secondary	600	2	2	925	579	0.77	0.48	C	A
6	Normandie Avenue	Carson St	220th St	Secondary	600	2	2	935	635	0.78	0.53	C	A
7	Vermont Avenue	Javelin St	Carson St	Major	750	2	2	999	792	0.67	0.53	B	A
8	Vermont Avenue	Carson St	220th St	Major	750	2	2	1076	792	0.72	0.53	C	A
9	Vermont Avenue	220th St	223rd St	Major	750	2	2	1,156	636	0.77	0.42	C	A
10	Figueroa Street	Carson St	220th St	Major	750	2	2	957	875	0.64	0.58	B	A

Bold and shaded = Unacceptable LOS.

TABLE 4.3: EXISTING YEAR (2016) NO PROJECT PM PEAK HOUR LINK ANALYSIS

Link ID	Street	Segment		Class	Capacity per Lane	Number of Lanes		Volumes		V/C Ratio		Level of Service	
		From	To			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	Carson Street	Budlong Ave	Berendo Ave	Major	750	2	2	1195	1136	0.80	0.76	C	C
2	Carson Street	Vermont Ave	I-110 SB Ramp	Major	750	3	2	1322	1217	0.59	0.81	A	D
3	Carson Street	Figueroa St	Moneta Ave	Major	750	2	2	714	644	0.48	0.43	A	A
4	Carson Street	Western Ave	Normandie Ave	Major	750	2	2	1396	1148	**0.93**	0.77	**E**	C
5	Normandie Avenue	Torrance Blvd	Carson St	Secondary	600	2	2	720	925	0.60	0.77	A	C
6	Normandie Avenue	Carson St	220th St	Secondary	600	2	2	654	983	0.55	0.82	A	D
7	Vermont Avenue	Javelin St	Carson St	Major	750	2	2	679	1053	0.45	0.70	A	B
8	Vermont Avenue	Carson St	220th St	Major	750	2	2	764	1062	0.51	0.71	A	C
9	Vermont Avenue	220th St	223rd St	Major	750	2	2	580	1199	0.39	0.80	A	C
10	Figueroa Street	Carson St	220th St	Major	750	2	2	542	1058	0.36	0.71	A	C

Bold and shaded = Unacceptable LOS.

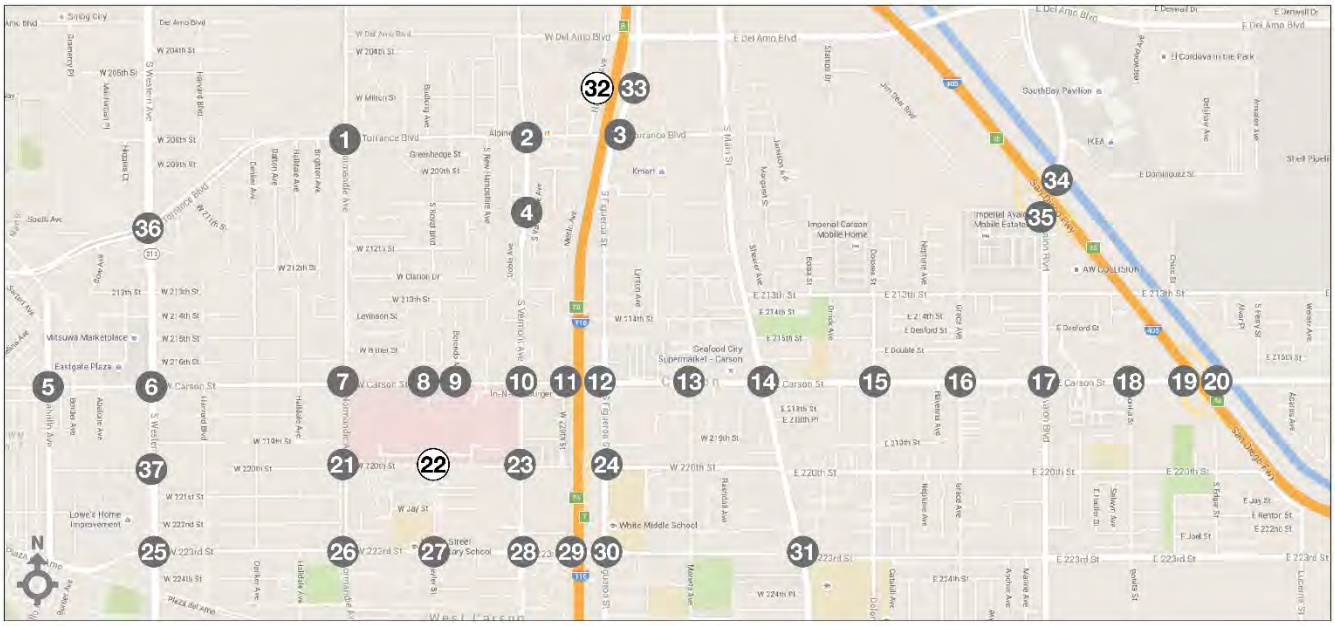
4.5 INTERSECTION LEVEL OF SERVICE

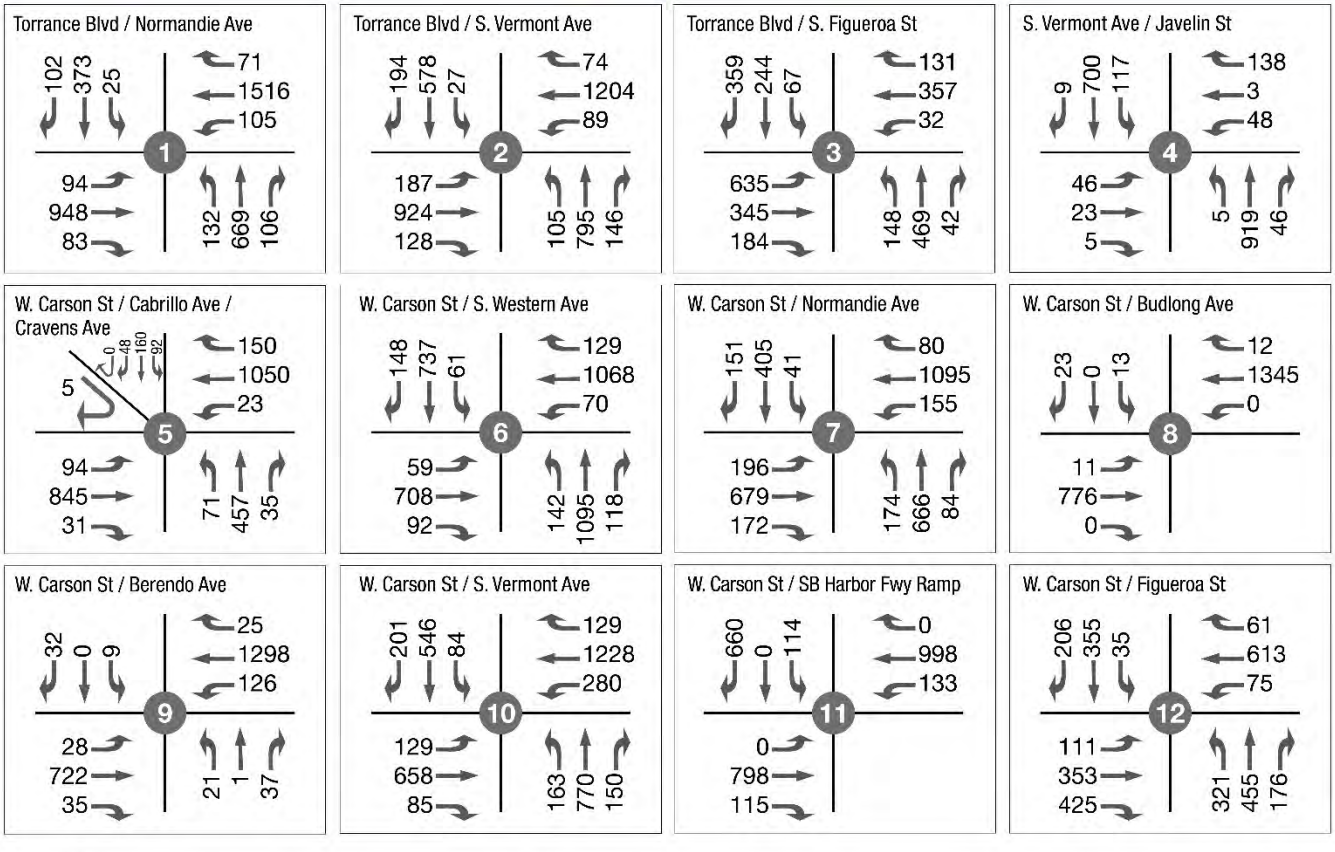
The peak hour turning movement volumes presented in Figure 4.1 and 4.2 were utilized in order to assess intersection performance. Intersection performance was determined using the methods outlined in Section 3. A summary of the AM and PM peak hour intersection level of service analysis results for the Existing Year (2016) No Project condition is presented in Table 4.4.

All thirty-seven study intersections currently operate at an acceptable level of service during both peak hour time periods under their respective standards with the exception of:

- Normandie Avenue and Torrance Boulevard
- Western Avenue and Carson Street
- Figueroa and 220th Street / NB I-110 Ramps
- Western Avenue and 223rd Street
- Hamilton Avenue and SB I-110 Ramps
- Western Avenue and Torrance Boulevard

FIGURE 4.2: EXISTING YEAR (2016) NO PROJECT VOLUMES – AM PEAK HOUR



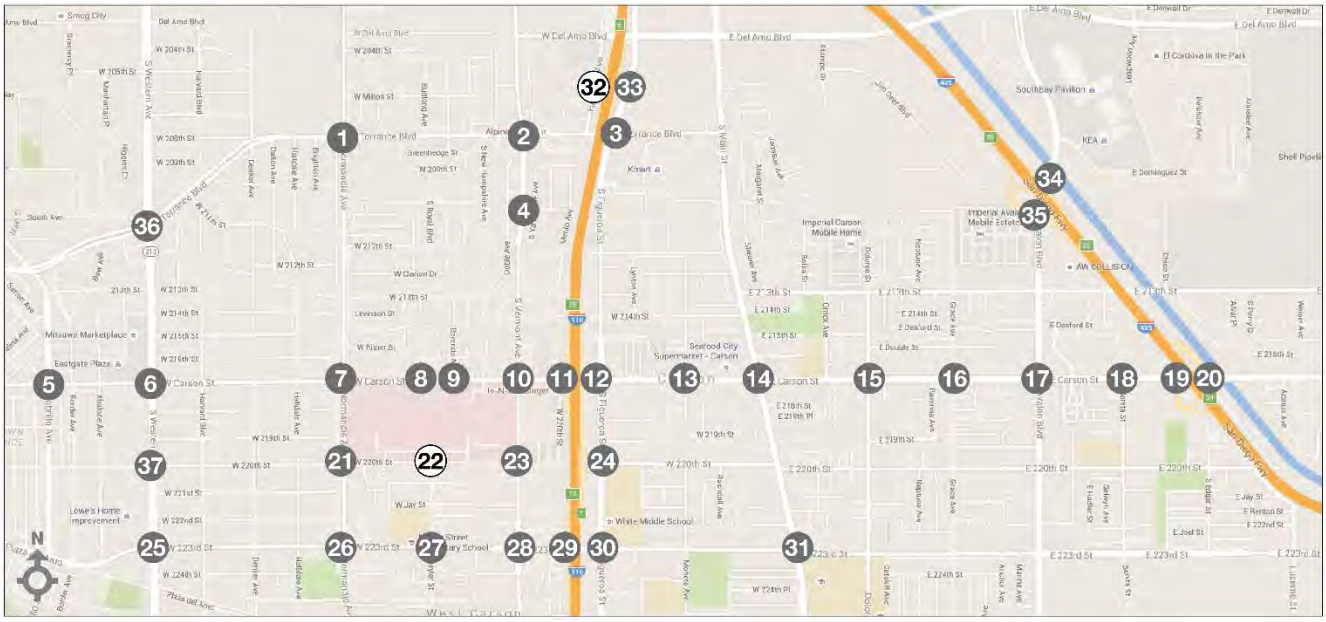


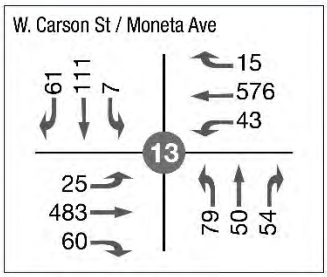
Legend

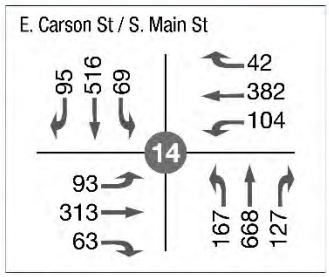
Signalized Intersection

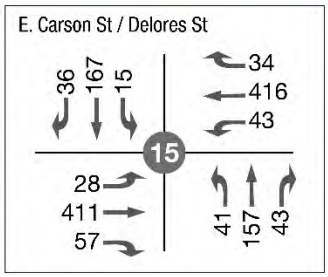
Unsignalized Intersection

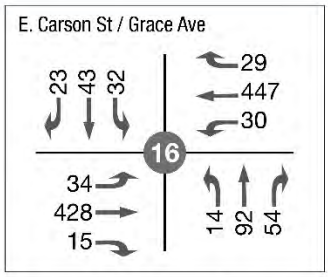
Lane Geometry

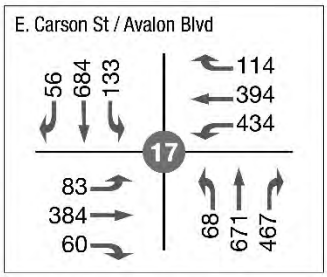


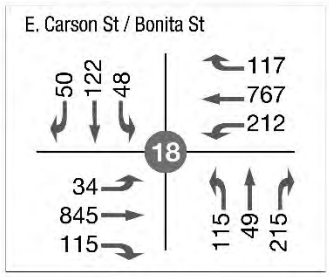


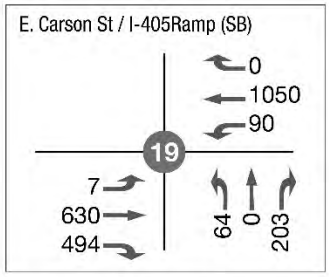


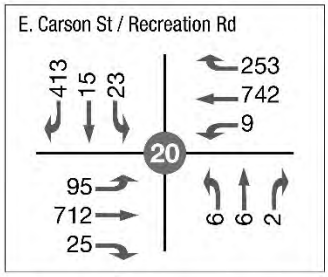


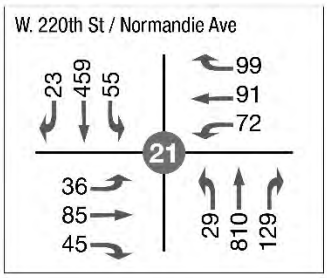


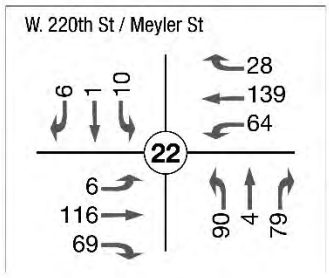


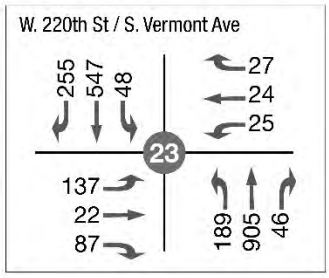


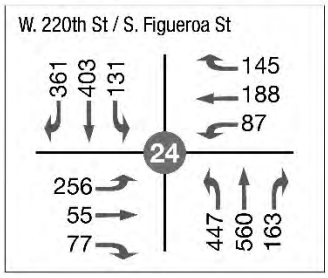






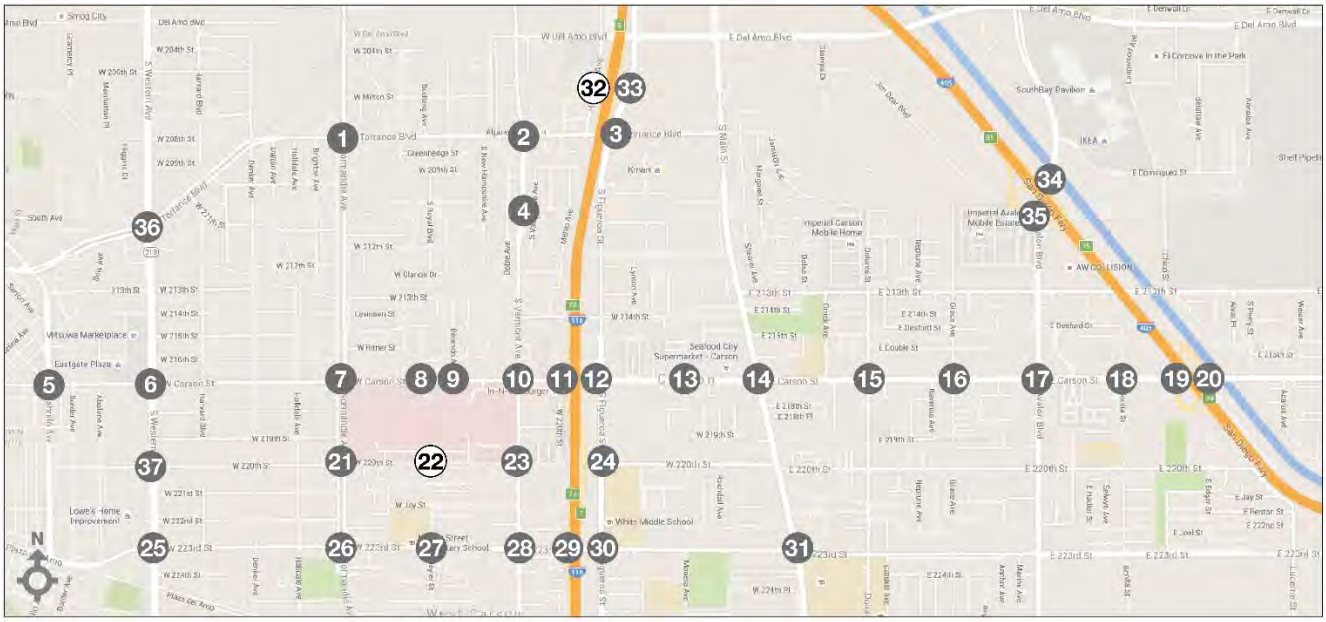


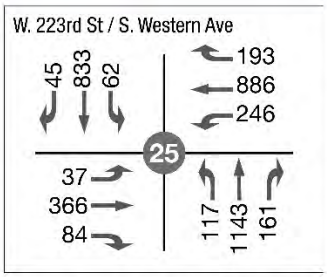


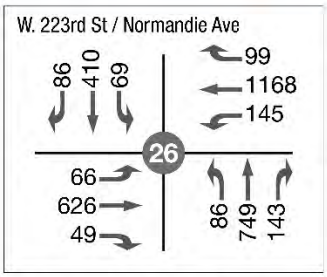


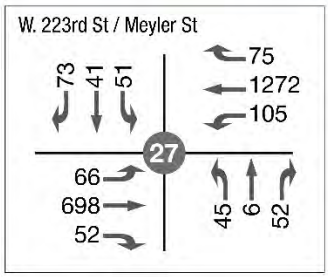
Legend

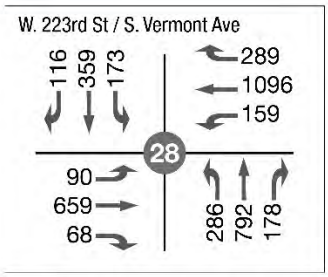
Signalized Intersection Unsignalized Intersection Lane Geometry

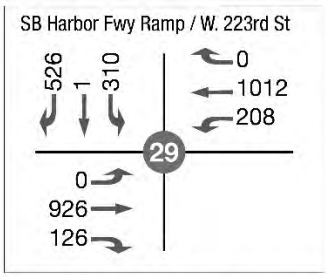

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
Torrance Blvd
Knott
Seafood City Supermarket - Carson
White Middle School
Lowe's Home Improvement
N

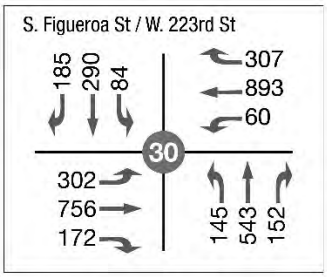

W. 223rd St / S. Western Ave
45
833
62
193
886
246
25
37
366
84
117
1143
161

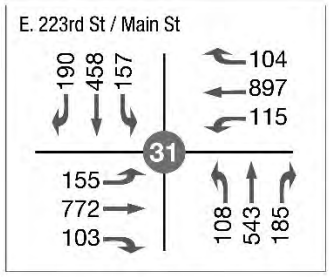

W. 223rd St / Normandie Ave
86
410
69
99
1168
145
26
66
626
49
86
749
143

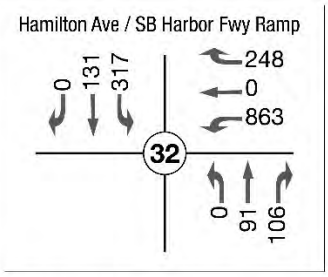

W. 223rd St / Meyler St
73
41
51
75
1272
105
27
66
698
52
45
6
52

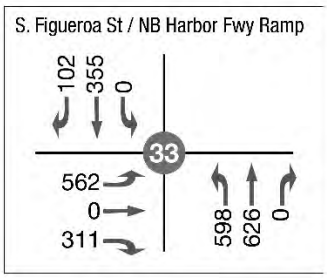

W. 223rd St / S. Vermont Ave
116
359
173
289
1096
159
28
90
659
68
286
792
178

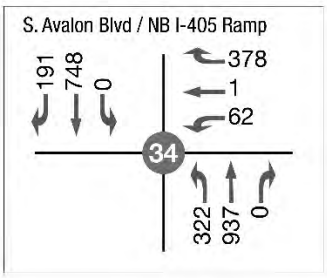

SB Harbor Fwy Ramp / W. 223rd St
526
1
310
0
1012
208
29
0
926
126

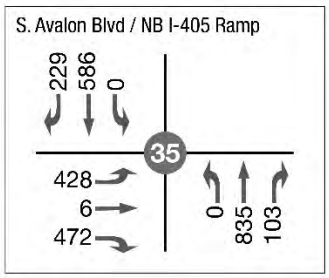

S. Figueroa St / W. 223rd St
185
290
84
307
893
60
30
302
756
172
145
543
152

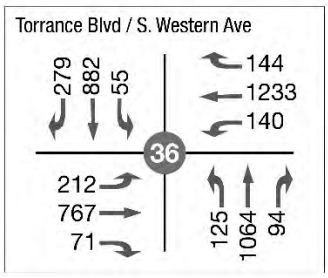

E. 223rd St / Main St
190
458
157
104
897
115
31
155
772
103
108
543
185

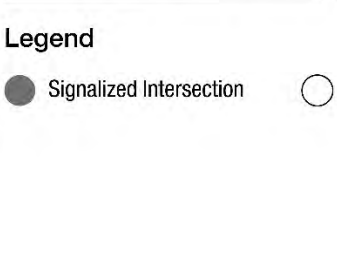

Hamilton Ave / SB Harbor Fwy Ramp
0
131
317
248
0
863
32
0
91
106


S. Figueroa St / NB Harbor Fwy Ramp
102
355
0
33
562
0
311
598
626
0


S. Avalon Blvd / NB I-405 Ramp
191
748
0
378
1
62
34
322
937
0


S. Avalon Blvd / NB I-405 Ramp
229
586
0
35
428
6
472
0
835
103


Torrance Blvd / S. Western Ave
279
882
55
144
1233
140
36
212
767
71
125
1064
94


Legend
Signalized Intersection
Unsignalized Intersection
Lane Geometry

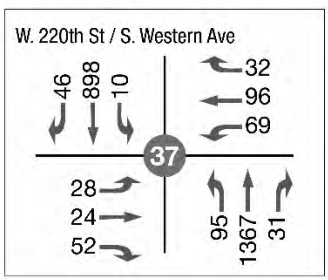
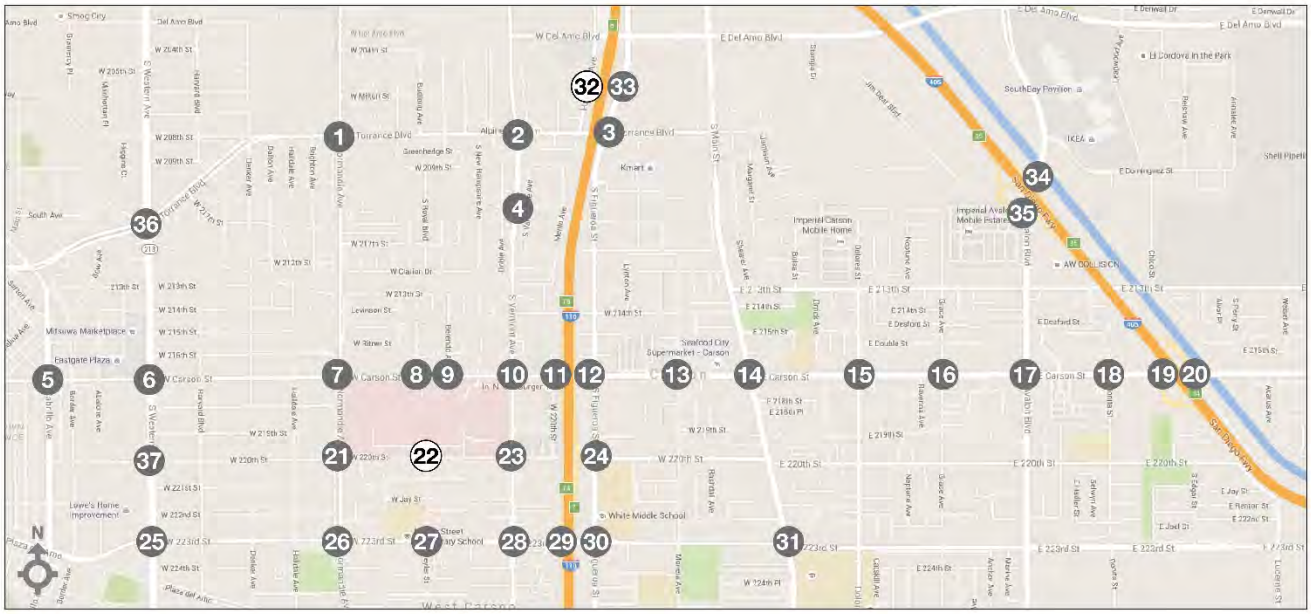
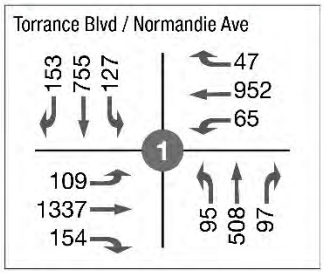
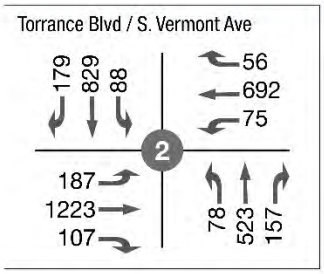
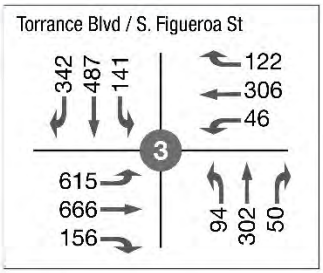

W. 220th St / S. Western Ave
46
898
10
32
96
69
37
28
24
52
95
1367
31

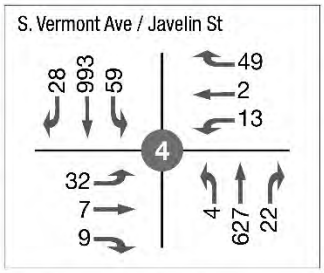
FIGURE 4.3: EXISTING YEAR (2016) NO PROJECT VOLUMES – PM PEAK HOUR

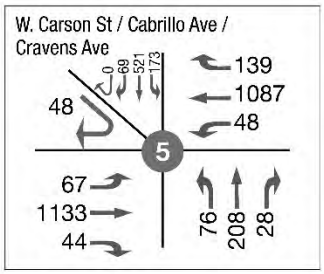


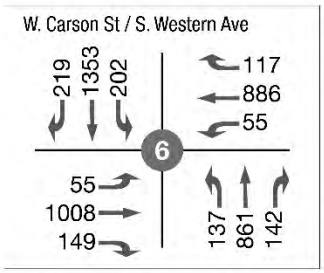


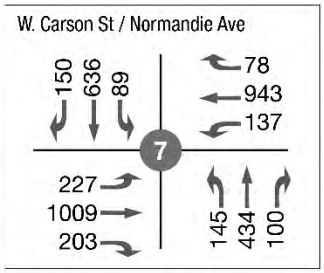


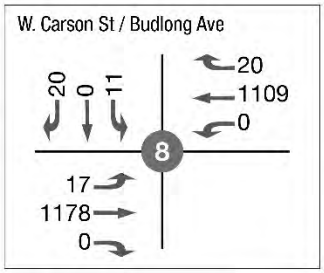


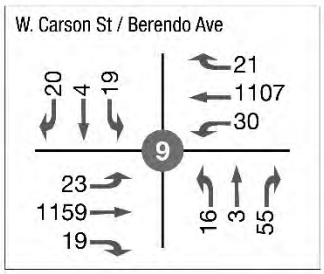


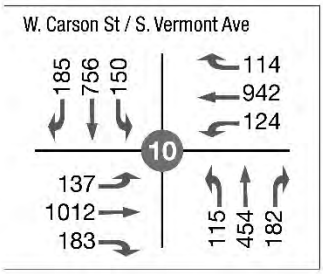


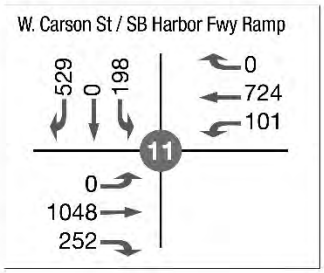


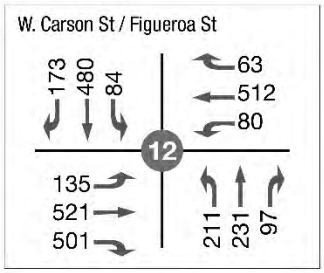






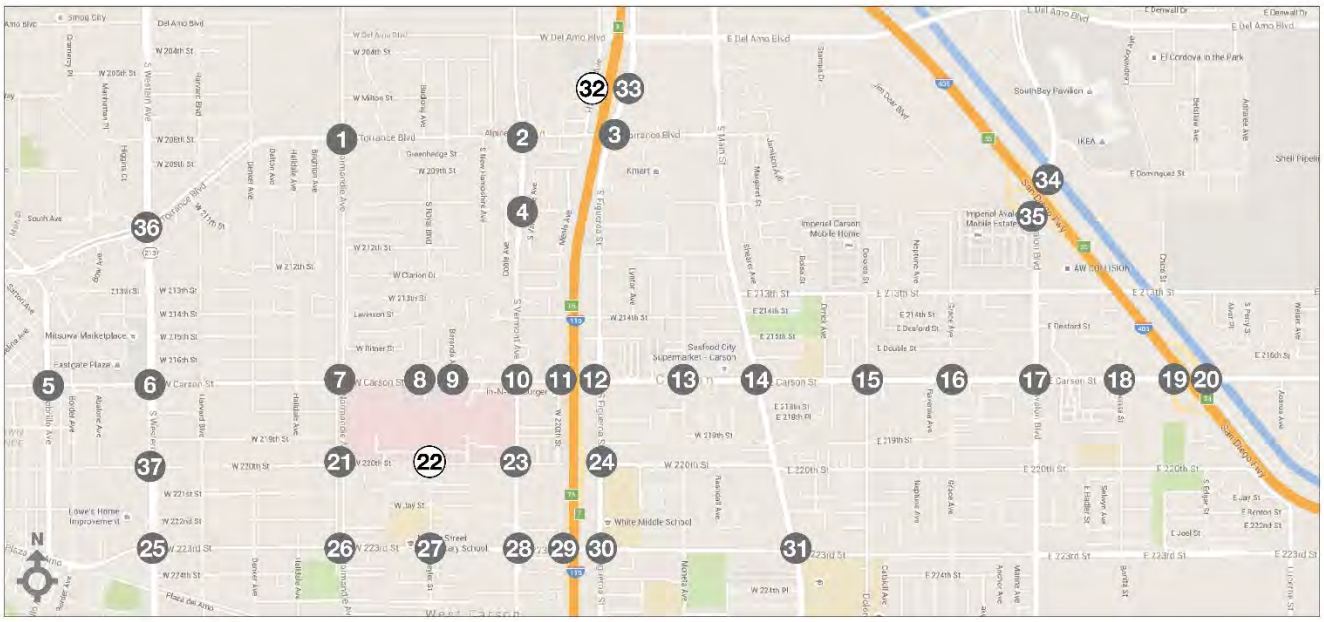


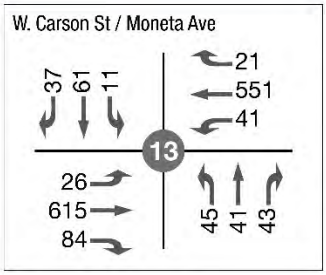


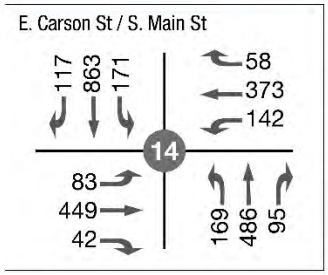


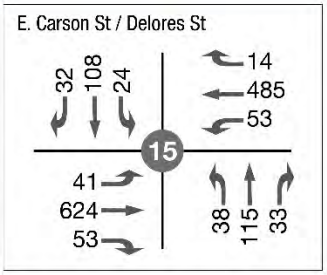
Legend

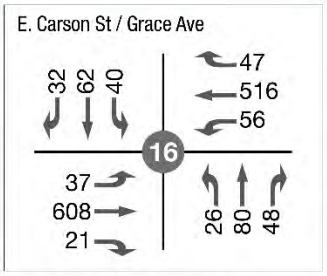
- Signalized Intersection
- Unsignalized Intersection
- Lane Geometry

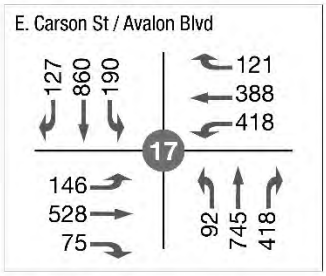


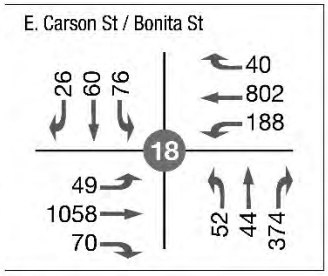


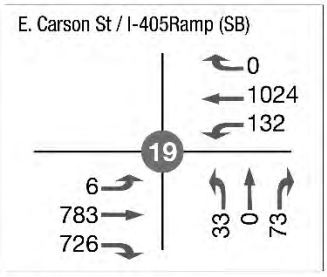


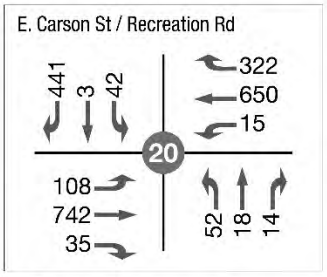


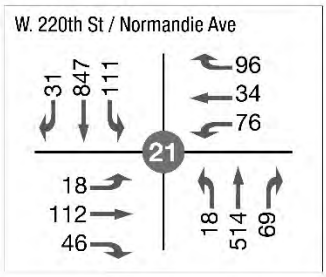


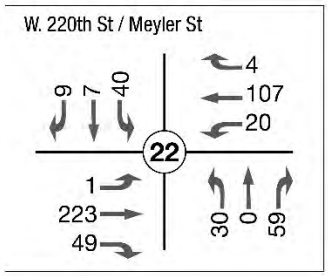


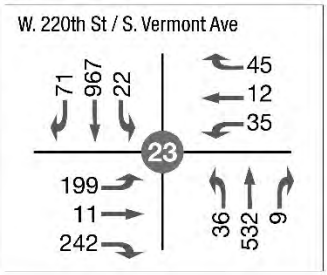


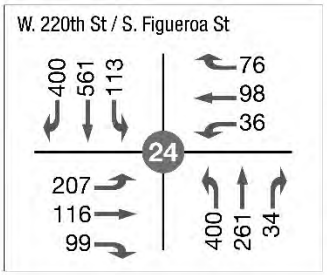






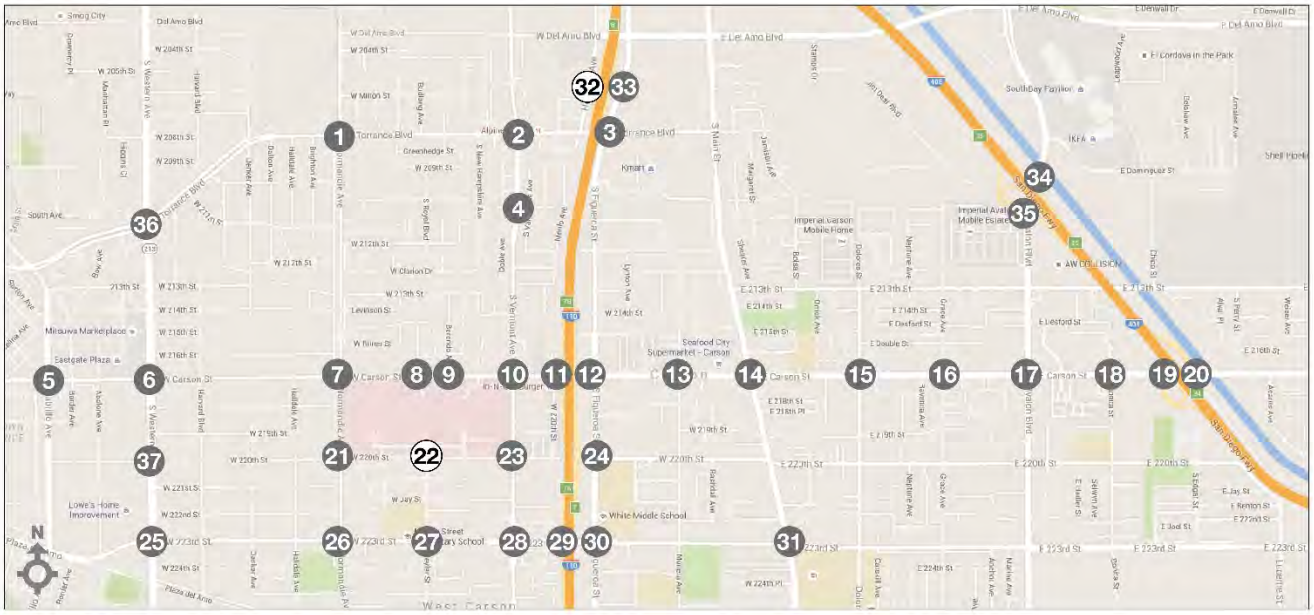






Legend

Signalized Intersection Unsignalized Intersection Lane Geometry


1 Torrance Blvd
2
3
4
5
6
7
8
9
10
11
12
13
14 Carson St
15
16
17 Carson St
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
W Carson St
Torrance Blvd
S Figueroa St
Del Amo Blvd
E Del Amo Blvd
Lee Acres Blvd
Main St
Avalon Blvd
Wilmington Ave
Normandie Ave
Western Ave
Vermont Ave
Meyler St
Harbor Fwy
Hamilton Ave
Carson Mall
Kmart
IKEA
SouthBay Pavilion
Seafood City Supermarket - Carson
Lowe's Home Improvement
White Middle School
Imperial Avalon Mobile Estates
Imperial Carson Mobile Home
AW DIVISION
Mirasuwa Marketplace
Eastgate Plaza
W 223rd St
E 223rd St
W 220th St
E 220th St
W 213th St
E 213th St
W 206th St
W 209th St
W 212th St
W 216th St
E 216th St
W 217th St
W 224th St
E 224th St
W 225th St
E 225th St
W 226th St
E 226th St
W 227th St
E 227th St
W 228th St
E 228th St
W 229th St
E 229th St
W 230th St
E 230th St
W 231st St
E 231st St
W 232nd St
E 232nd St
W 233rd St
E 233rd St
W 234th St
E 234th St
W 235th St
E 235th St
W 236th St
E 236th St
W 237th St
E 237th St
W 238th St
E 238th St
W 239th St
E 239th St
W 240th St
E 240th St
W 241st St
E 241st St
W 242nd St
E 242nd St
W 243rd St
E 243rd St
W 244th St
E 244th St
W 245th St
E 245th St
W 246th St
E 246th St
W 247th St
E 247th St
W 248th St
E 248th St
W 249th St
E 249th St
W 250th St
E 250th St
W 251st St
E 251st St
W 252nd St
E 252nd St
W 253rd St
E 253rd St
W 254th St
E 254th St
W 255th St
E 255th St
W 256th St
E 256th St
W 257th St
E 257th St
W 258th St
E 258th St
W 259th St
E 259th St
W 260th St
E 260th St
W 261st St
E 261st St
W 262nd St
E 262nd St
W 263rd St
E 263rd St
W 264th St
E 264th St
W 265th St
E 265th St
W 266th St
E 266th St
W 267th St
E 267th St
W 268th St
E 268th St
W 269th St
E 269th St
W 270th St
E 270th St
W 271st St
E 271st St
W 272nd St
E 272nd St
W 273rd St
E 273rd St
W 274th St
E 274th St
W 275th St
E 275th St
W 276th St
E 276th St
W 277th St
E 277th St
W 278th St
E 278th St
W 279th St
E 279th St
W 280th St
E 280th St
W 281st St
E 281st St
W 282nd St
E 282nd St
W 283rd St
E 283rd St
W 284th St
E 284th St
W 285th St
E 285th St
W 286th St
E 286th St
W 287th St
E 287th St
W 288th St
E 288th St
W 289th St
E 289th St
W 290th St
E 290th St
W 291st St
E 291st St
W 292nd St
E 292nd St
W 293rd St
E 293rd St
W 294th St
E 294th St
W 295th St
E 295th St
W 296th St
E 296th St
W 297th St
E 297th St
W 298th St
E 298th St
W 299th St
E 299th St
W 300th St
E 300th St
W 301st St
E 301st St
W 302nd St
E 302nd St
W 303rd St
E 303rd St
W 304th St
E 304th St
W 305th St
E 305th St
W 306th St
E 306th St
W 307th St
E 307th St
W 308th St
E 308th St
W 309th St
E 309th St
W 310th St
E 310th St
W 311th St
E 311th St
W 312th St
E 312th St
W 313th St
E 313th St
W 314th St
E 314th St
W 315th St
E 315th St
W 316th St
E 316th St
W 317th St
E 317th St
W 318th St
E 318th St
W 319th St
E 319th St
W 320th St
E 320th St
W 321st St
E 321st St
W 322nd St
E 322nd St
W 323rd St
E 323rd St
W 324th St
E 324th St
W 325th St
E 325th St
W 326th St
E 326th St
W 327th St
E 327th St
W 328th St
E 328th St
W 329th St
E 329th St
W 330th St
E 330th St
W 331st St
E 331st St
W 332nd St
E 332nd St
W 333rd St
E 333rd St
W 334th St
E 334th St
W 335th St
E 335th St
W 336th St
E 336th St
W 337th St
E 337th St
W 338th St
E 338th St
W 339th St
E 339th St
W 340th St
E 340th St
W 341st St
E 341st St
W 342nd St
E 342nd St
W 343rd St
E 343rd St
W 344th St
E 344th St
W 345th St
E 345th St
W 346th St
E 346th St
W 347th St
E 347th St
W 348th St
E 348th St
W 349th St
E 349th St
W 350th St
E 350th St
W 351st St
E 351st St
W 352nd St
E 352nd St
W 353rd St
E 353rd St
W 354th St
E 354th St
W 355th St
E 355th St
W 356th St
E 356th St
W 357th St
E 357th St
W 358th St
E 358th St
W 359th St
E 359th St
W 360th St
E 360th St
W 361st St
E 361st St
W 362nd St
E 362nd St
W 363rd St
E 363rd St
W 364th St
E 364th St
W 365th St
E 365th St
W 366th St
E 366th St
W 367th St
E 367th St
W 368th St
E 368th St
W 369th St
E 369th St
W 370th St
E 370th St
W 371st St
E 371st St
W 372nd St
E 372nd St
W 373rd St
E 373rd St
W 374th St
E 374th St
W 375th St
E 375th St
W 376th St
E 376th St
W 377th St
E 377th St
W 378th St
E 378th St
W 379th St
E 379th St
W 380th St
E 380th St
W 381st St
E 381st St
W 382nd St
E 382nd St
W 383rd St
E 383rd St
W 384th St
E 384th St
W 385th St
E 385th St
W 386th St
E 386th St
W 387th St
E 387th St
W 388th St
E 388th St
W 389th St
E 389th St
W 390th St
E 390th St
W 391st St
E 391st St
W 392nd St
E 392nd St
W 393rd St
E 393rd St
W 394th St
E 394th St
W 395th St
E 395th St
W 396th St
E 396th St
W 397th St
E 397th St
W 398th St
E 398th St
W 399th St
E 399th St
W 400th St
E 400th St
W 401st St
E 401st St
W 402nd St
E 402nd St
W 403rd St
E 403rd St
W 404th St
E 404th St
W 405th St
E 405th St
W 406th St
E 406th St
W 407th St
E 407th St
W 408th St
E 408th St
W 409th St
E 409th St
W 410th St
E 410th St
W 411th St
E 411th St
W 412th St
E 412th St
W 413th St
E 413th St
W 414th St
E 414th St
W 415th St
E 415th St
W 416th St
E 416th St
W 417th St
E 417th St
W 418th St
E 418th St
W 419th St
E 419th St
W 420th St
E 420th St
W 421st St
E 421st St
W 422nd St
E 422nd St
W 423rd St
E 423rd St
W 424th St
E 424th St
W 425th St
E 425th St
W 426th St
E 426th St
W 427th St
E 427th St
W 428th St
E 428th St
W 429th St
E 429th St
W 430th St
E 430th St
W 431st St
E 431st St
W 432nd St
E 432nd St
W 433rd St
E 433rd St
W 434th St
E 434th St
W 435th St
E 435th St
W 436th St
E 436th St
W 437th St
E 437th St
W 438th St
E 438th St
W 439th St
E 439th St
W 440th St
E 440th St
W 441st St
E 441st St
W 442nd St
E 442nd St
W 443rd St
E 443rd St
W 444th St
E 444th St
W 445th St
E 445th St
W 446th St
E 446th St
W 447th St
E 447th St
W 448th St
E 448th St
W 449th St
E 449th St
W 450th St
E 450th St
W 451st St
E 451st St
W 452nd St
E 452nd St
W 453rd St
E 453rd St
W 454th St
E 454th St
W 455th St
E 455th St
W 456th St
E 456th St
W 457th St
E 457th St
W 458th St
E 458th St
W 459th St
E 459th St
W 460th St
E 460th St
W 461st St
E 461st St
W 462nd St
E 462nd St
W 463rd St
E 463rd St
W 464th St
E 464th St
W 465th St
E 465th St
W 466th St
E 466th St
W 467th St
E 467th St
W 468th St
E 468th St
W 469th St
E 469th St
W 470th St
E 470th St
W 471st St
E 471st St
W 472nd St
E 472nd St
W 473rd St
E 473rd St
W 474th St
E 474th St
W 475th St
E 475th St
W 476th St
E 476th St
W 477th St
E 477th St
W 478th St
E 478th St
W 479th St
E 479th St
W 480th St
E 480th St
W 481st St
E 481st St
W 482nd St
E 482nd St
W 483rd St
E 483rd St
W 484th St
E 484th St
W 485th St
E 485th St
W 486th St
E 486th St
W 487th St
E 487th St
W 488th St
E 488th St
W 489th St
E 489th St
W 490th St
E 490th St
W 491st St
E 491st St
W 492nd St
E 492nd St
W 493rd St
E 493rd St
W 494th St
E 494th St
W 495th St
E 495th St
W 496th St
E 496th St
W 497th St
E 497th St
W 498th St
E 498th St
W 499th St
E 499th St
W 500th St
E 500th St
W 501st St
E 501st St
W 502nd St
E 502nd St
W 503rd St
E 503rd St
W 504th St
E 504th St
W 505th St
E 505th St
W 506th St
E 506th St
W 507th St
E 507th St
W 508th St
E 508th St
W 509th St
E 509th St
W 510th St
E 510th St
W 511th St
E 511th St
W 512th St
E 512th St
W 513th St
E 513th St
W 514th St
E 514th St
W 515th St
E 515th St
W 516th St
E 516th St
W 517th St
E 517th St
W 518th St
E 518th St
W 519th St
E 519th St
W 520th St
E 520th St
W 521st St
E 521st St
W 522nd St
E 522nd St
W 523rd St
E 523rd St
W 524th St
E 524th St
W 525th St
E 525th St
W 526th St
E 526th St
W 527th St
E 527th St
W 528th St
E 528th St
W 529th St
E 529th St
W 530th St
E 530th St
W 531st St
E 531st St
W 532nd St
E 532nd St
W 533rd St
E 533rd St
W 534th St
E 534th St
W 535th St
E 535th St
W 536th St
E 536th St
W 537th St
E 537th St
W 538th St
E 538th St
W 539th St
E 539th St
W 540th St
E 540th St
W 541st St
E 541st St
W 542nd St
E 542nd St
W 543rd St
E 543rd St
W 544th St
E 544th St
W 545th St
E 545th St
W 546th St
E 546th St
W 547th St
E 547th St
W 548th St
E 548th St
W 549th St
E 549th St
W 550th St
E 550th St
W 551st St
E 551st St
W 552nd St
E 552nd St
W 553rd St
E 553rd St
W 554th St
E 554th St
W 555th St
E 555th St
W 556th St
E 556th St
W 557th St
E 557th St
W 558th St
E 558th St
W 559th St
E 559th St
W 560th St
E 560th St
W 561st St
E 561st St
W 562nd St
E 562nd St
W 563rd St
E 563rd St
W 564th St
E 564th St
W 565th St
E 565th St
W 566th St
E 566th St
W 567th St
E 567th St
W 568th St
E 568th St
W 569th St
E 569th St
W 570th St
E 570th St
W 571st St
E 571st St
W 572nd St
E 572nd St
W 573rd St
E 573rd St
W 574th St
E 574th St
W 575th St
E 575th St
W 576th St
E 576th St
W 577th St
E 577th St
W 578th St
E 578th St
W 579th St
E 579th St
W 580th St
E 580th St
W 581st St
E 581st St
W 582nd St
E 582nd St
W 583rd St
E 583rd St
W 584th St
E 584th St
W 585th St
E 585th St
W 586th St
E 586th St
W 587th St
E 587th St
W 588th St
E 588th St
W 589th St
E 589th St
W 590th St
E 590th St
W 591st St
E 591st St
W 592nd St
E 592nd St
W 593rd St
E 593rd St
W 594th St
E 594th St
W 595th St
E 595th St
W 596th St
E 596th St
W 597th St
E 597th St
W 598th St
E 598th St
W 599th St
E 599th St
W 600th St
E 600th St
W 601st St
E 601st St
W 602nd St
E 602nd St
W 603rd St
E 603rd St
W 604th St
E 604th St
W 605th St
E 605th St
W 606th St
E 606th St
W 607th St
E 607th St
W 608th St
E 608th St
W 609th St
E 609th St
W 610th St
E 610th St
W 611th St
E 611th St
W 612th St
E 612th St
W 613th St
E 613th St
W 614th St
E 614th St
W 615th St
E 615th St
W 616th St
E 616th St
W 617th St
E 617th St
W 618th St
E 618th St
W 619th St
E 619th St
W 620th St
E 620th St
W 621st St
E 621st St
W 622nd St
E 622nd St
W 623rd St
E 623rd St
W 624th St
E 624th St
W 625th St
E 625th St
W 626th St
E 626th St
W 627th St
E 627th St
W 628th St
E 628th St
W 629th St
E 629th St
W 630th St
E 630th St
W 631st St
E 631st St
W 632nd St
E 632nd St
W 633rd St
E 633rd St
W 634th St
E 634th St
W 635th St
E 635th St
W 636th St
E 636th St
W 637th St
E 637th St
W 638th St
E 638th St
W 639th St
E 639th St
W 640th St
E 640th St
W 641st St
E 641st St
W 642nd St
E 642nd St
W 643rd St
E 643rd St
W 644th St
E 644th St
W 645th St
E 645th St
W 646th St
E 646th St
W 647th St
E 647th St
W 648th St
E 648th St
W 649th St
E 649th St
W 650th St
E 650th St
W 651st St
E 651st St
W 652nd St
E 652nd St
W 653rd St
E 653rd St
W 654th St
E 654th St
W 655th St
E 655th St
W 656th St
E 656th St
W 657th St
E 657th St
W 658th St
E 658th St
W 659th St
E 659th St
W 660th St
E 660th St
W 661st St
E 661st St
W 662nd St
E 662nd St
W 663rd St
E 663rd St
W 664th St
E 664th St
W 665th St
E 665th St
W 666th St
E 666th St
W 667th St
E 667th St
W 668th St
E 668th St
W 669th St
E 669th St
W 670th St
E 670th St
W 671st St
E 671st St
W 672nd St
E 672nd St
W 673rd St
E 673rd St
W 674th St
E 674th St
W 675th St
E 675th St
W 676th St
E 676th St
W 677th St
E 677th St
W 678th St
E 678th St
W 679th St
E 679th St
W 680th St
E 680th St
W 681st St
E 681st St
W 682nd St
E 682nd St
W 683rd St
E 683rd St
W 684th St
E 684th St
W 685th St
E 685th St
W 686th St
E 686th St
W 687th St
E 687th St
W 688th St
E 688th St
W 689th St
E 689th St
W 690th St
E 690th St
W 691st St
E 691st St
W 692nd St
E 692nd St
W 693rd St
E 693rd St
W 694th St
E 694th St
W 695th St
E 695th St
W 696th St
E 696th St
W 697th St
E 697th St
W 698th St
E 698th St
W 699th St
E 699th St
W 700th St
E 700th St
W 701st St
E 701st St
W 702nd St
E 702nd St
W 703rd St
E 703rd St
W 704th St
E 704th St
W 705th St
E 705th St
W 706th St
E 706th St
W 707th St
E 707th St
W 708th St
E 708th St
W 709th St
E 709th St
W 710th St
E 710th St
W 711th St
E 711th St
W 712th St
E 712th St
W 713th St
E 713th St
W 714th St
E 714th St
W 715th St
E 715th St
W 716th St
E 716th St
W 717th St
E 717th St
W 718th St
E 718th St
W 719th St
E 719th St
W 720th St
E 720th St
W 721st St
E 721st St
W 722nd St
E 722nd St
W 723rd St
E 723rd St
W 724th St
E 724th St
W 725th St
E 725th St
W 726th St
E 726th St
W 727th St
E 727th St
W 728th St
E 728th St
W 729th St
E 729th St
W 730th St
E 730th St
W 731st St
E 731st St
W 732nd St
E 732nd St
W 733rd St
E 733rd St
W 734th St
E 734th St
W 735th St
E 735th St
W 736th St
E 736th St
W 737th St
E 737th St
W 738th St
E 738th St
W 739th St
E 739th St
W 740th St
E 740th St
W 741st St
E 741st St
W 742nd St
E 742nd St
W 743rd St
E 743rd St
W 744th St
E 744th St
W 745th St
E 745th St
W 746th St
E 746th St
W 747th St
E 747th St
W 748th St
E 748th St
W 749th St
E 749th St
W 750th St
E 750th St
W 751st St
E 751st St
W 752nd St
E 752nd St
W 753rd St
E 753rd St
W 754th St
E 754th St
W 755th St
E 755th St
W 756th St
E 756th St
W 757th St
E 757th St
W 758th St
E 758th St
W 759th St
E 759th St
W 760th St
E 760th St
W 761st St
E 761st St
W 762nd St
E 762nd St
W 763rd St
E 763rd St
W 764th St
E 764th St
W 765th St
E 765th St
W 766th St
E 766th St
W 767th St
E 767th St
W 768th St
E 768th St
W 769th St
E 769th St
W 770th St
E 770th St
W 771st St
E 771st St
W 772nd St
E 772nd St
W 773rd St
E 773rd St
W 774th St
E 774th St
W 775th St
E 775th St
W 776th St
E 776th St
W 777th St
E 777th St
W 778th St
E 778th St
W 779th St
E 779th St
W 780th St
E 780th St
W 781st St
E 781st St
W 782nd St
E 782nd St
W 783rd St
E 783rd St
W 784th St
E 784th St
W 785th St
E 785th St
W 786th St
E 786th St
W 787th St
E 787th St
W 788th St
E 788th St
W 789th St
E 789th St
W 790th St
E 790th St
W 791st St
E 791st St
W 792nd St
E 792nd St
W 793rd St
E 793rd St
W 794th St
E 794th St
W 795th St
E 795th St
W 796th St
E 796th St
W 797th St
E 797th St
W 798th St
E 798th St
W 799th St
E 799th St
W 800th St
E 800th St
W 801st St
E 801st St
W 802nd St
E 802nd St
W 803rd St
E 803rd St
W 804th St
E 804th St
W 805th St
E 805th St
W 806th St
E 806th St
W 807th St
E 807th St
W 808th St
E 808th St
W 809th St
E 809th St
W 810th St
E 810th St
W 811th St
E 811th St
W 812th St
E 812th St
W 813th St
E 813th St
W 814th St
E 814th St
W 815th St
E 815th St
W 816th St
E 816th St
W 817th St
E 817th St
W 818th St
E 818th St
W 819th St
E 819th St
W 820th St
E 820th St
W 821st St
E 821st St
W 822nd St
E 822nd St
W 823rd St
E 823rd St
W 824th St
E 824th St
W 825th St
E 825th St
W 826th St
E 826th St
W 827th St
E 827th St
W 828th St
E 828th St
W 829th St
E 829th St
W 830th St
E 830th St
W 831st St
E 831st St
W 832nd St
E 832nd St
W 833rd St
E 833rd St
W 834th St
E 834th St
W 835th St
E 835th St
W 836th St
E 836th St
W 837th St
E 837th St
W 838th St
E 838th St
W 839th St
E 839th St
W 840th St
E 840th St
W 841st St
E 841st St
W 842nd St
E 842nd St
W 843rd St
E 843rd St
W 844th St
E 844th St
W 845th St
E 845th St
W 846th St
E 846th St
W 847th St
E 847th St
W 848th St
E 848th St
W 849th St
E 849th St
W 850th St
E 850th St
W 851st St
E 851st St
W 852nd St
E 852nd St
W 853rd St
E 853rd St
W 854th St
E 854th St
W 855th St
E 855th St
W 856th St
E 856th St
W 857th St
E 857th St
W 858th St
E 858th St
W 859th St
E 859th St
W 860th St
E 860th St
W 861st St
E 861st St
W 862nd St
E 862nd St
W 863rd St
E 863rd St
W 864th St
E 864th St
W 865th St
E 865th St
W 866th St
E 866th St
W 867th St
E 867th St
W 868th St
E 868th St
W 869th St
E 869th St
W 870th St
E 870th St
W 871st St
E 871st St
W 872nd St
E 872nd St
W 873rd St
E 873rd St
W 874th St
E 874th St
W 875th St
E 875th St
W 876th St
E 876th St
W 877th St
E 877th St
W 878th St
E 878th St
W 879th St
E 879th St
W 880th St
E 880th St
W 881st St
E 881st St
W 882nd St
E 882nd St
W 883rd St
E 883rd St
W 884th St
E 884th St
W 885th St
E 885th St
W 886th St
E 886th St
W 887th St
E 887th St
W 888th St
E 888th St
W 889th St
E 889th St
W 890th St
E 890th St
W 891st St
E 891st St
W 892nd St
E 892nd St
W 893rd St
E 893rd St
W 894th St
E 894th St
W 895th St
E 895th St
W 896th St
E 896th St
W 897th St
E 897th St
W 898th St
E 898th St
W 899th St
E 899th St
W 900th St
E 900th St
W 901st St
E 901st St
W 902nd St
E 902nd St
W 903rd St
E 903rd St
W 904th St
E 904th St
W 905th St
E 905th St
W 906th St
E 906th St
W 907th St
E 907th St
W 908th St
E 908th St
W 909th St
E 909th St
W 910th St
E 910th St
W 911th St
E 911th St
W 912th St
E 912th St
W 913th St
E 913th St
W 914th St
E 914th St
W 915th St
E 915th St
W 916th St
E 916th St
W 917th St
E 917th St
W 918th St
E 918th St
W 919th St
E 919th St
W 920th St
E 920th St
W 921st St
E 921st St
W 922nd St
E 922nd St
W 923rd St
E 923rd St
W 924th St
E 924th St
W 925th St
E 925th St
W 926th St
E 926th St
W 927th St
E 927th St
W 928th St
E 928th St
W 929th St
E 929th St
W 930th St
E 930th St
W 931st St
E 931st St
W 932nd St
E 932nd St
W 933rd St
E 933rd St
W 934th St
E 934th St
W 935th St
E 935th St
W 936th St
E 936th St
W 937th St
E 937th St
W 938th St
E 938th St
W 939th St
E 939th St
W 940th St
E 940th St
W 941st St
E 941st St
W 942nd St
E 942nd St
W 943rd St
E 943rd St
W 944th St
E 944th St
W 945th St
E 945th St
W 946th St
E 946th St
W 947th St
E 947th St
W 948th St
E 948th St
W 949th St
E 949th St
W 950th St
E 950th St
W 951st St
E 951st St
W 952nd St
E 952nd St
W 953rd St
E 953rd St
W 954th St
E 954th St
W 955th St
E 955th St
W 956th St
E 956th St
W 957th St
E 957th St
W 958th St
E 958th St
W 959th St
E 959th St
W 960th St
E 960th St
W 961st St
E 961st St
W 962nd St
E 962nd St
W 963rd St
E 963rd St
W 964th St
E 964th St
W 965th St
E 965th St
W 966th St
E 966th St
W 967th St
E 967th St
W 968th St
E 968th St
W 969th St
E 969th St
W 970th St
E 970th St
W 971st St
E 971st St
W 972nd St
E 972nd St
W 973rd St
E 973rd St
W 974th St
E 974th St
W 975th St
E 975th St
W 976th St
E 976th St
W 977th St
E 977th St
W 978th St
E 978th St
W 979th St
E 979th St
W 980th St
E 980th St
W 981st St
E 981st St
W 982nd St
E 982nd St
W 983rd St
E 983rd St
W 984th St
E 984th St
W 985th St
E 985th St
W 986th St
E 986th St
W 987th St
E 987th St
W 988th St
E 988th St
W 989th St
E 989th St
W 990th St
E 990th St
W 991st St
E 991st St
W 992nd St
E 992nd St
W 993rd St
E 993rd St
W 994th St
E 994th St
W 995th St
E 995th St
W 996th St
E 996th St
W 997th St
E 997th St
W 998th St
E 998th St
W 999th St
E 999th St
W 1000th St
E 1000th St

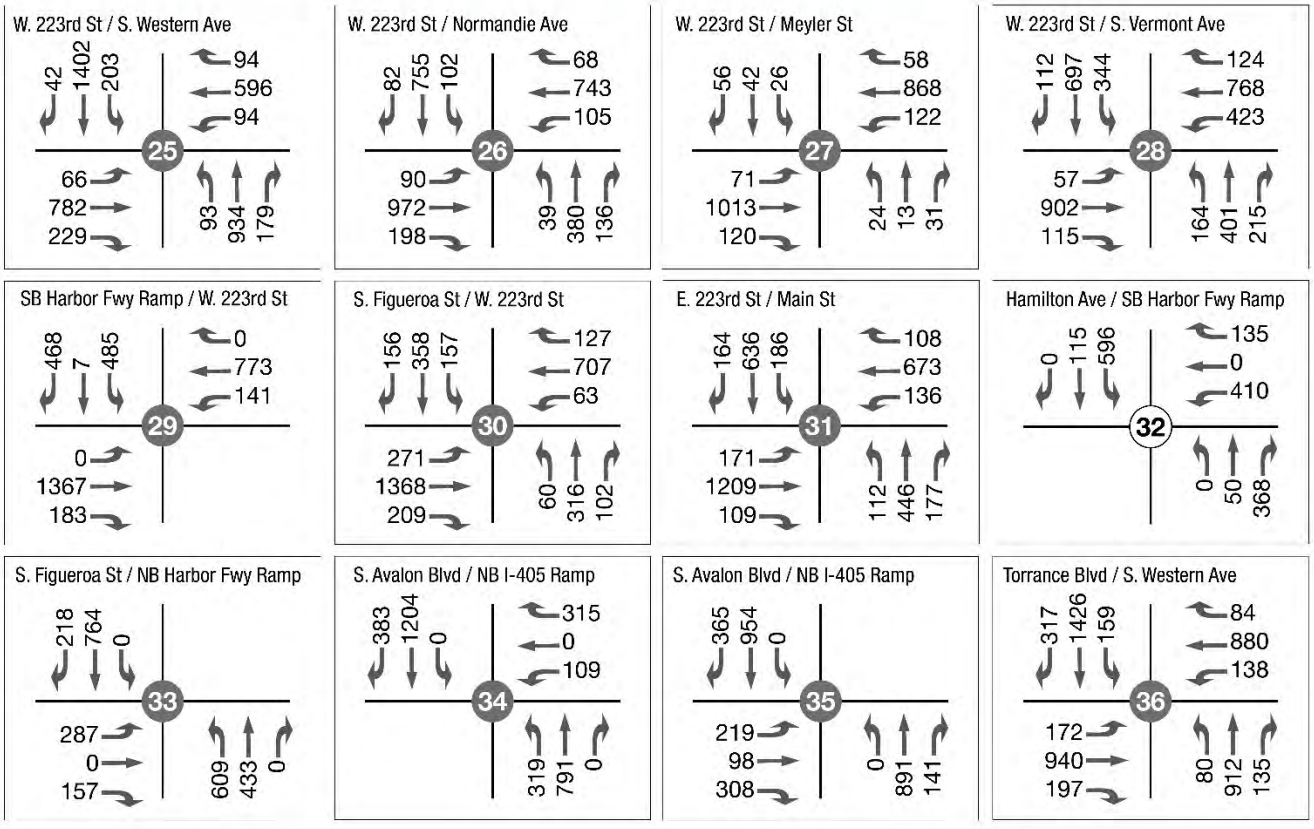

W. 223rd St / S. Western Ave
42 1402 203
94 596 94
66 782 229
93 934 179
25
W. 223rd St / Normandie Ave
82 755 102
68 743 105
90 972 198
39 380 136
26
W. 223rd St / Meyler St
56 42 26
58 868 122
71 1013 120
24 13 31
27
W. 223rd St / S. Vermont Ave
112 697 344
124 768 423
57 902 115
164 401 215
28
SB Harbor Fwy Ramp / W. 223rd St
468 7 485
0 773 141
0 1367 183
29
S. Figueroa St / W. 223rd St
156 358 157
127 707 63
271 1368 209
60 316 102
30
E. 223rd St / Main St
164 636 186
108 673 136
171 1209 109
112 446 177
31
Hamilton Ave / SB Harbor Fwy Ramp
0 115 596
135 0 410
0 50 368
32
S. Figueroa St / NB Harbor Fwy Ramp
218 764 0
287 0 157
609 433 0
33
S. Avalon Blvd / NB I-405 Ramp
383 1204 0
315 0 109
319 791 0
34
S. Avalon Blvd / NB I-405 Ramp
365 954 0
219 98 308
0 891 141
35
Torrance Blvd / S. Western Ave
317 1426 159
84 880 138
172 940 197
80 912 135
36
Legend
Signalized Intersection
Unsignalized Intersection
Lane Geometry
W. 220th St / S. Western Ave
19 1458 29
26 54 32
84 131 166
68 1016 26
37

TABLE 4.4: EXISTING YEAR (2016) NO PROJECT INTERSECTION LOS

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	AM		PM	
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**0.946**	**E**	**0.989**	**E**
		County of Los Angeles	ICU	Signalized	0.786	C	0.850	D
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.782	C	0.770	C
3	Figueroa / Torrance	City of Carson	ICU	Signalized	0.671	B	0.669	B
4	Vermont / Javelin	County of Los Angeles	ICU	Signalized	0.507	A	0.373	A
5	Carson / Cabrillo / Cravens	City of Torrance	HCM	Signalized	16.6	B	18.0	B
6	Western / Carson	City of Torrance	HCM	Signalized	25.0	C	37.4	D
		City of Los Angeles	CMA	Signalized	0.874	D	**0.999**	**E**
		Caltrans	HCM	Signalized	25.0	C	**37.4**	**D**
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	0.870	D	0.900	D
		County of Los Angeles	ICU	Signalized	0.747	C	0.773	C
8	Budlong / Carson	County of Los Angeles	ICU	Signalized	0.450	A	0.388	A
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.456	A	0.427	A
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.758	C	0.702	C
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.724	C	0.665	B
		Caltrans	HCM	Signalized	27.1	C	20.9	C
12	Figueroa / Carson	City of Carson	ICU	Signalized	0.562	A	0.567	A
13	Moneta / Carson	City of Carson	ICU	Signalized	0.319	A	0.291	A
14	Main / Carson	City of Carson	ICU	Signalized	0.378	A	0.501	A
15	Dolores / Carson	City of Carson	ICU	Signalized	0.295	A	0.339	A
16	Grace / Carson	City of Carson	ICU	Signalized	0.281	A	0.346	A
17	Avalon / Carson	City of Carson	ICU	Signalized	0.683	B	0.732	C
18	Bonita / Carson	City of Carson	ICU	Signalized	0.575	A	0.729	C
19	SB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.492	A	0.582	A
		Caltrans	HCM	Signalized	8.6	A	7.1	A
20	NB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.553	A	0.579	A
		Caltrans	HCM	Signalized	12.0	B	12.4	B
21	Normandie / 220th	City of Los Angeles	CMA	Signalized	0.439	A	0.442	A
		County of Los Angeles	ICU	Signalized	0.412	A	0.414	A
22	Meyler / 220th	County of Los Angeles	ICU	AWSC	0.307	A	0.315	A
23	Vermont / 220th	County of Los Angeles	ICU	Signalized	0.428	A	0.498	A
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	0.871	D	0.786	C
		Caltrans	HCM	Signalized	**52.6**	**D**	**46.1**	**D**
25	Western / 223rd	City of Torrance	HCM	Signalized	27.3	C	29.4	C
		City of Los Angeles	CMA	Signalized	0.881	D	**0.930**	**E**
		Caltrans	HCM	Signalized	27.3	C	29.4	C
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.729	C	0.699	B
		County of Los Angeles	ICU	Signalized	0.683	B	0.655	B
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.593	A	0.523	A
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.845	D	0.769	C
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.748	C	0.818	D
		Caltrans	HCM	Signalized	18.6	B	28.4	C
30	Figueroa / 223rd	City of Carson	ICU	Signalized	0.690	B	0.664	B
31	Main / 223rd	City of Carson	ICU	Signalized	0.645	B	0.732	C
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.032**	**F**	**1.115**	**F**
		Caltrans	HCM	AWSC	**49.9**	**E**	**128.4**	**F**
33	Figueroa / NB I-110 Ramps	City of Carson	ICU	Signalized	0.617	B	0.615	B
		Caltrans	HCM	Signalized	26.5	C	20.9	C
34	Avalon / NB I-405	City of Carson	ICU	Signalized	0.301	A	0.410	A
		Caltrans	HCM	Signalized	15.9	B	15.1	B
35	Avalon / SB I-405	City of Carson	ICU	Signalized	0.460	A	0.408	A
		Caltrans	HCM	Signalized	11.8	B	10.3	B
36	Western / Torrance	City of Torrance	HCM	Signalized	40.9	D	34.1	C
		City of Los Angeles	CMA	Signalized	0.88	D	0.823	D
		Caltrans	HCM	Signalized	**40.9**	**D**	34.1	C
37	Western / 220th	City of Torrance	HCM	Signalized	7.2	A	14.6	B
		City of Los Angeles	CMA	Signalized	0.591	A	0.807	D
		Caltrans	HCM	Signalized	7.2	A	14.6	B

AWSC = All Way Stop Control. **Bold and shaded** = Intersection operates at an unacceptable LOS using the methodology listed.

4.6 CMP MONITORING STATION ANALYSIS

The CMP monitoring station analysis results for the AM and PM peak hours are summarized in Table 4.5 and Table 4.6, respectively. The analysis was performed in accordance with the methodology outlined in Section 3.4.1. An unacceptable LOS (LOS F) is observed at the following locations:

- I-405 at Santa Fe Avenue
- I-405 north of Inglewood Avenue

4.7 FREEWAY MAINLINE ANALYSIS

The freeway mainline analysis results for the AM and PM peak hours are summarized in Table 4.7 and Table 4.8, respectively. The analysis was conducted using the methodology and settings outlined in Section 3.4.2. All freeway segments operate at an unacceptable level of service (LOS D or worse) with the exception of:

- SR-91 at Avalon Boulevard
- I-110 at SR-1 (Pacific Coast Highway)

4.8 FREEWAY OFF-RAMP QUEUE ANALYSIS

Per Caltrans traffic study guidelines, a queue analysis for freeway off-ramps at intersections of interest is provided. Table 4.9 summarizes the storage capacities and queue lengths expected for these off-ramps. All freeway off-ramps provide sufficient storage capacity such that the 85% storage capacity is not exceeded by expected queues. The off-ramps evaluated in Existing Year (2016) scenarios are listed below:

- Southbound I-110 Off-Ramp at Carson Street
- Southbound I-405 Off-Ramp at Carson Street
- Northbound I-405 Off-Ramp at Carson Street
- Northbound I-110 Off-Ramp/220th Street at Figueroa Street
- Southbound I-110 Off-Ramp at 223rd Street
- Southbound I-110 Off-Ramp at Hamilton Avenue
- Northbound I-110 Off-Ramp at Figueroa Street
- Northbound I-405 Off-Ramp at Avalon Boulevard
- Southbound I-405 Off-Ramp at Avalon Boulevard

4.9 VEHICLE MILES TRAVELED (VMT) ANALYSIS

VMT calculations were prepared based on the land use characteristics in the Existing Year (2016) No Project scenario using the land use zoning outlined in Section 2.2. A summary of the results for this scenario is presented in Table 4.10.

TABLE 4.5: EXISTING YEAR (2016) NO PROJECT CMP MONITORING STATION ANALYSIS – AM PEAK HOUR

ID	Freeway	Segment	Station	Direction	Lanes	Capacity	Existing Year (2016) No Project		
							Peak Hour Volume	V/C	LOS
1	I-110	at Wilmington Boulevard s/o C Street	1045	NB	4	8,000	4,348	0.544	C
				SB	4	8,000	3,176	0.397	B
2	I-110	at Manchester Boulevard	1046	NB	6	12,000	8,479	0.707	C
				SB	6	12,000	10,330	0.861	D
3	I-405	at Santa Fe Avenue	1066	NB	5	10,000	10,365	**1.037**	**F(0)**
				SB	5	10,000	12,090	**1.209**	**F(0)**
4	I-405	south of I-110	1067	NB	5	10,000	9,065	0.907	D
				SB	5	10,000	7,438	0.744	C
5	I-405	north of Inglewood Avenue	1068	NB	5	10,000	8,075	0.808	D
				SB	5	10,000	10,608	**1.061**	**F(0)**
6	SR-91	east of Alameda Street/Santa Fe Avenue	1033	EB	6	12,000	7,978	0.665	C
				WB	6	12,000	5,800	0.483	B

Bold and shaded = Unacceptable evel of service (LOS F).

TABLE 4.6: EXISTING YEAR (2016) NO PROJECT CMP MONITORING STATION ANALYSIS – PM PEAK HOUR

ID	Freeway	Segment	Station	Direction	Lanes	Capacity	Existing Year (2016) No Project		
							Peak Hour Volume	V/C	LOS
1	I-110	at Wilmington Boulevard s/o C Street	1045	NB	4	8,000	2,921	0.365	B
				SB	4	8,000	4,436	0.555	C
2	I-110	at Manchester Boulevard	1046	NB	6	12,000	9,321	0.777	D
				SB	6	12,000	11,375	0.948	E
3	I-405	at Santa Fe Avenue	1066	NB	5	10,000	9,313	0.931	E
				SB	5	10,000	15,074	**1.507**	**F(3)**
4	I-405	south of I-110	1067	NB	5	10,000	8,250	0.825	D
				SB	5	10,000	9,408	0.941	E
5	I-405	north of Inglewood Avenue	1068	NB	5	10,000	10,015	**1.002**	**F(0)**
				SB	5	10,000	10,390	**1.039**	**F(0)**
6	SR-91	east of Alameda Street/Santa Fe Avenue	1033	EB	6	12,000	7,618	0.635	C
				WB	6	12,000	6,138	0.512	B

Bold and shaded = Unacceptable evel of service (LOS F).

TABLE 4.7: EXISTING YEAR (2016) NO PROJECT FREEWAY MAINLINE ANALYSIS SUMMARY – AM PEAK HOUR

ID	Freeway	Location	Direction	Density (pc/mi/ln)	LOS
1	SR-91	at Avalon Boulevard	EB	14.1	B
			WB	23.9	C
2	I-110	at SR-1 (Pacific Coast Highway)	NB	24.4	C
			SB	17.3	B
3	I-110	at Sepulveda Boulevard	NB	**30.7**	**D**
			SB	20.7	C
4	I-110	at El Segundo Boulevard	NB	23.6	C
			SB	**30.3**	**D**
5	I-405	at I-710	NB	**45.7**	**F**
			SB	**37.9**	**E**
6	I-405	south of I-110 (Carson Scales)	NB	25	C
			SB	19.8	C
7	I-405	at Western Avenue	NB	**26.2**	**D**
			SB	**27.5**	**D**

Bold and shaded = Unacceptable evel of service (LOS D or w orse). Pc/mi/ln = passenger-car per mile per lane.

TABLE 4.8: EXISTING YEAR (2016) NO PROJECT FREEWAY MAINLINE ANALYSIS SUMMARY – PM PEAK HOUR

ID	Freeway	Location	Direction	Density (pc/mi/ln)	LOS
1	SR-91	at Avalon Boulevard	EB	21.1	C
			WB	16.5	B
2	I-110	at SR-1 (Pacific Coast Highway)	NB	16.1	B
			SB	24.1	C
3	I-110	at Sepulveda Boulevard	NB	19.5	C
			SB	29.0	C
4	I-110	at El Segundo Boulevard	NB	22.8	C
			SB	**29.7**	**D**
5	I-405	at I-710	NB	**35.9**	**E**
			SB	**70.9**	**F**
6	I-405	south of I-110 (Carson Scales)	NB	22.3	C
			SB	**26.2**	**D**
7	I-405	at Western Avenue	NB	**28.1**	**D**
			SB	**31.9**	**D**

Bold and shaded = Unacceptable evel of service (LOS D or w orse). Pc/mi/ln = passenger-car per mile per lane.

TABLE 4.9: EXISTING YEAR (2016) NO PROJECT QUEUE ANALYSIS

ID	Ramp	Cross Street	Ramp Length (ft) [a]	85% Ramp Length (ft)	Ramp Turn Lanes at Intersection			AM Queue		PM Queue		Queue Exceeds 85% Storage?	
					Lanes	Movement	Length [a]	Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	AM	PM
11	I-110 Southbound Off-Ramp	Carson Street	980	830	2	Left	980	60	483	99	320	No	No
						Right	380	483		320			
19	I-405 Southbound Off-Ramp	Carson Street	1,100	940	2	Left	660	41	41	28	28	No	No
						Right	1,100	41		19			
20	I-405 Northbound Off-Ramp	Carson Street	1,200	1,020	2	Through/Left	1,200	26	118	30	128	No	No
						Right	620	118		128			
24	I-110 Northbound Off-Ramp	Figueroa Street	1,150	980	2	Through/Left	1,150	397	397	408	408	No	No
						Right	530	0		14			
29	I-110 Southbound Off-Ramp	223rd Street	935	800	2	Through/Left	935	229	229	358	358	No	No
						Right/Through	405	229		358			
32	I-110 Southbound Off-Ramp	Hamilton Avenue	890	760	3	Left	890	325	325	68	68	No	No
						Left	355	325		68			
						Right	40	40		20			
33	I-110 Northbound Off-Ramp	Figueroa Street	880	750	2	Left	880	403	403	158	158	No	No
						Right/Left	340	206		70			
34	I-405 Northbound Off-Ramp	Avalon Boulevard	980	830	3	Left	980	26	219	41	133	No	No
						Through/Left	320	26		41			
						Right	320	219		133			
35	I-405 Southbound Off-Ramp	Avalon Boulevard	390	330	5	Left	390	66	207	43	127	No	No
						Left	390	66		43			
						Through	390	3		23			
						Through	390	3		23			
						Right	240	207		127			

[a] = Length measured from scaled aerial images.

TABLE 4.10: EXISTING YEAR (2016) NO PROJECT VMT SUMMARY

Land Use	Average Daily Trip Rate			Annual VMT	Population / Employees	Annual VMT Per Capita
	Weekday	Saturday	Sunday			
Apartments (Mid-Rise)	2,287.60	2,198.16	2,015.84	**7,640,752**	**955**	**8,001**
General Light Industry	1,314.26	248.90	128.22	**4,395,658**	**182**	**24,152**
General Office Building	807.62	180.12	76.88	**1,976,636**	**151**	**13,090**
Hospital	10,747.33	8,275.93	7,243.47	**38,356,399**	**5,637**	**6,804**
Single Family Housing	9,129.68	9,503.69	8,266.58	**30,958,747**	**2,924**	**10,588**
Strip Mall	14,589.70	13,839.15	6,725.35	**25,416,771**	**394**	**64,510**
Unrefrigerated Warehouse - No Rail	502.44	502.44	502.44	**2,153,305**	**279**	**7,718**
Total	**39,378.63**	**34,748.39**	**24,958.78**	**110,898,268**	**10,522**	**134,863**

5 FUTURE YEAR (2035) NO PROJECT

This section presents the ADT, peak hour link analysis, queue analysis, and intersection LOS analysis for the Future Year (20135) No Project scenario. Future Year (2035) No Project traffic is derived from the application of a forecasted growth rate of 0.6284% to each year from Existing Year (2016) No Project scenario. The growth rate is based on existing land uses within the project study area plus cumulative projects and ambient area-wide traffic growth. The cumulative projects and ambient area-wide traffic growth are based on the Southern California Association of Governments (SCAG) regional model. Additionally, the SCAG Year 2035 traffic forecasts assume implementation of projects consistent with the Year 2035 Preferred Plan from SCAG's 2012 Regional Transportation Plan (RTP). This scenario will serve as a base for comparison in order to establish impacts for the Future Year (2035) With Project scenario for intersections under City of Los Angeles, Carson, Torrance, and Caltrans control. Associated lane geometries and controls are consistent with the Existing Year (2016) No Project intersection geometries and controls.

5.1 AVERAGE DAILY TRAFFIC

The average daily traffic for selected links generated in the Future Year (2035) No Project scenario are presented in Table 5.1 below:

TABLE 5.1: FUTURE YEAR (2035) NO PROJECT ROADWAY SEGMENT SUMMARY

ID	Segment	ADT
1	Carson Street west of Berendo Avenue	35,233
2	Carson Street east of Vermont Avenue	41,473
3	Carson Street east of Figueroa Street	21,781
4	Carson Street west of Normandie Avenue	38,591
5	Normandie Avenue north of Carson Street	20,470
6	Normandie Avenue south of Carson Street	22,095
7	Vermont Avenue south of Javelin Street	19,520
8	Vermont Avenue south of Carson Street	23,824
9	Vermont Avenue south of 223rd Street	24,559
10	Figueroa Street south of Carson Street	23,964

5.2 PEAK HOUR LINK LEVEL OF SERVICE

AM and PM peak hour link analyses are presented in Table 5.2 and 5.3, respectively. The peak hour link volumes are derived from the turning movement volumes; more specifically, the arriving and departing volumes between two intersections that the link of interest joins. In the event that the departures of one intersection did not equal the arrivals of the second intersection, an average of the two volumes was taken to be the link volume experienced. A loss, or even gain, in volumes between two intersections is not uncommon, especially in situations where additional intersections or driveways are present between the intersections of interest. The following links are expected to be operate at LOS E or worse:

- Carson Street from Budlong Avenue to Berendo Avenue
- Carson Street from Vermont Avenue to I-110 SB Ramp
- Carson Street Western Avenue to Normandie Avenue
- Normandie Avenue from Carson Street to 220th Street

TABLE 5.2: FUTURE YEAR (2035) NO PROJECT AM PEAK HOUR LINK ANALYSIS

Link ID	Street	Segment		Class	Capacity per Lane	Number of Lanes		Volumes		V/C Ratio		Level of Service	
		From	To			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	Carson Street	Budlong Ave	Berendo Ave	Major	750	2	2	887	1526	0.59	**1.02**	A	**F**
2	Carson Street	Vermont Ave	I-110 SB Ramp	Major	750	3	2	1017	1855	0.45	**1.24**	A	**F**
3	Carson Street	Figueroa St	Moneta Ave	Major	750	2	2	638	825	0.43	0.55	A	A
4	Carson Street	Western Ave	Normandie Ave	Major	750	2	2	1090	1513	0.73	**1.01**	C	**F**
5	Normandie Avenue	Torrance Blvd	Carson St	Secondary	600	2	2	1042	652	0.87	0.54	D	A
6	Normandie Avenue	Carson St	220th St	Secondary	600	2	2	1053	715	0.88	0.60	D	A
7	Vermont Avenue	Javelin St	Carson St	Major	750	2	2	1125	892	0.75	0.59	C	A
8	Vermont Avenue	Carson St	220th St	Major	750	2	2	1212	1089	0.81	0.73	D	C
9	Vermont Avenue	220th St	223rd St	Major	750	2	2	1302	736	0.87	0.49	D	A
10	Figueroa Street	Carson St	220th St	Major	750	2	2	1078	986	0.72	0.66	C	B

Bold and shaded = Unacceptable LOS.

TABLE 5.3: FUTURE YEAR (2035) NO PROJECT PM PEAK HOUR LINK ANALYSIS

Link ID	Street	Segment		Class	Capacity per Lane	Number of Lanes		Volumes		V/C Ratio		Level of Service	
		From	To			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	Carson Street	Budlong Ave	Berendo Ave	Major	750	2	2	1346	1280	0.90	0.85	D	D
2	Carson Street	Vermont Ave	I-110 SB Ramp	Major	750	3	2	1489	1371	0.66	**0.91**	B	**E**
3	Carson Street	Figueroa St	Moneta Ave	Major	750	2	2	804	726	0.54	0.48	A	A
4	Carson Street	Western Ave	Normandie Ave	Major	750	2	2	1573	1293	**1.05**	0.86	**F**	D
5	Normandie Avenue	Torrance Blvd	Carson St	Secondary	600	2	2	811	1041	0.68	0.87	B	D
6	Normandie Avenue	Carson St	220th St	Secondary	600	2	2	736	1107	0.61	**0.92**	B	**E**
7	Vermont Avenue	Javelin St	Carson St	Major	750	2	2	765	1187	0.51	0.79	A	C
8	Vermont Avenue	Carson St	220th St	Major	750	2	2	860	1196	0.57	0.80	A	C
9	Vermont Avenue	220th St	223rd St	Major	750	2	2	653	1350	0.44	0.90	A	D
10	Figueroa Street	Carson St	220th St	Major	750	2	2	610	1247	0.41	0.83	A	D

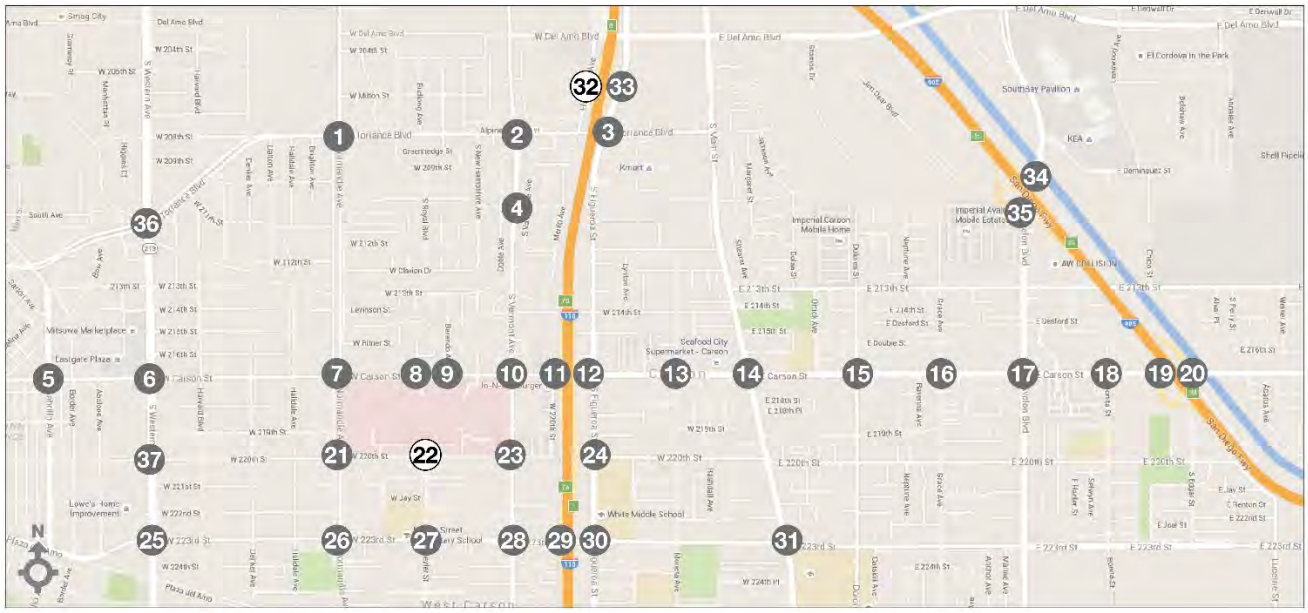
Bold and shaded = Unacceptable LOS.

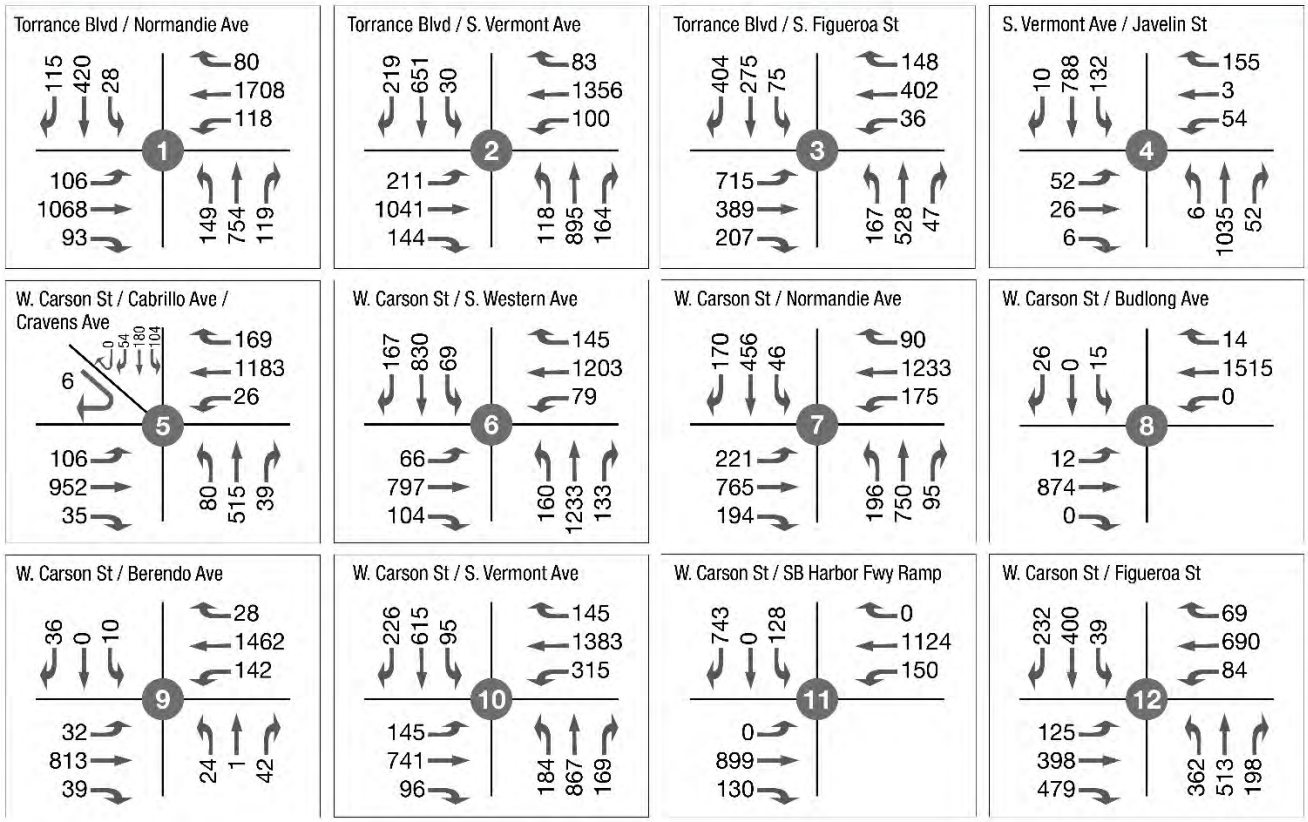
5.3 INTERSECTION LEVEL OF SERVICE

The peak hour turning movement volumes presented in Figure 5.1 and 5.2 were utilized in order to assess intersection performance. Intersection performance was determined using the methods outlined in Section 3. A summary of the AM and PM peak hour intersection level of service analysis results for the Future Year (2035) No Project condition is presented in Table 5.4. The following intersections are expected to operate at an unacceptable level of service:

- Normandie Avenue and Torrance Boulevard
- Western Avenue and Carson Street
- Normandie Avenue and Carson Street
- SB I-110 Ramps and Carson Street
- Figueroa Street and 220th Street/NB I-110 Ramps
- Western Avenue and 223rd Street
- SB I-110 Ramps and 223rd Street
- Hamilton Avenue and SB I-110 Ramps
- Western Avenue and Torrance Boulevard
- Western Avenue and 220th Street

FIGURE 5.1: FUTURE YEAR (2035) NO PROJECT TURNING MOVEMENT VOLUMES – AM PEAK HOUR



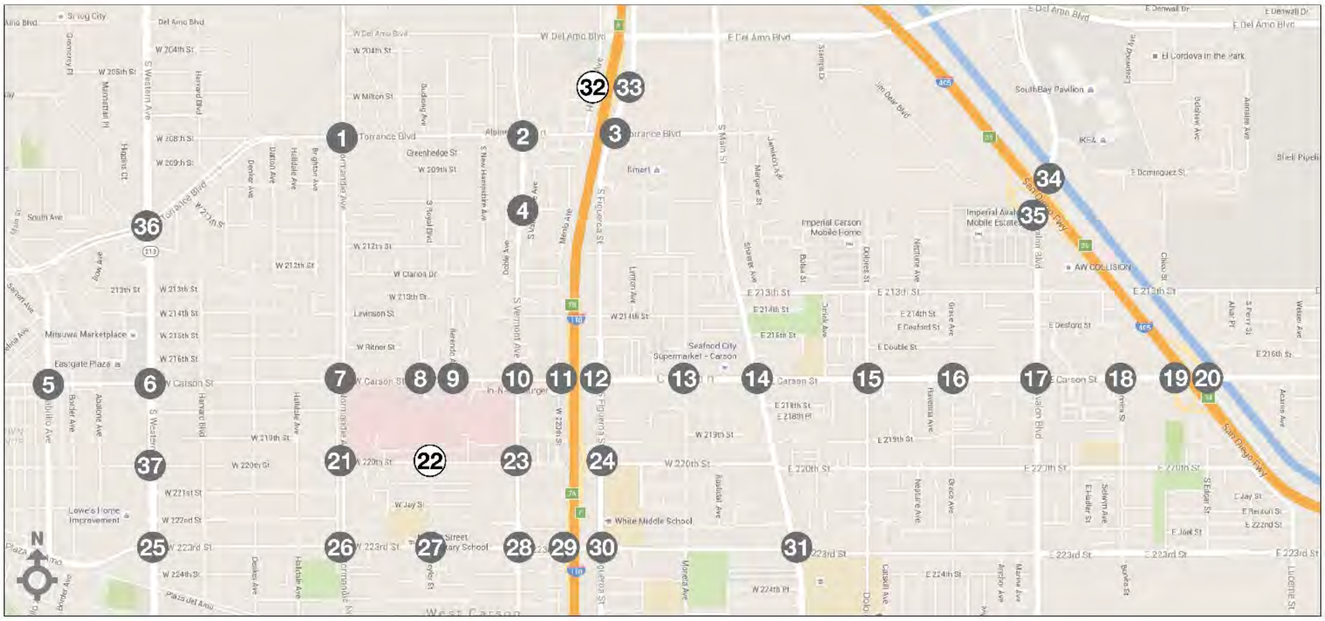


Legend

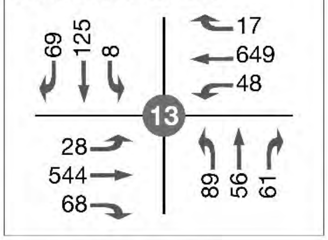
Signalized Intersection

Unsignalized Intersection

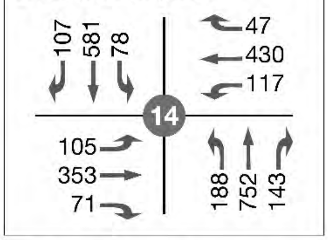
Lane Geometry



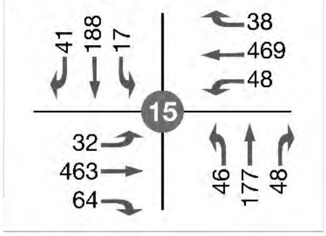
W. Carson St / Moneta Ave



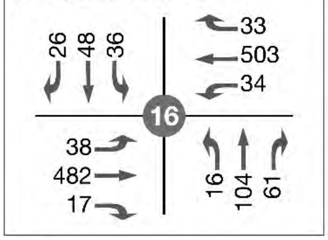
E. Carson St / S. Main St



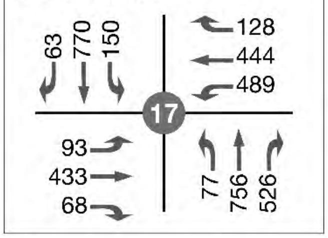
E. Carson St / Delores St



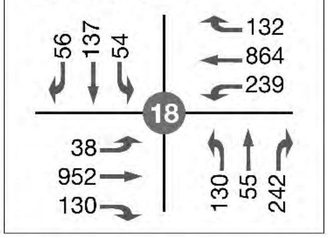
E. Carson St / Grace Ave



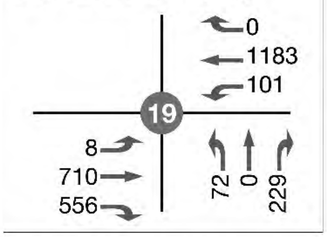
E. Carson St / Avalon Blvd



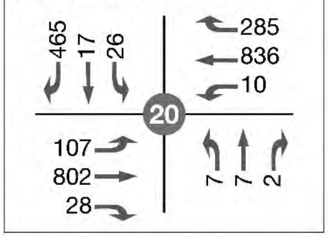
E. Carson St / Bonita St



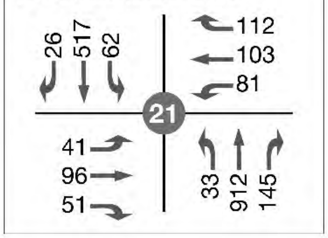
E. Carson St / I-405Ramp (SB)



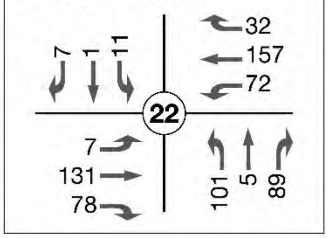
E. Carson St / Recreation Rd



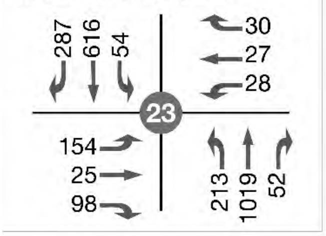
W. 220th St / Normandie Ave



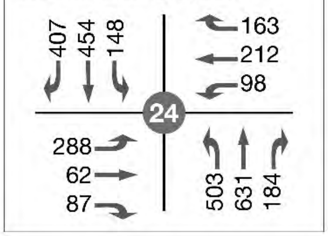
W. 220th St / Meyler St



W. 220th St / S. Vermont Ave



W. 220th St / S. Figueroa St



Legend

● Signalized Intersection ○ Unsignalized Intersection ⤵ Lane Geometry

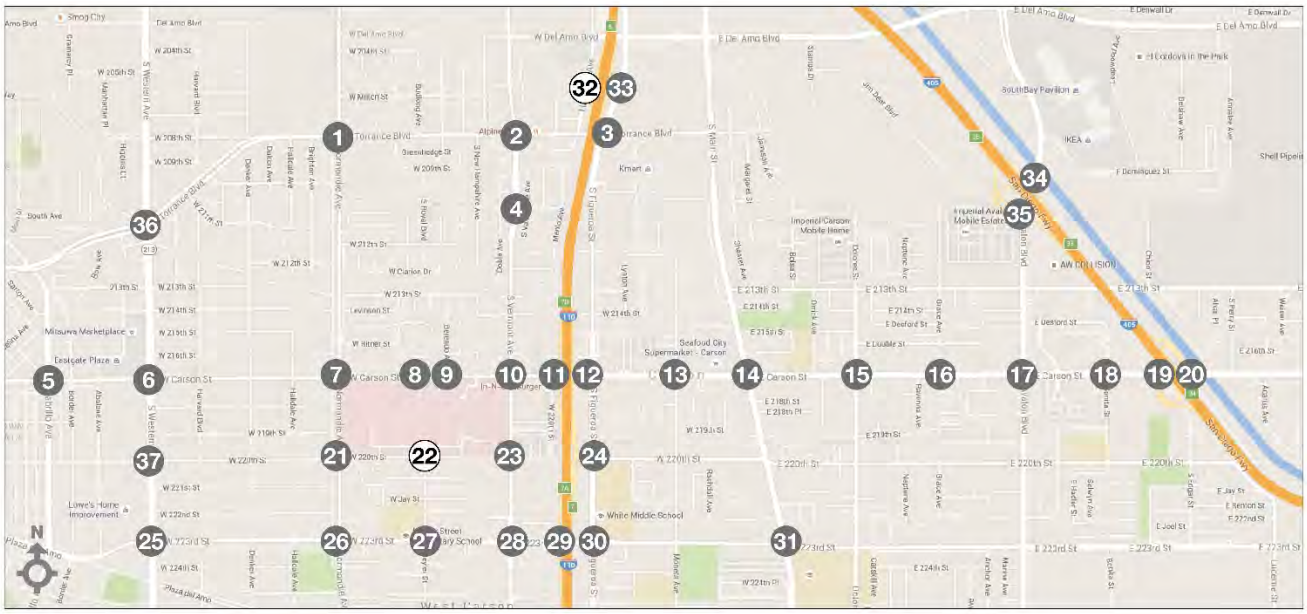
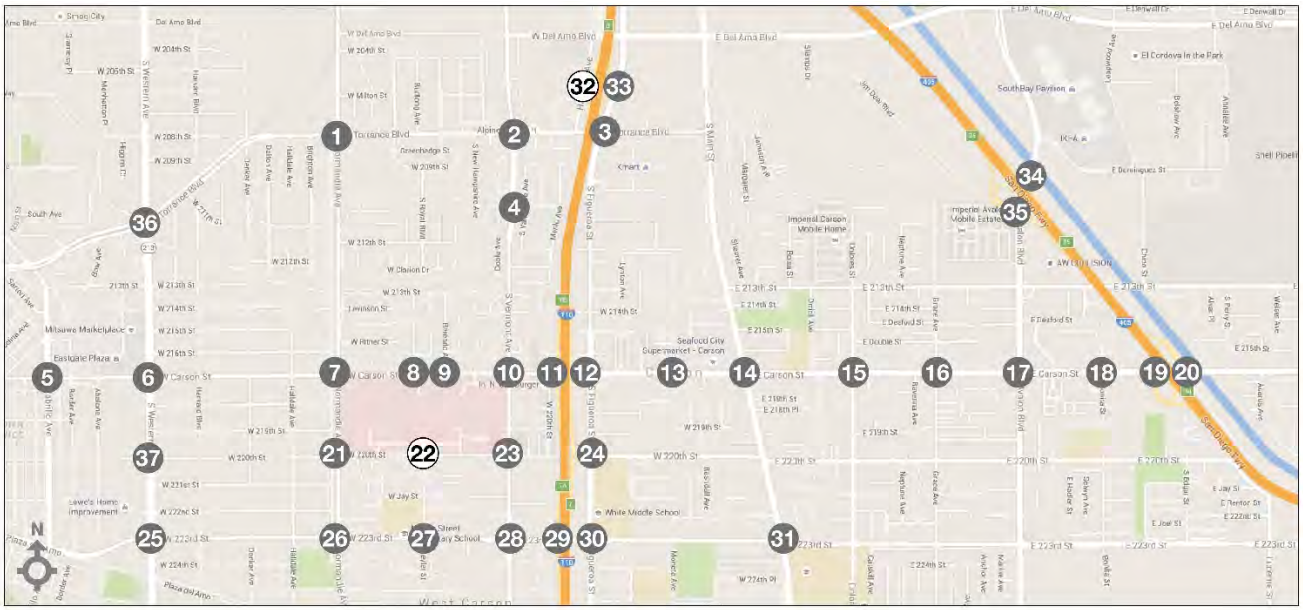
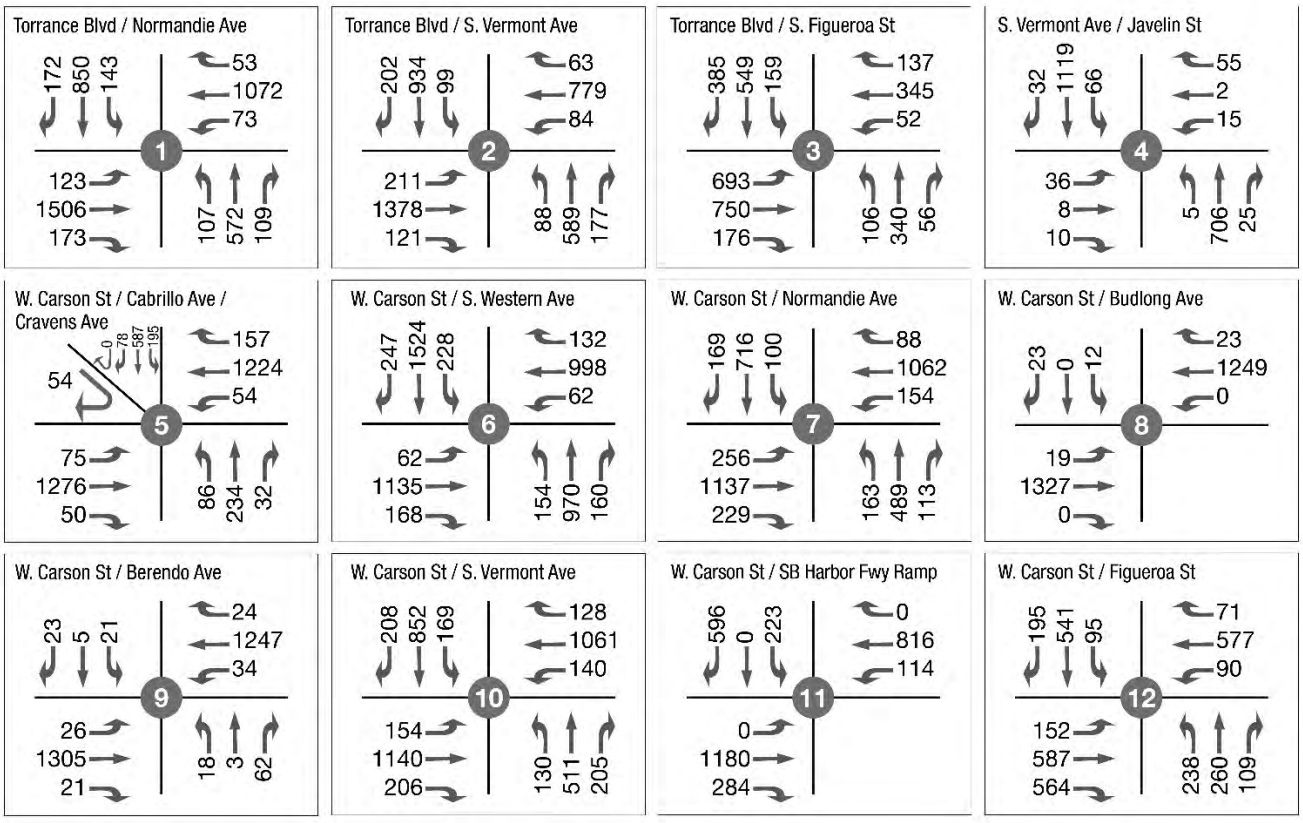

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
Torrance Blvd
Del Amo Blvd
Carson St
Western Ave
Normandie Ave
Vermont Ave
Meyler St
Figueroa St
Harbor Fwy
Avalon Blvd
Main St
Hamilton Ave
S. Western Ave
W. 223rd St
W. 220th St
Torrance Blvd
Del Amo Blvd
Carson St
W. 223rd St / S. Western Ave
51 938 70
217 998 277
42 412 95
132 1287 181
W. 223rd St / Normandie Ave
97 462 78
112 1316 163
74 705 55
97 844 161
W. 223rd St / Meyler St
82 46 57
84 1433 118
74 786 59
51 7 59
W. 223rd St / S. Vermont Ave
131 404 195
326 1235 179
101 742 77
322 892 200
SB Harbor Fwy Ramp / W. 223rd St
592 1 349
0 1140 234
0 1043 142
S. Figueroa St / W. 223rd St
208 327 95
346 1006 68
340 852 194
163 612 171
E. 223rd St / Main St
214 516 177
117 1010 130
175 870 116
122 612 208
Hamilton Ave / SB Harbor Fwy Ramp
0 148 357
279 0 972
0 103 119
S. Figueroa St / NB Harbor Fwy Ramp
115 400 0
633 0 350
674 705 0
S. Avalon Blvd / NB I-405 Ramp
215 843 0
426 1 70
363 1055 0
S. Avalon Blvd / NB I-405 Ramp
258 660 0
482 7 532
0 941 116
Torrance Blvd / S. Western Ave
314 993 62
162 1389 158
239 864 80
141 1198 106
Legend
Signalized Intersection
Unsignalized Intersection
Lane Geometry
W. 220th St / S. Western Ave
52 1012 11
36 108 78
32 27 59
107 1540 35

FIGURE 5.2: FUTURE YEAR (2035) NO PROJECT TURNING MOVEMENT VOLUMES – PM PEAK HOUR



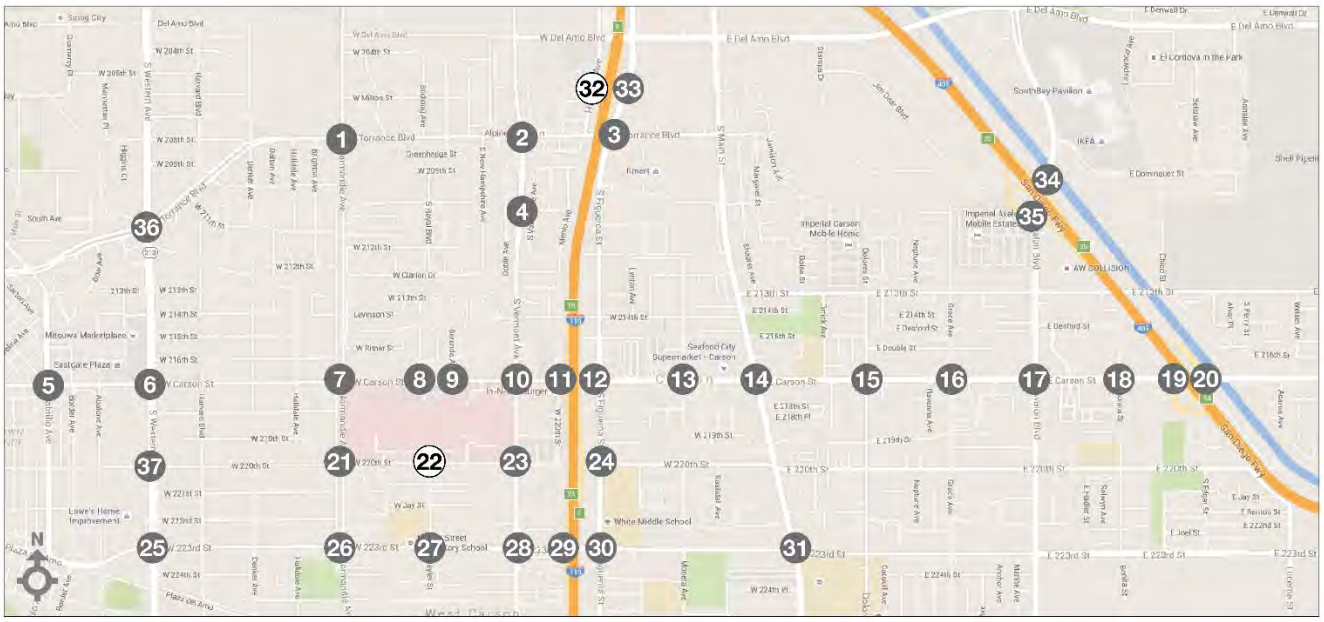


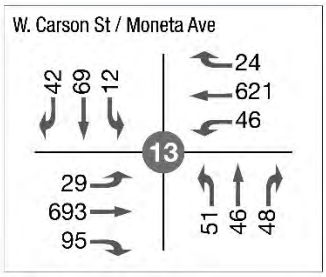
Legend

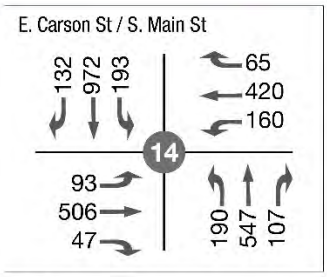
Signalized Intersection

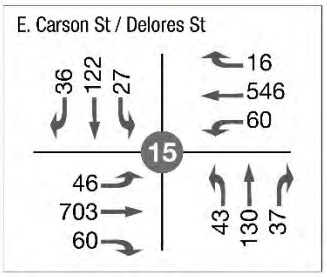
Unsignalized Intersection

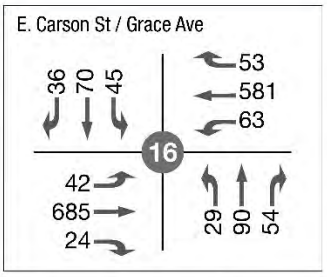
Lane Geometry

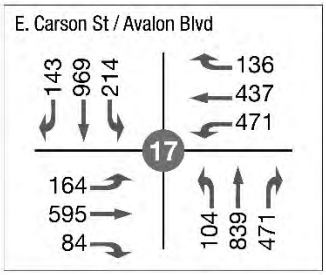


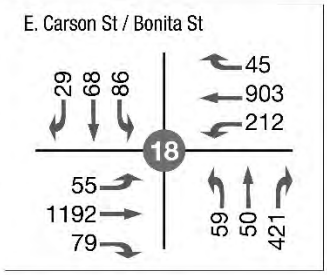


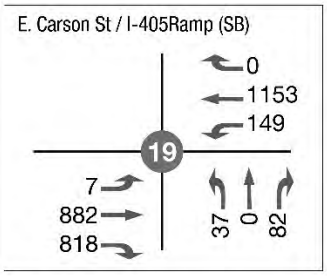


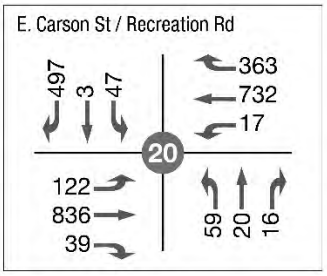


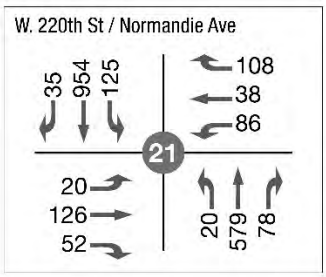


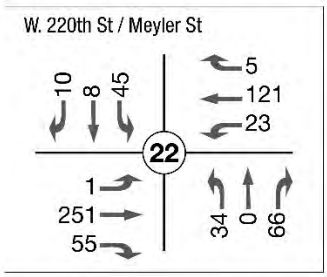


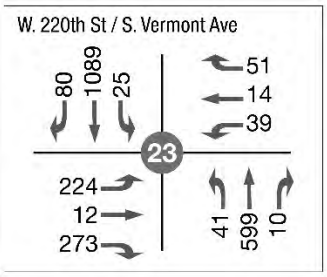


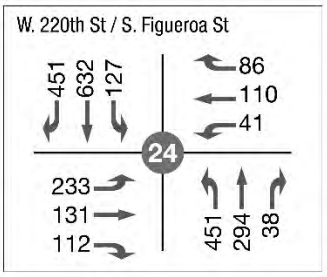






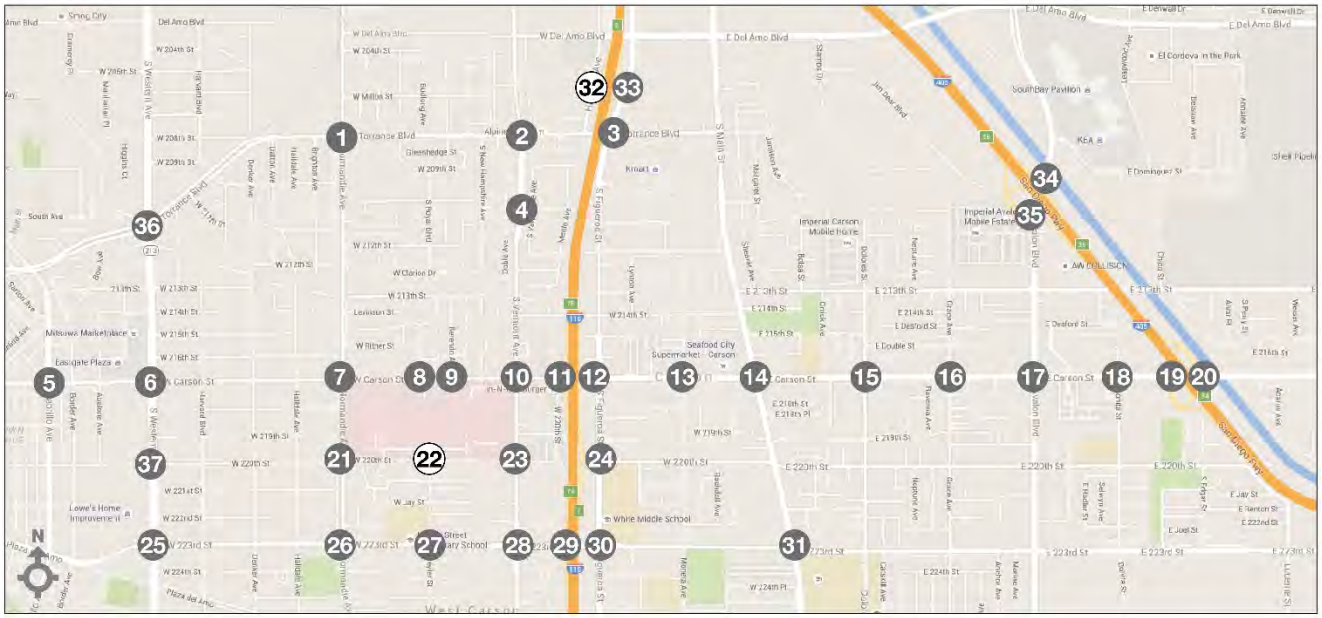


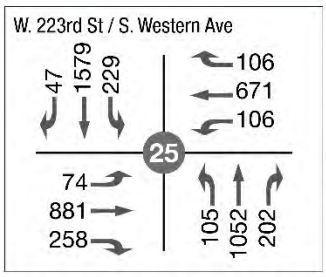


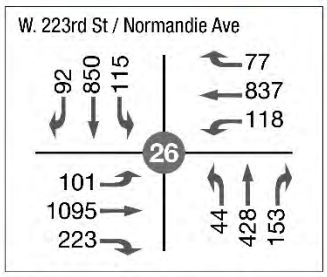


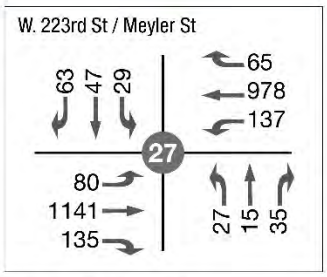
Legend

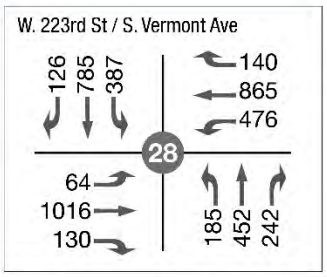
Signalized Intersection Unsignalized Intersection Lane Geometry

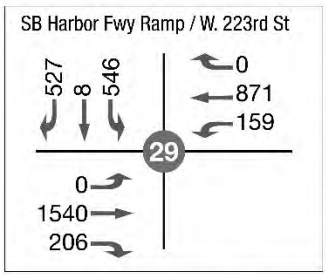

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
Torrance Blvd
Del Amo Blvd
Carson St
Figueroa St
Normandie Ave
Western Ave
Vermont Ave
Harbor Fwy
Alameda St
Main St
Avalon Blvd
Hamilton Ave
Meyler St
Lomita Blvd
W 223rd St
E 223rd St
W 220th St
E 220th St
Del Amo Fashion Center
Seafood City Supermarket - Carson
White Middle School
Lowe's Home Improvement
Imperial Carson Mobile Home Estates
Seaport Marina
Gateway Plaza
Walgreens
Target
Kmart
KIA
AM COLLISION
El Cordova in the Park
SouthBay Pavilion
Mitsuwa Marketplace
Eastgate Plaza
West Carson

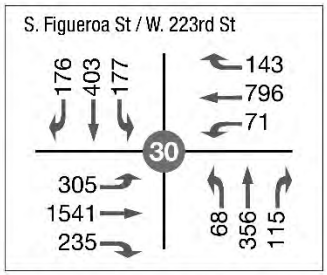

W. 223rd St / S. Western Ave
47
1579
229
106
671
106
25
74
881
258
105
1052
202

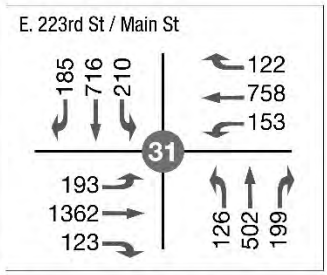

W. 223rd St / Normandie Ave
92
850
115
77
837
118
26
101
1095
223
44
428
153

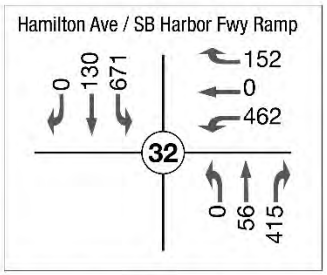

W. 223rd St / Meyler St
63
47
29
65
978
137
27
80
1141
135
27
15
35

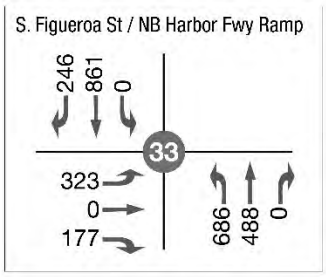

W. 223rd St / S. Vermont Ave
126
785
387
140
865
476
28
64
1016
130
185
452
242

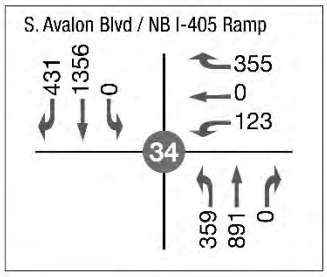

SB Harbor Fwy Ramp / W. 223rd St
527
8
546
0
871
159
29
0
1540
206

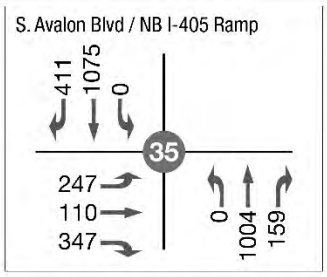

S. Figueroa St / W. 223rd St
176
403
177
143
796
71
30
305
1541
235
68
356
115

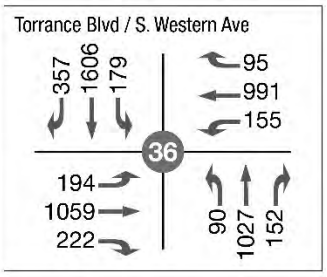

E. 223rd St / Main St
185
716
210
122
758
153
31
193
1362
123
126
502
199

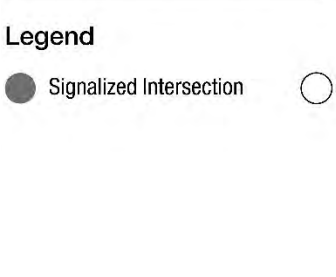

Hamilton Ave / SB Harbor Fwy Ramp
0
130
671
152
0
462
32
0
56
415


S. Figueroa St / NB Harbor Fwy Ramp
246
861
0
33
323
0
177
686
488
0


S. Avalon Blvd / NB I-405 Ramp
431
1356
0
355
0
123
34
359
891
0


S. Avalon Blvd / NB I-405 Ramp
411
1075
0
35
247
110
347
0
1004
159


Torrance Blvd / S. Western Ave
357
1606
179
95
991
155
36
194
1059
222
90
1027
152


Legend
Signalized Intersection
Unsignalized Intersection
Lane Geometry

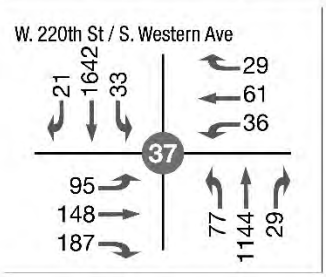

W. 220th St / S. Western Ave
21
1642
33
29
61
36
37
95
148
187
77
1144
29

TABLE 5.4: FUTURE YEAR (2035) NO PROJECT INTERSECTION LEVEL OF SERVICE

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	AM		PM	
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**1.065**	**F**	**1.113**	**F**
		County of Los Angeles	ICU	Signalized	-	-	-	-
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	-	-	-	-
3	Figueroa / Torrance	City of Carson	ICU	Signalized	0.756	C	0.754	C
4	Vermont / Javelin	County of Los Angeles	ICU	Signalized	-	-	-	-
5	Carson / Cabrillo / Cravens	City of Torrance	HCM	Signalized	20.7	C	22.1	C
6	Western / Carson	City of Torrance	HCM	Signalized	33.6	C	**56.9**	**E**
		City of Los Angeles	CMA	Signalized	**0.985**	**E**	**1.124**	**F**
		Caltrans	HCM	Signalized	33.6	C	**56.9**	**E**
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	0.980	D	**1.013**	**F**
		County of Los Angeles	ICU	Signalized	-	-	-	-
8	Budlong / Carson	County of Los Angeles	ICU	Signalized	-	-	-	-
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	-	-	-	-
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	-	-	-	-
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	-	-	-	-
		Caltrans	HCM	Signalized	**38.2**	**D**	31.6	C
12	Figueroa / Carson	City of Carson	ICU	Signalized	0.633	B	0.639	B
13	Moneta / Carson	City of Carson	ICU	Signalized	0.359	A	0.328	A
14	Main / Carson	City of Carson	ICU	Signalized	0.426	A	0.564	A
15	Dolores / Carson	City of Carson	ICU	Signalized	0.332	A	0.382	A
16	Grace / Carson	City of Carson	ICU	Signalized	0.317	A	0.390	A
17	Avalon / Carson	City of Carson	ICU	Signalized	0.770	C	0.824	D
18	Bonita / Carson	City of Carson	ICU	Signalized	0.648	B	0.822	D
19	SB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.554	A	0.656	B
		Caltrans	HCM	Signalized	7.9	A	8.7	A
20	NB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.623	B	0.653	B
		Caltrans	HCM	Signalized	14.2	B	13.8	B
21	Normandie / 220th	City of Los Angeles	CMA	Signalized	0.495	A	0.498	A
		County of Los Angeles	ICU	Signalized	-	-	-	-
22	Meyler / 220th	County of Los Angeles	ICU	AWSC	-	-	-	-
23	Vermont / 220th	County of Los Angeles	ICU	Signalized	-	-	-	-
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	**0.981**	**E**	0.886	D
		Caltrans	HCM	Signalized	**65.6**	**E**	**58.3**	**E**
25	Western / 223rd	City of Torrance	HCM	Signalized	38.7	D	47.3	D
		City of Los Angeles	CMA	Signalized	**0.992**	**E**	**1.049**	**F**
		Caltrans	HCM	Signalized	**38.7**	**D**	**47.3**	**D**
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.821	D	0.787	C
		County of Los Angeles	ICU	Signalized	-	-	-	-
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	-	-	-	-
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	-	-	-	-
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	-	-	-	-
		Caltrans	HCM	Signalized	25.9	C	**46.7**	**D**
30	Figueroa / 223rd	City of Carson	ICU	Signalized	0.778	C	0.748	C
31	Main / 223rd	City of Carson	ICU	Signalized	0.727	C	0.824	D
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	-	-	-	-
		Caltrans	HCM	AWSC	**78.0**	**F**	**184.2**	**F**
33	Figueroa / NB I-110 Ramps	City of Carson	ICU	Signalized	0.695	B	0.693	B
		Caltrans	HCM	Signalized	31.2	C	24.3	C
34	Avalon / NB I-405	City of Carson	ICU	Signalized	0.352	A	0.461	A
		Caltrans	HCM	Signalized	18.4	B	18.1	B
35	Avalon / SB I-405	City of Carson	ICU	Signalized	0.519	A	0.460	A
		Caltrans	HCM	Signalized	14.4	B	11.8	B
36	Western / Torrance	City of Torrance	HCM	Signalized	**55.1**	**E**	43.9	D
		City of Los Angeles	CMA	Signalized	**0.991**	**E**	**0.927**	**E**
		Caltrans	HCM	Signalized	**55.1**	**E**	**43.9**	**D**
37	Western / 220th	City of Torrance	HCM	Signalized	8.4	A	20.3	C
		City of Los Angeles	CMA	Signalized	0.666	B	**0.909**	**E**
		Caltrans	HCM	Signalized	8.4	A	20.3	C

AWSC = All Way Stop Control. **Bold and shaded** = Intersection operates at an unacceptable LOS using the methodology listed.

5.4 CMP MONITORING STATION ANALYSIS

The CMP monitoring station analysis results for the AM and PM peak hours are summarized in Table 5.5 and Table 5.6, respectively. The analysis was performed in accordance with the methodology outlined in Section 3.4.1. An unacceptable LOS (LOS F) is forecast at the following locations:

- I-110 at Manchester Boulevard
- I-405 at Santa Fe Avenue
- I-405 south of I-110
- I-405 north of Inglewood Avenue

5.5 FREEWAY MAINLINE ANALYSIS

The freeway mainline analysis results for the AM and PM peak hours are summarized in Table 5.7 and Table 5.8, respectively. The analysis was conducted using the methodology and settings outlined in Section 3.4.2. All freeway segments are forecast to operate at an unacceptable level of service (LOS D or worse).

5.6 FREEWAY OFF-RAMP QUEUE ANALYSIS

Per Caltrans traffic study guidelines, a queue analysis for freeway off-ramps at intersections of interest is to be provided. Table 5.5 summarizes the storage capacities and queue lengths expected for these off-ramps. All freeway off-ramps are forecast to provide sufficient storage capacity such that the 85% storage capacity is not exceeded by expected queues. The off-ramps evaluated in Future Year (2035) scenarios are listed below:

- Southbound I-110 Off-Ramp at Carson Street
- Southbound I-405 Off-Ramp at Carson Street
- Northbound I-405 Off-Ramp at Carson Street
- Northbound I-110 Off-Ramp/220th Street at Figueroa Street
- Southbound I-110 Off-Ramp at 223rd Street
- Southbound I-110 Off-Ramp at Hamilton Avenue
- Northbound I-110 Off-Ramp at Figueroa Street
- Northbound I-405 Off-Ramp at Avalon Boulevard
- Southbound I-405 Off-Ramp at Avalon Boulevard

5.7 VEHICLE MILES TRAVELED (VMT) ANALYSIS

VMT calculations were prepared based on the land use characteristics for the Future Year (2035) No Project scenario using the land use zoning outlined in Section 3.3. A summary of the results for this scenario are presented in Table 5.10.

TABLE 5.5: FUTURE YEAR (2035) NO PROJECT CMP MONITORING STATION ANALYSIS – AM PEAK HOUR

ID	Freeway	Segment	Station	Direction	Lanes	Capacity	Peak Hour Volume	V/C	LOS
1	I-110	at Wilmington Boulevard s/o C Street	1045	NB	4	8,000	4,898	0.612	C
				SB	4	8,000	3,577	0.447	B
2	I-110	at Manchester Boulevard	1046	NB	6	12,000	9,551	0.796	D
				SB	6	12,000	11,636	0.970	E
3	I-405	at Santa Fe Avenue	1066	**NB**	**5**	**10,000**	**11,675**	**1.168**	**F(0)**
				SB	**5**	**10,000**	**13,618**	**1.362**	**F(2)**
4	I-405	south of I-110	1067	**NB**	**5**	**10,000**	**10,211**	**1.021**	**F(0)**
				SB	5	10,000	8,378	0.838	D
5	I-405	north of Inglewood Avenue	1068	NB	5	10,000	9,096	0.910	D
				SB	**5**	**10,000**	**11,949**	**1.195**	**F(0)**
6	SR-91	east of Alameda Street/Santa Fe Avenue	1033	EB	6	12,000	8,986	0.749	C
				WB	6	12,000	6,533	0.544	C

Bold and shaded = Unacceptable evel of service (LOS F). Pc/mi/ln = passenger-car per mile per lane.

TABLE 5.6: FUTURE YEAR (2035) NO PROJECT CMP MONITORING STATION ANALYSIS – PM PEAK HOUR

ID	Freeway	Segment	Station	Direction	Lanes	Capacity	Peak Hour Volume	V/C	LOS
1	I-110	at Wilmington Boulevard s/o C Street	1045	NB	4	8,000	3,290	0.411	B
				SB	4	8,000	4,997	0.625	C
2	I-110	at Manchester Boulevard	1046	NB	6	12,000	10,499	0.875	D
				SB	**6**	**12,000**	**12,813**	**1.068**	**F(0)**
3	I-405	at Santa Fe Avenue	1066	**NB**	**5**	**10,000**	**10,490**	**1.049**	**F(0)**
				SB	**5**	**10,000**	**16,979**	**1.698**	**F(3)**
4	I-405	south of I-110	1067	NB	5	10,000	9,293	0.929	D
				SB	**5**	**10,000**	**10,597**	**1.060**	**F(0)**
5	I-405	north of Inglewood Avenue	1068	**NB**	**5**	**10,000**	**11,281**	**1.128**	**F(0)**
				SB	**5**	**10,000**	**11,703**	**1.170**	**F(0)**
6	SR-91	east of Alameda Street/Santa Fe Avenue	1033	EB	6	12,000	8,581	0.715	C
				WB	6	12,000	6,914	0.576	C

Bold and shaded = Unacceptable evel of service (LOS F). Pc/mi/ln = passenger-car per mile per lane.

TABLE 5.7: FUTURE YEAR (2035) NO PROJECT FREEWAY MAINLINE ANALYSIS SUMMARY – AM PEAK HOUR

ID	Freeway	Location	Direction	Density (pc/mi/ln)	LOS
1	SR-91	at Avalon Boulevard	EB	15.9	B
			WB	**27.9**	**D**
2	I-110	at SR-1 (Pacific Coast Highway)	NB	**28.6**	**D**
			SB	19.5	C
3	I-110	at Sepulveda Boulevard	NB	**37.6**	**E**
			SB	23.8	C
4	I-110	at El Segundo Boulevard	NB	**27.6**	**D**
			SB	**36.9**	**E**
5	I-405	at I-710	NB	**63.0**	**F**
			SB	**48.9**	**F**
6	I-405	south of I-110 (Carson Scales)	NB	**29.4**	**D**
			SB	22.4	C
7	I-405	at Western Avenue	NB	**31.0**	**D**
			SB	**32.9**	**D**

Bold and shaded = Unacceptable evel of service (LOS D or w orse). Pc/mi/ln = passenger-car per mile per lane.

TABLE 5.8: FUTURE YEAR (2035) NO PROJECT FREEWAY MAINLINE ANALYSIS SUMMARY – PM PEAK HOUR

ID	Freeway	Location	Direction	Density (pc/mi/ln)	LOS
1	SR-91	at Avalon Boulevard	EB	24.3	C
			WB	18.6	C
2	I-110	at SR-1 (Pacific Coast Highway)	NB	18.2	C
			SB	**28.3**	**D**
3	I-110	at Sepulveda Boulevard	NB	22.3	C
			SB	**35.1**	**E**
4	I-110	at El Segundo Boulevard	NB	**26.5**	**D**
			SB	**36.0**	**E**
5	I-405	at I-710	NB	**45.5**	**F**
			SB	**127.4**	**F**
6	I-405	south of I-110 (Carson Scales)	NB	25.8	C
			SB	**31.1**	**D**
7	I-405	at Western Avenue	NB	**33.8**	**D**
			SB	**39.3**	**E**

Bold and shaded = Unacceptable evel of service (LOS D or w orse). Pc/mi/ln = passenger-car per mile per lane.

TABLE 5.9: FUTURE YEAR (2035) NO PROJECT QUEUE ANALYSIS

ID	Ramp	Cross Street	Ramp Length (ft) [a]	85% Ramp Length (ft)	Ramp Turn Lanes at Intersection			AM Queue		PM Queue		Queue Exceeds 85% Storage?	
					Lanes	Movement	Length [a]	Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	AM	PM
11	I-110 Southbound Off-Ramp	Carson Street	980	830	2	Left	980	66	577	111	390	No	No
						Right	380	577		390			
19	I-405 Southbound Off-Ramp	Carson Street	1,100	940	2	Left	660	44	44	30	30	No	No
						Right	1,100	43		23			
20	I-405 Northbound Off-Ramp	Carson Street	1,200	1,020	2	Through/Left	1,200	28	172	34	157	No	No
						Right	620	172		157			
24	I-110 Northbound Off-Ramp	Figueroa Street	1,150	980	2	Through/Left	1,150	503	503	512	512	No	No
						Right	530	18		41			
29	I-110 Southbound Off-Ramp	223rd Street	935	800	2	Through/Left	935	314	314	526	526	No	No
						Right/Through	405	314		526			
32	I-110 Southbound Off-Ramp	Hamilton Avenue	890	760	3	Left	890	448	448	85	85	No	No
						Left	355	448		85			
						Right	40	48		23			
33	I-110 Northbound Off-Ramp	Figueroa Street	880	750	2	Left	880	484	484	198	198	No	No
						Right/Left	340	271		85			
34	I-405 Northbound Off-Ramp	Avalon Boulevard	980	830	3	Left	980	29	268	44	200	No	No
						Through/Left	320	29		44			
						Right	320	268		200			
35	I-405 Southbound Off-Ramp	Avalon Boulevard	390	330	5	Left	390	75	266	54	176	No	No
						Left	390	75		54			
						Through	390	3		28			
						Through	390	3		28			
						Right	240	266		176			

[a] = Length measured from scaled aerial images.

TABLE 5.10: FUTURE YEAR (2035) NO PROJECT VMT SUMMARY

Land Use	Average Daily Trip Rate			Annual VMT	Population / Employees	Annual VMT Per Capita
	Weekday	Saturday	Sunday			
Apartments (Mid-Rise)	2,912.70	2,798.82	2,566.68	**9,728,632**	**1,217**	**7,994**
General Light Industry	1,674.33	317.09	163.35	**5,599,941**	**197**	**28,426**
General Office Building	1,028.88	229.47	97.94	**2,518,172**	**164**	**15,355**
Hospital	25,664.51	19,762.84	17,297.34	**91,594,680**	**6,116**	**14,976**
Single Family Housing	11,633.44	12,110.02	10,533.64	**39,448,998**	**3,725**	**10,590**
Strip Mall	18,587.36	17,631.16	8,568.14	**32,381,116**	**427**	**75,834**
Unrefrigerated Warehouse - No Rail	640.11	640.11	640.11	**2,743,346**	**303**	**9,054**
Total	**62,141.33**	**53,489.51**	**39,867.20**	**184,014,885**	**12,149**	**162,229**

6 PROJECT TRAFFIC

A description of the methods utilized to generate, distribute, and assign project-generated traffic to intersections within the study area are presented in this section.

6.1 TRIP GENERATION

The trip generation for the West Carson Traffic Study has been estimated using rates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition. The trip generation rates and the forecast trip volumes for the proposed land uses are in line with the land uses used to generate the VMT in CalEEMod.

The proposed project volumes were calculated by subtracting the generated trips under the existing land use from the proposed land use zoning. In order to account for pass-by, internal capture, and/or TDM reductions in the development of project volumes, the reductions were first applied to the existing and proposed land uses (if applicable); the difference in trips generated was then taken again, resulting in the project (net) trips with the reductions already accounted for.

The project is expected to generate 29,488 daily trips, with 2,989 trips (2,178 inbound / 811 outbound) during the AM peak hour and 2,745 trips (826 inbound / 1,919 outbound). The trip generation for the existing land use zoning, proposed land use zoning, and project are presented in the tables below:

TABLE 6.1: PEAK HOUR TRIP GENERATION RATES

Land Use	Land Use Subtype	ITE Code	Units	Daily	AM			PM		
					In	Out	Total	In	Out	Total
Industrial	General Light Industry	110	1000 Sq. Feet	6.97	0.88	0.12	0.92	0.12	0.88	0.97
Industrial	Unrefrigerated Warehouse - No Rail	152	1000 Sq. Feet	1.68	0.69	0.31	0.11	0.31	0.69	0.12
Residential	Single - Family	210	Dwelling Units	9.52	0.25	0.75	0.75	0.63	0.37	1.00
Residential	Multi - Family	223	Dwelling Units	6.65	0.31	0.69	0.30	0.58	0.42	0.39
Commercial	Hospital	610	1000 Sq. Feet	13.22	0.63	0.37	0.95	0.38	0.62	0.93
Commercial	General Office Building	710	1000 Sq. Feet	11.03	0.88	0.12	1.56	0.17	0.83	1.49
Retail	Strip Mall	826	1000 Sq. Feet	44.32	0.56	0.44	1.99	0.44	0.56	2.71

TABLE 6.2: EXISTING LAND USE PEAK HOUR TRIP GENERATION

Land Use	Land Use Subtype	Unit Amount	Units	Daily	AM			PM		
					In	Out	Total	In	Out	Total
Industrial	General Light Industry	188.560	1000 Sq. Feet	1,314	152	21	173	22	161	183
Industrial	Unrefrigerated Warehouse - No Rail	299.074	1000 Sq. Feet	502	23	10	33	11	25	36
Residential	Single - Family	959	Dwelling Units	9,130	180	539	719	604	355	959
Residential	Multi - Family	344	Dwelling Units	2,288	32	71	103	78	56	134
Commercial	Hospital	66.289	1000 Sq. Feet	876	40	23	63	24	38	62
Commercial	General Office Building	73.221	1000 Sq. Feet	808	100	14	114	19	90	109
Retail	Strip Mall	329.191	1000 Sq. Feet	14,590	367	288	655	392	500	892
			Total	29,508	894	966	1,860	1,150	1,225	2,375

TABLE 6.3: PROPOSED LAND USE PEAK HOUR TRIP GENERATION

Land Use	Land Use Subtype	Unit Amount	Units	Daily	AM			PM		
					In	Out	Total	In	Out	Total
Industrial	General Light Industry	571.952	1000 Sq. Feet	3,987	463	63	526	67	488	555
Industrial	Unrefrigerated Warehouse - No Rail	0	1000 Sq. Feet	0	0	0	0	0	0	0
Residential	Single - Family	939	Dwelling Units	8,939	176	528	704	592	347	939
Residential	Multi - Family	2,637	Dwelling Units	17,536	245	546	791	596	432	1,028
Commercial	Hospital	0	1000 Sq. Feet	0	0	0	0	0	0	0
Commercial	General Office Building	1,335.076	1000 Sq. Feet	14,726	1,833	250	2,083	338	1,651	1,989
Retail	Strip Mall	754.295	1000 Sq. Feet	33,430	841	660	1,501	899	1,145	2,044
			Total	78,618	3,558	2,047	5,605	2,492	4,063	6,555

TABLE 6.4: PROJECT (NET) PEAK HOUR TRIP GENERATION

Land Use	Land Use Subtype	Unit Amount	Units	Daily	AM			PM		
					In	Out	Total	In	Out	Total
Industrial	General Light Industry	383.392	1000 Sq. Feet	2,673	311	42	353	45	327	372
Industrial	Unrefrigerated Warehouse - No Rail	-299.074	1000 Sq. Feet	-502	-23	-10	-33	-11	-25	-36
Residential	Single - Family	-20	Dwelling Units	-191	-4	-11	-15	-12	-8	-20
Residential	Multi - Family	2,293	Dwelling Units	15,248	213	475	688	518	376	894
Commercial	Hospital	-66.289	1000 Sq. Feet	-876	-40	-23	-63	-24	-38	-62
Commercial	General Office Building	1,261.855	1000 Sq. Feet	13,918	1,733	236	1,969	319	1,561	1,880
Retail	Strip Mall	425.104	1000 Sq. Feet	18,840	474	372	846	507	645	1,152
			Total	49,110	2,664	1,081	3,745	1,342	2,838	4,180

A summary of the unreduced trip generation for the existing and proposed land use zoning in addition to the project (net) trips is provided in Table 6.5 below:

TABLE 6.5: UNREDUCED PROJECT PEAK HOUR TRIP GENERATION SUMMARY TABLE

Land Use Zoning	Daily	AM			PM		
		In	Out	Total	In	Out	Total
Existing	29,508	894	966	1,860	1,150	1,225	2,375
Proposed	78,618	3,558	2,047	5,605	2,492	4,063	6,555
Project (Net)	49,110	2,664	1,081	3,745	1,342	2,838	4,180

Due to the characterization of the proposed rezoning as a transit oriented development (TOD) project, it was deemed appropriate to apply trip reduction factors to the trips presented in Table 6.5. The project trips were reduced by 1) removing pass-by trips per land use, 2) performing internal trip capture calculations for suitable mixed-use zones, and by 3) applying appropriate traffic demand management (TDM) reductions. Additionally, it was deemed appropriate to only

apply the pass-by and internal capture reductions to the existing land use zoning trip generation; all three reductions were considered appropriate to be applied to the proposed land use zoning.

The purpose of the pass-by reduction is to refine the project-generated trips such that the local and regional effects are accurately represented. This is due to the notion that the removal of pass-by trips by land use helps avoid double counting project trips, directly influencing the amount of impacts created. As noted, the pass-by trip reductions were applied to the trips generated by each individual land use type because every land use type has a unique trip-type distribution. Trip types by land use as provided within CalEEMod are presented in Table 6.6 below:

TABLE 6.6: TRIP TYPE BY LAND USE (%)

Land Use	Primary	Diverted	Pass-By
Apartments Mid Rise	86	11	3
General Light Industry	92	5	3
General Office Building	77	19	4
Hospital	73	25	2
Single Family Housing	86	11	3
Unrefrigerated Warehouse-No Rail	92	5	3
Strip Mall	45	40	15

With regards to the internal trip capture rates, it should be noted that internal trip capture rates were only applied to the total PM peak hour and Daily trips – the ITE Trip Generation Manual does not specify internal trip capture rates for origins or destinations within a mixed-use development during the AM peak hour. Furthermore, the internal capture rates were applied only to those trips between the Residential (single-family and multi-family), Service (General Office Building), and Retail (Strip Mall) land use types within the study area. Internal trip capture rates for the PM peak hour and Daily trips are presented in Table 6.7.

TABLE 6.7: INTERNAL TRIP CAPTURE RATES

Land Use Zoning	PM	Daily
Existing	16%	18%
Proposed	17%	21%

The TDM reduction was performed in accordance with planned community improvements in preliminary concepts of the *West Carson Transit Oriented Development Specific Plan* as well as methods provided in *Quantifying Greenhouse Gas Mitigation Measures*, California Air Pollution Control Officers Association (CAPCOA) 2010. The pertinent measures and their respective range of effectiveness listed in the report are summarized in Table 6.8.

TABLE 6.8: TDM TRIP REDUCTION MEASURES AND RANGE OF EFFECTIVENESS

TDM Measure Number	Measure	Range of Effectiveness			Notes
Land Use / Location					
LUT-2	Increase Location Efficiency	10.0%	to	65.0%	
LUT-3	Increase Diversity (Mixed-Use)	9.0%	to	30.0%	
LUT-6	Integrate Affordbale and Below Market Rate Housing	0.04%	to	1.2%	
LUT-9	Improve Design of Development	3.0%	to	21.3%	Improved design elements to enhance walkability and connectivity.
Neighborhood / Site Improvements					
SDT-1	Provide Pedestrian Network Improvements	0.0%	to	2.0%	
SDT-6	Provide Bike Parking in Non-Residential Projects	-	to	-	Grouped strategy (See LUT-9).
SDT-7	Provide Bike Parking in Multi-Unit Residential Projects	-	to	-	Grouped strategy (See LUT-9).

A TDM trip reduction rate of 10% was deemed appropriate based on the study area size, project size, project characteristics, and measures listed in Table 6.8. The resultant project trip generations is summarized in Table 6.9 below:

TABLE 6.9: PROJECT TRIP GENERATION SUMMARY TABLE

Land Use Zoning	Daily	AM			PM		
		In	Out	Total	In	Out	Total
Existing	29,508	894	966	1,860	1,150	1,225	2,375
Proposed	78,618	3,558	2,047	5,605	2,492	4,063	6,555
Project (Net)	49,110	2,664	1,081	3,745	1,342	2,838	4,180
Project (Internal Capture Reduction)	38,264	2,664	1,081	3,745	1,105	2,390	3,495
Project (Pass-By Reduction)	35,265	2,511	1,001	3,512	1,018	2,241	3,259
Project (TDM Reduction)	29,488	2,178	811	2,989	826	1,919	2,745

6.2 TRIP DISTRIBUTION

The project trip distribution developed for this study is similar to that shown in the Traffic Impact Analysis for the Harbor-UCLA Medical Center Master Plan Project; the distribution was established in consultation with County staff. Additionally, a regional select zone analysis using the SCAG Regional Model reinforces the distribution for this study. The project trip distribution is based on the following assumptions:

- 15% of the project traffic is generated by local trips to and from the east.
- 20% of the project traffic is generated by local trips to and from the west.
- 10% of the project traffic is generated by trips to the north on I-110.
- 15% of the project traffic is generated by trips to the south on I-110.
- 15% of the project traffic is generated by trips to/from the north on I-405 utilizing I-110 to access the project location.
- 15% of the project traffic is generated by SR-91 vehicle trips utilizing I-110 to access the project location.
- 10% of the project traffic is generated by trips to/from the south on I-405 utilizing Carson Street and I-110 to access the project location.

The aforementioned distribution of project trips is depicted in Figure 6.1. Figures 6.2 – 6.4 provide more detailed representations of this distribution. Figure 6.2 presents the inbound and outbound distribution percentages; Figure 6.3 presents the AM peak hour turning movement volumes; Figure 6.4 presents the PM peak hour turning movement volumes.

6.3 AVERAGE DAILY TRAFFIC

The average daily traffic generated by the project at segments of interest are listed in Table 6.10. The project ADT for Segment 6 is taken to be zero due to the increase in traffic being accounted for in the growth of traffic from the existing year to future year conditions. The project trip distribution was performed in a manner such that trips currently being made are accounted for only once (in the growth of Existing Year (2016) No Project to Future Year (2035) No Project trips).

TABLE 6.10: PROJECT TRIP AVERAGE DAILY TRAFFIC SUMMARY TABLE

ID	Segment	Project ADT
1	Carson Street west of Berendo Avenue	5,894
2	Carson Street east of Vermont Avenue	17,680
3	Carson Street east of Figueroa Street	5,894
4	Carson Street west of Normandie Avenue	4,420
5	Normandie Avenue north of Carson Street	246
6	Normandie Avenue south of Carson Street	0
7	Vermont Avenue south of Javelin Street	10,804
8	Vermont Avenue south of Carson Street	5,893
9	Vermont Avenue south of 223rd Street	5,894
10	Figueroa Street south of Carson Street	6,384

FIGURE 6.1: PROJECT TRIP DISTRIBUTION

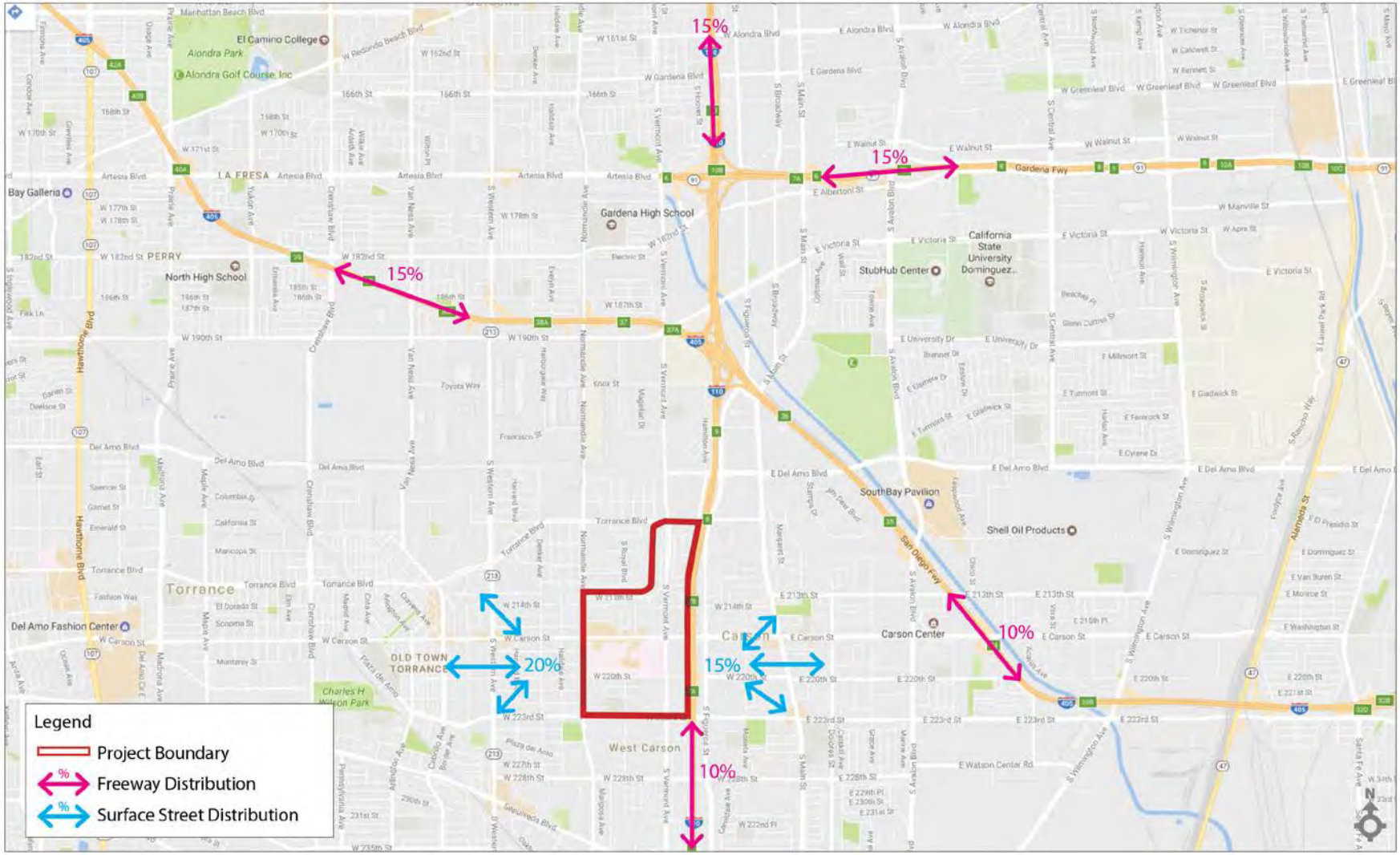
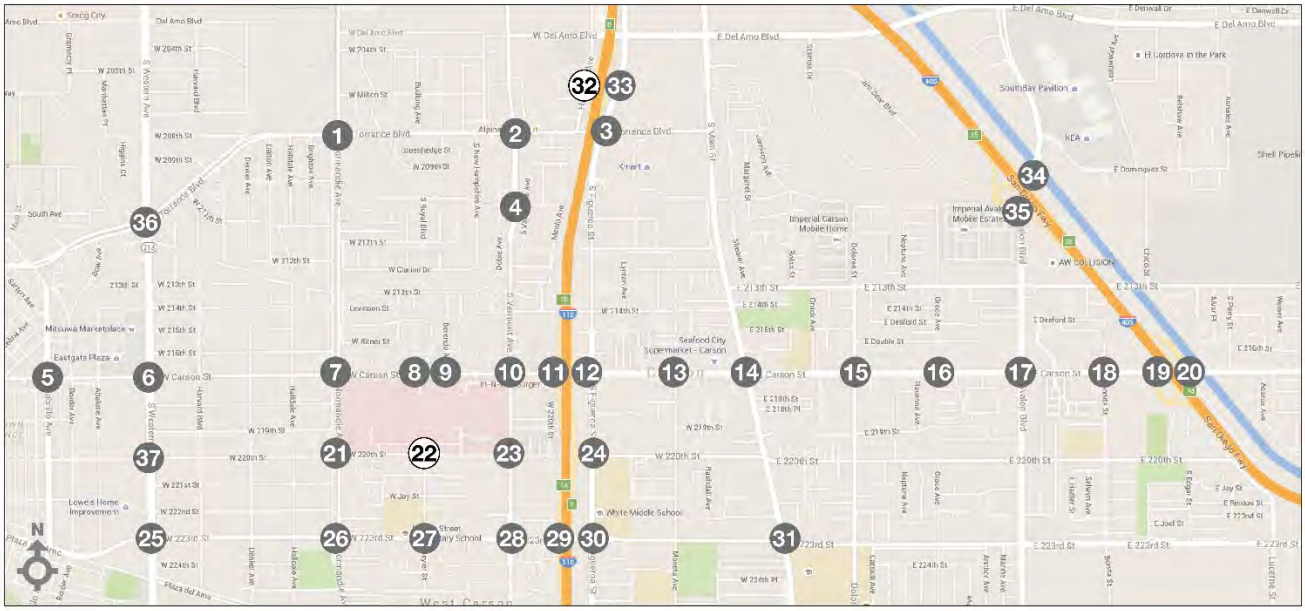
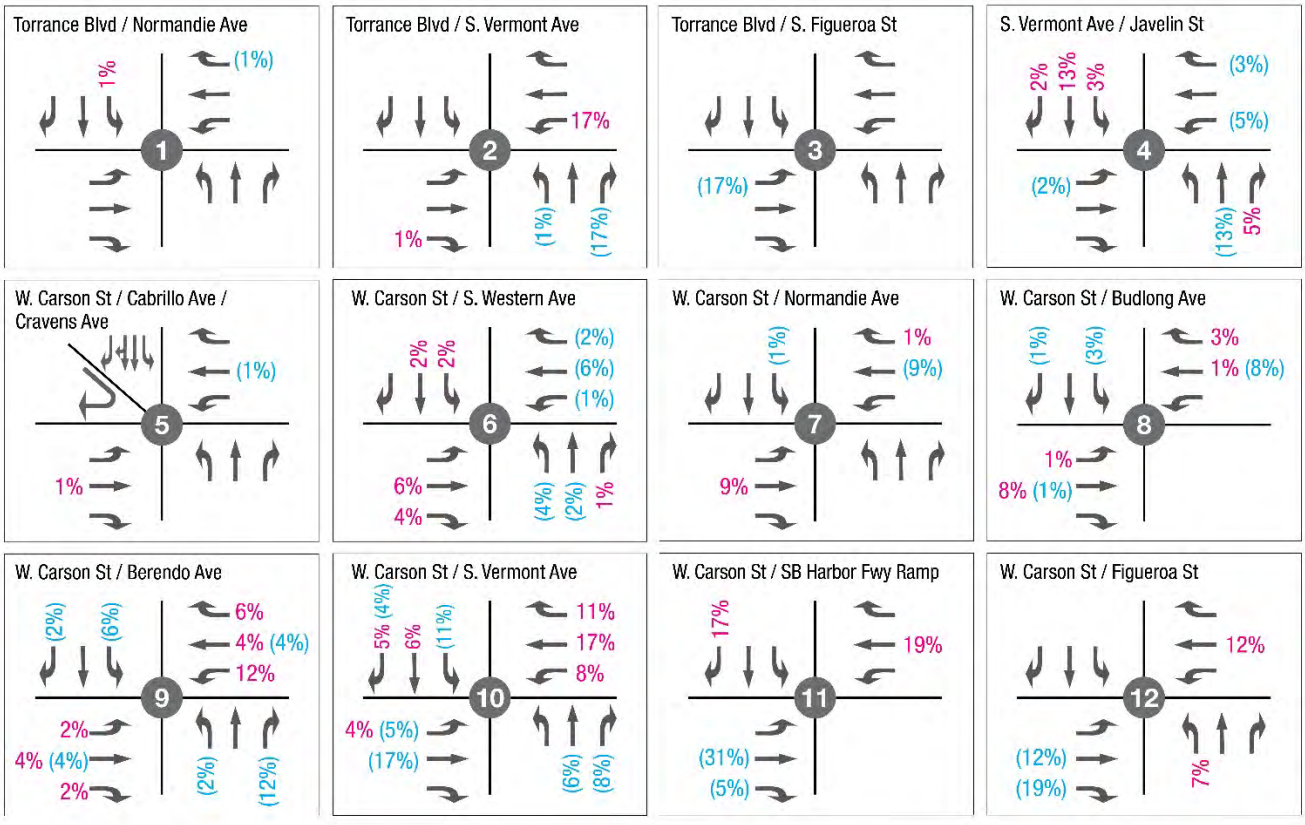


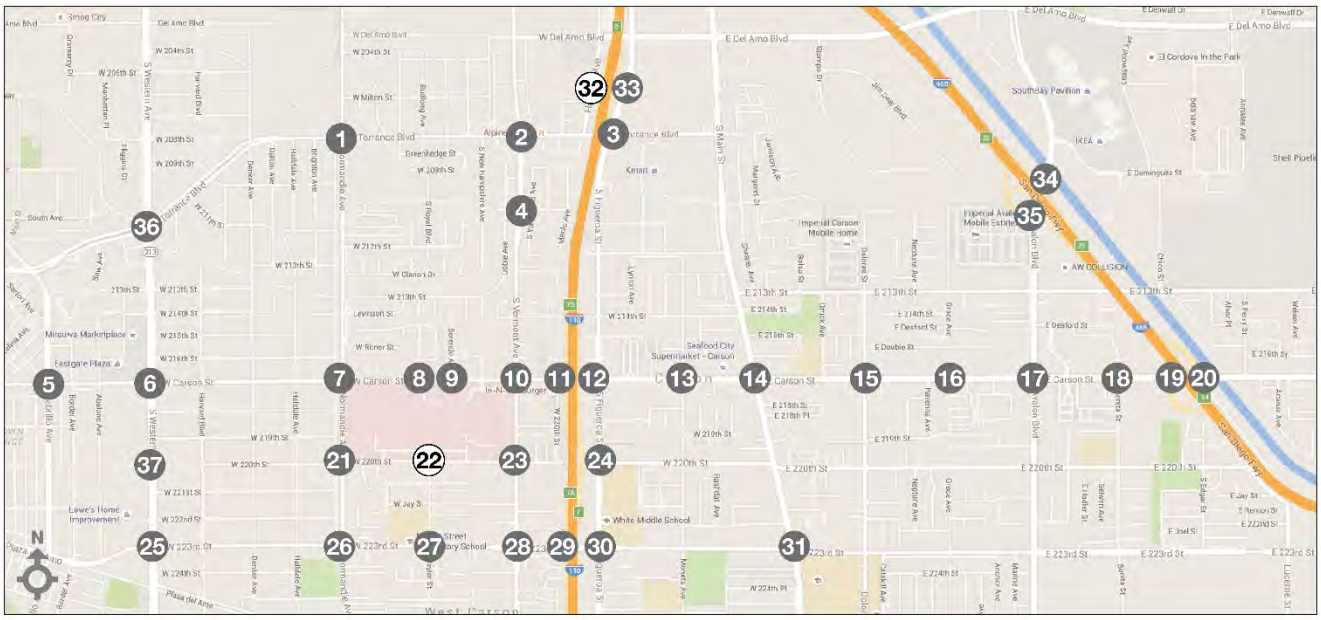
FIGURE 6.2: PROJECT TRIP ASSIGNMENT

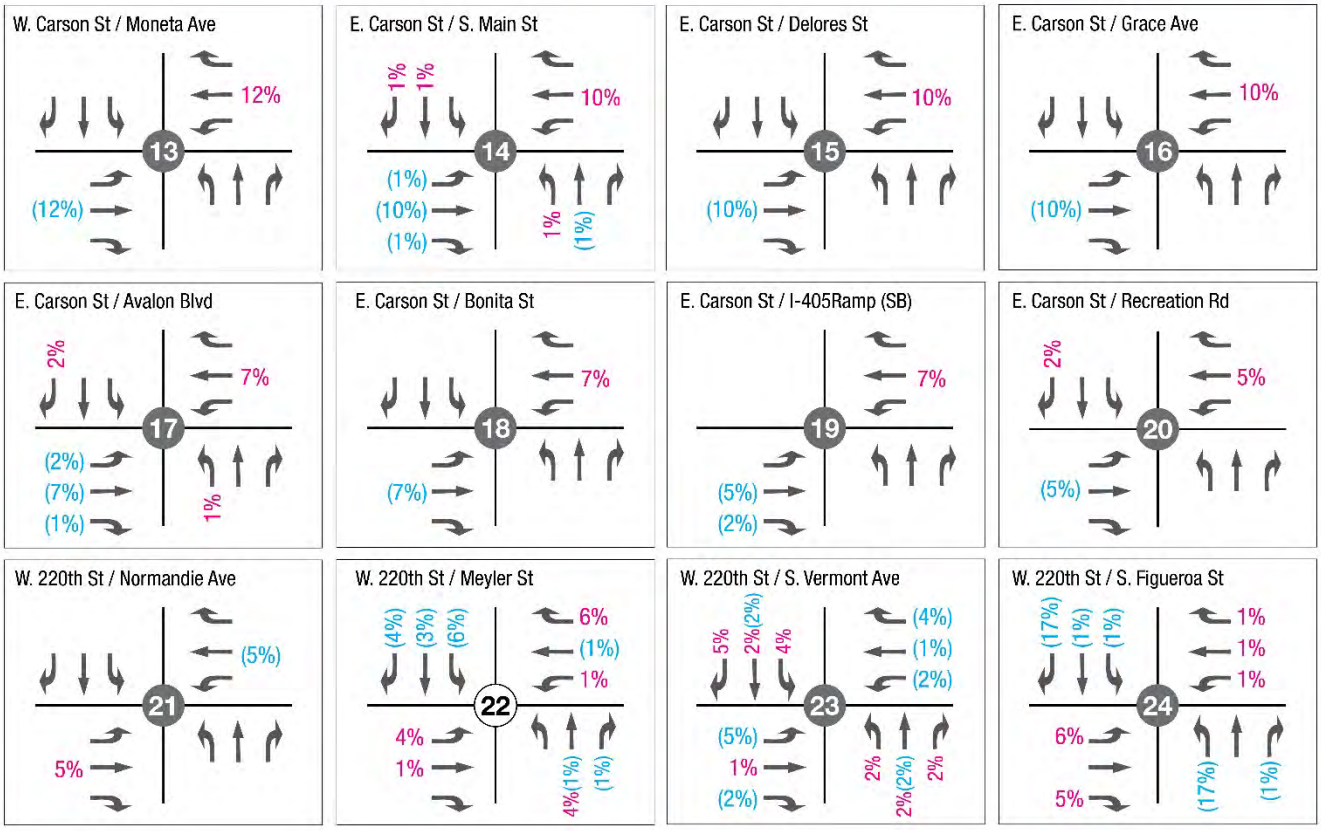




Legend

- Signalized Intersection
- Unsignalized Intersection
- Lane Geometry
- (#%) Outbound Volumes
- #% Inbound Volumes





Legend

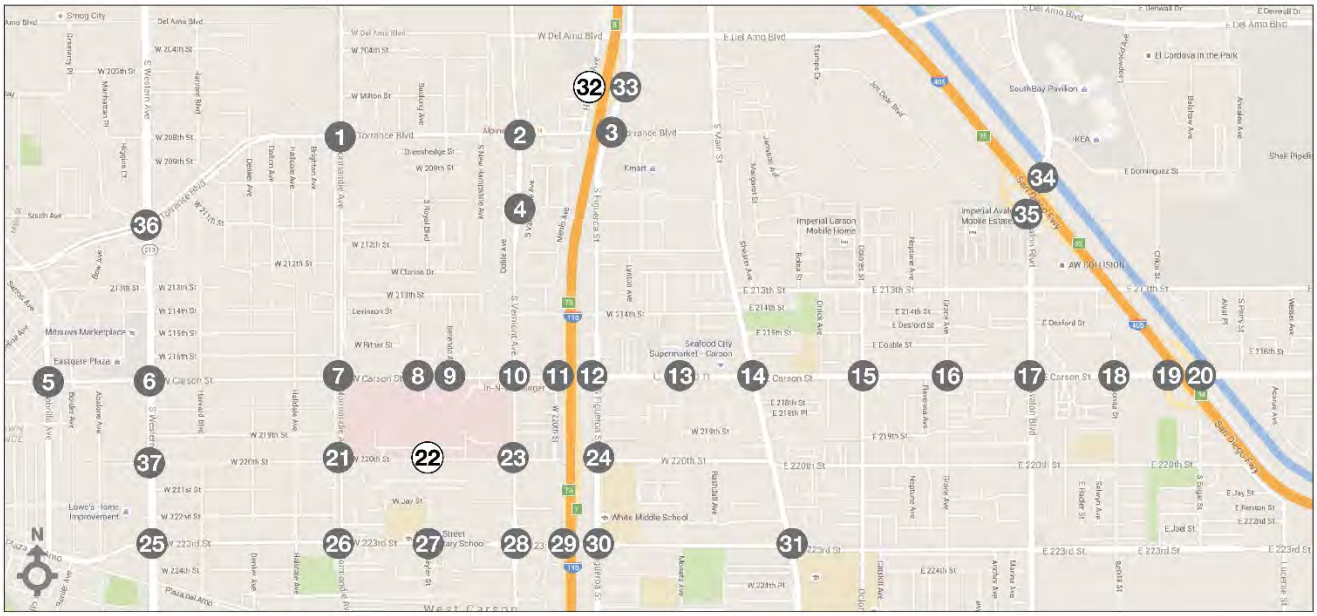
Signalized Intersection

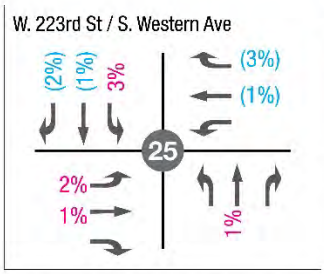
Unsignalized Intersection

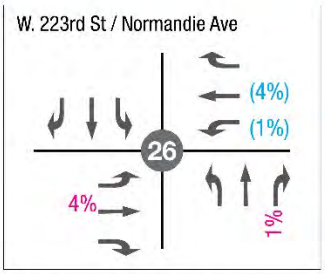
Lane Geometry

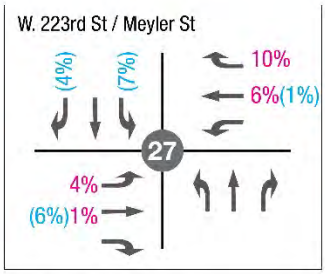
(#%) Outbound Volumes

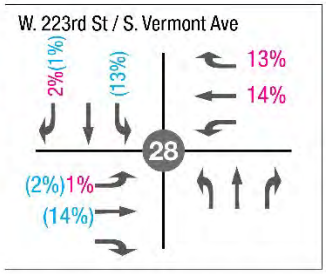
#% Inbound Volumes

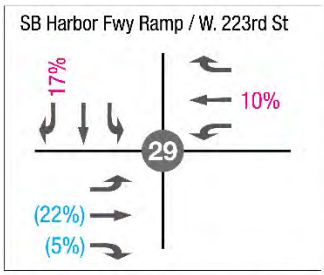


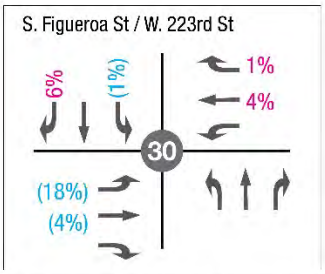


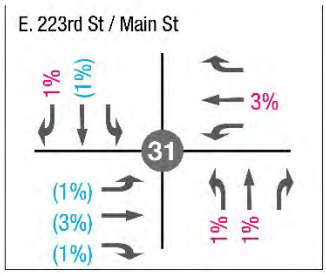


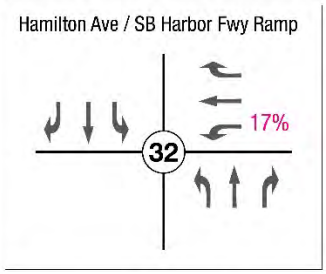


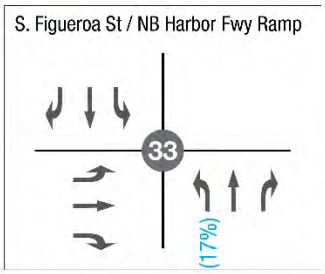


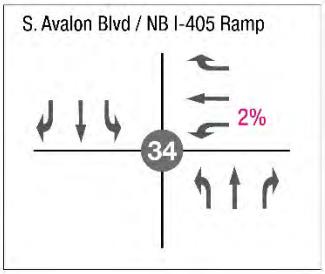


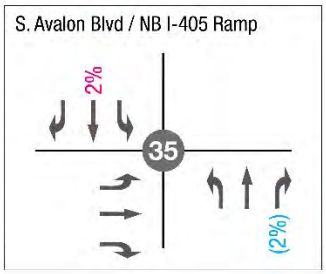


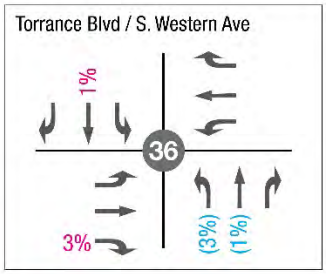












Legend

Signalized Intersection

Unsignalized Intersection

Lane Geometry

(#%) Outbound Volumes

#% Inbound Volumes

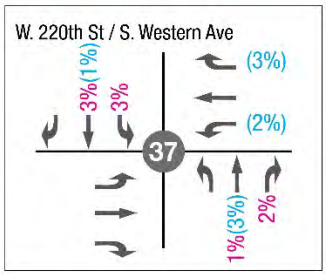
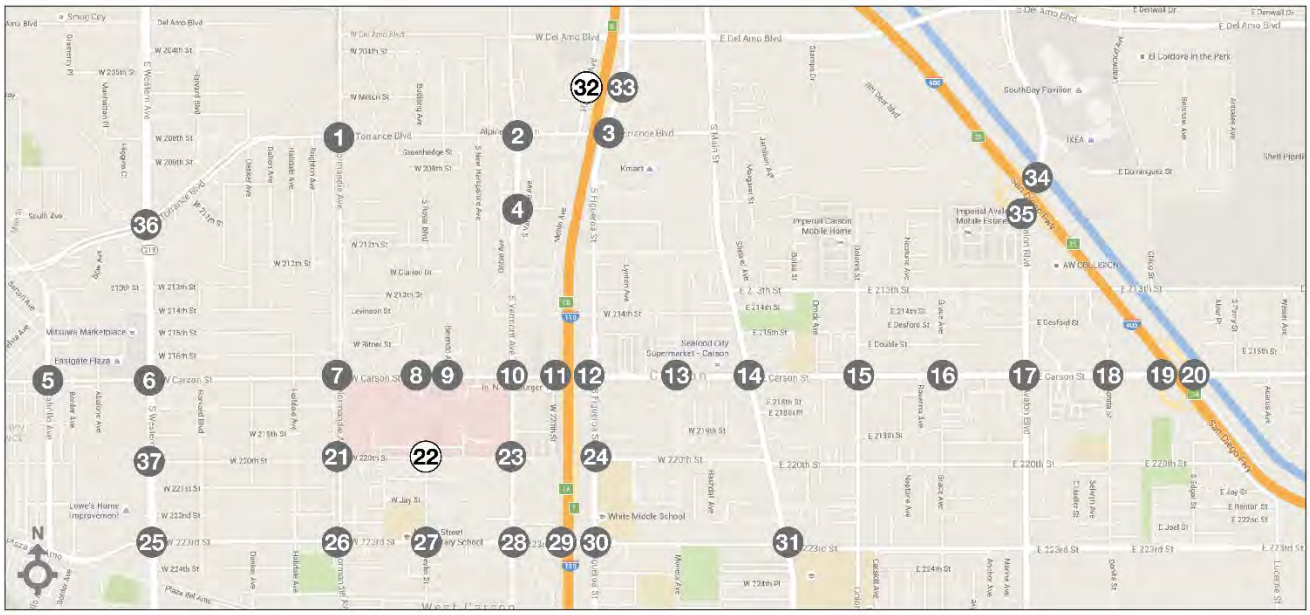
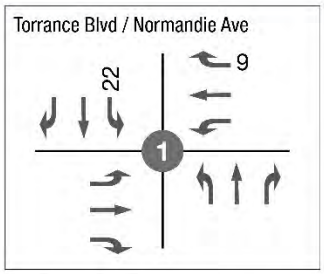
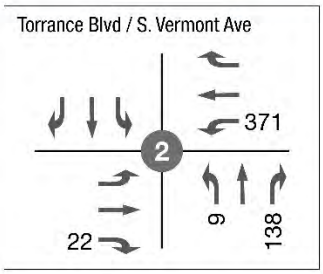
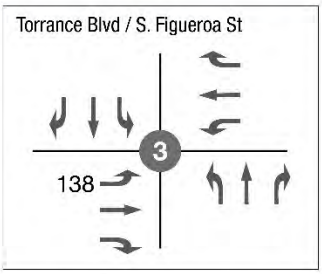


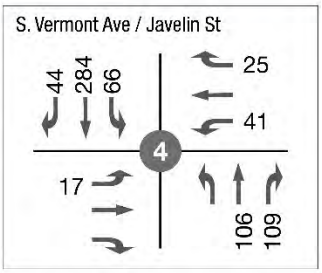
FIGURE 6.3: PROJECT TURNING MOVEMENT VOLUMES – AM PEAK HOUR

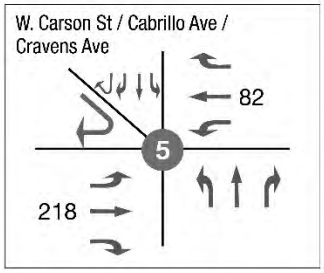


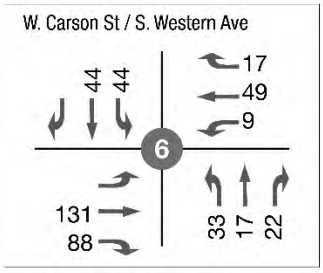


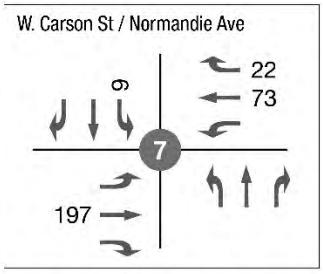


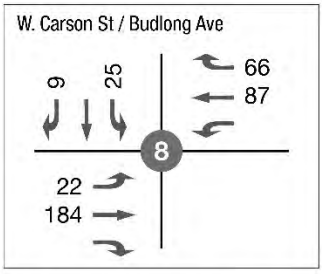


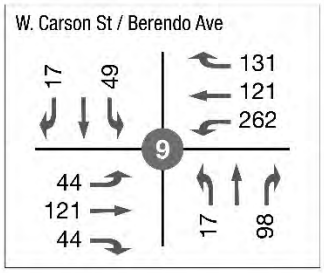


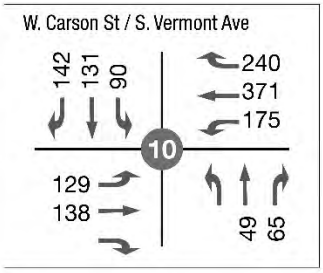


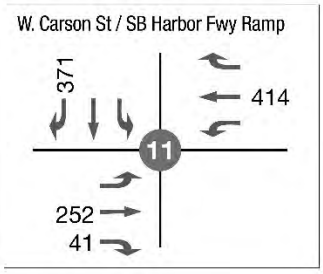


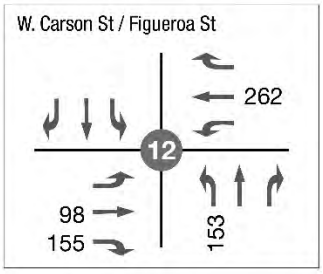






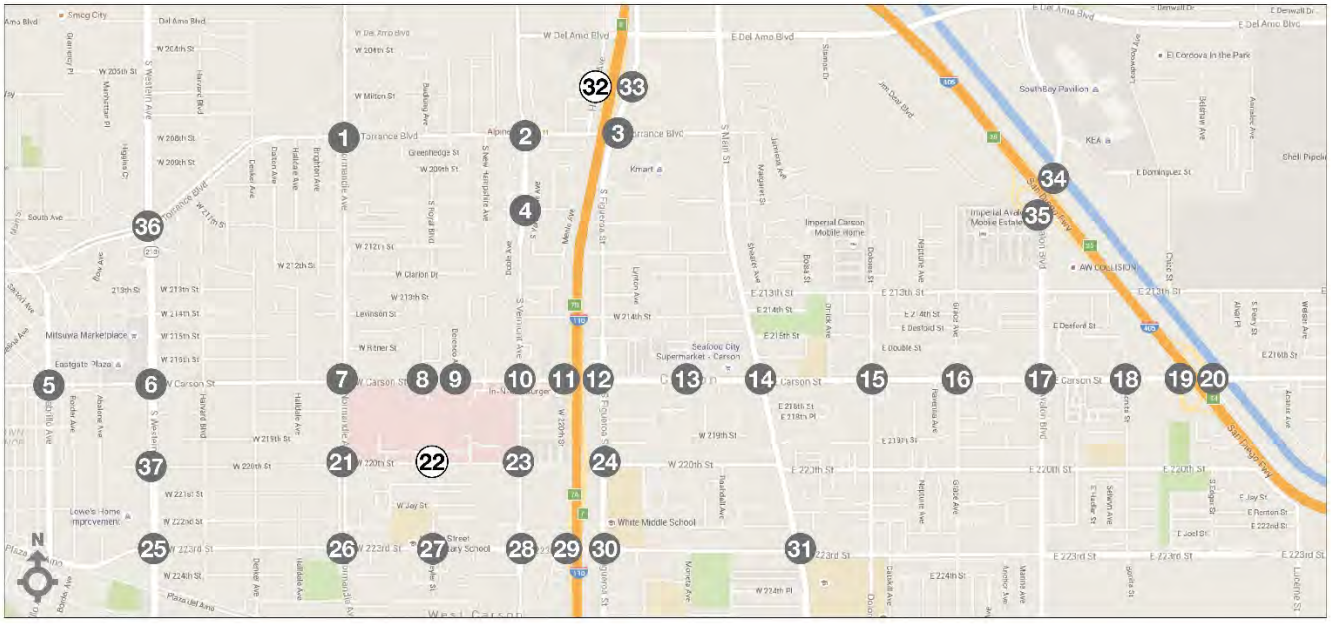


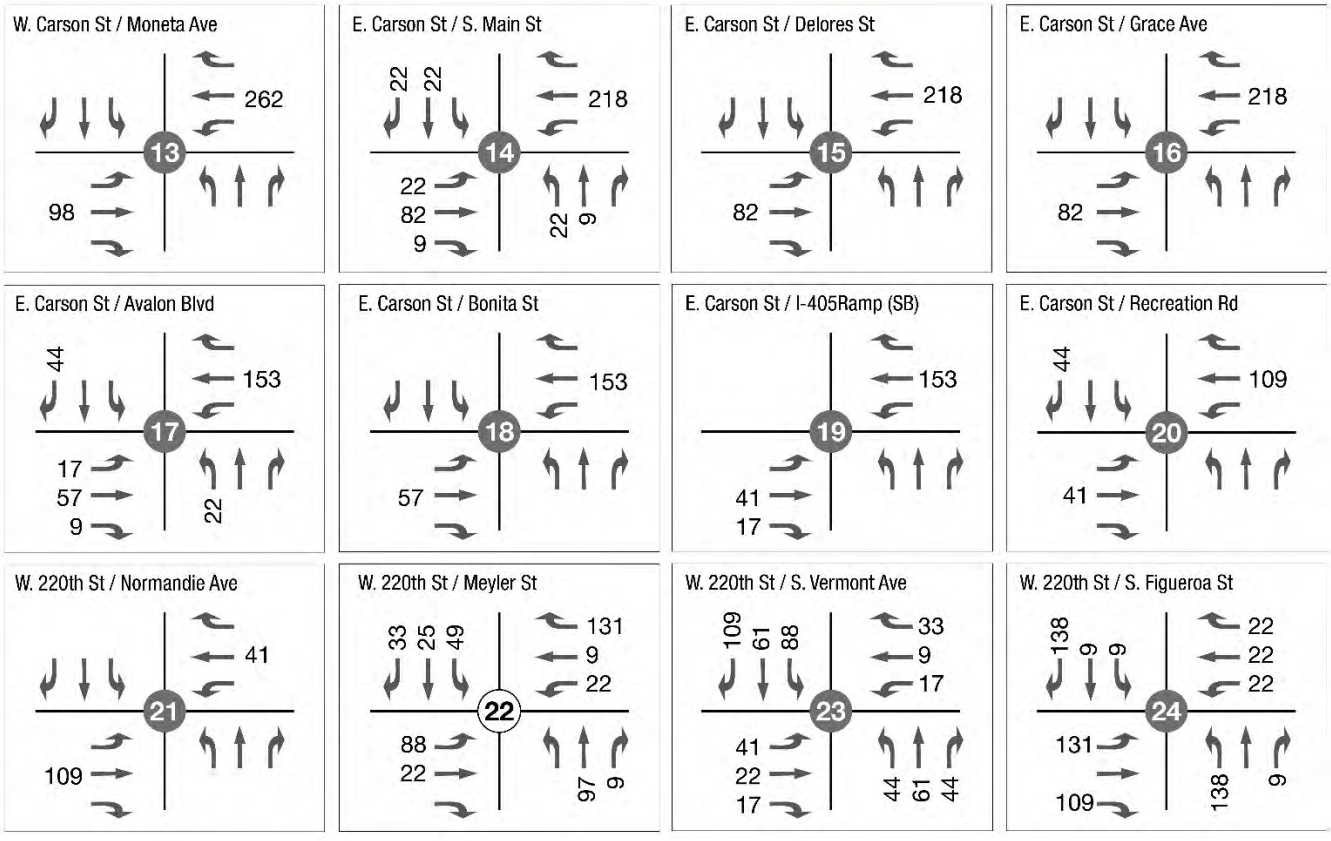




Legend

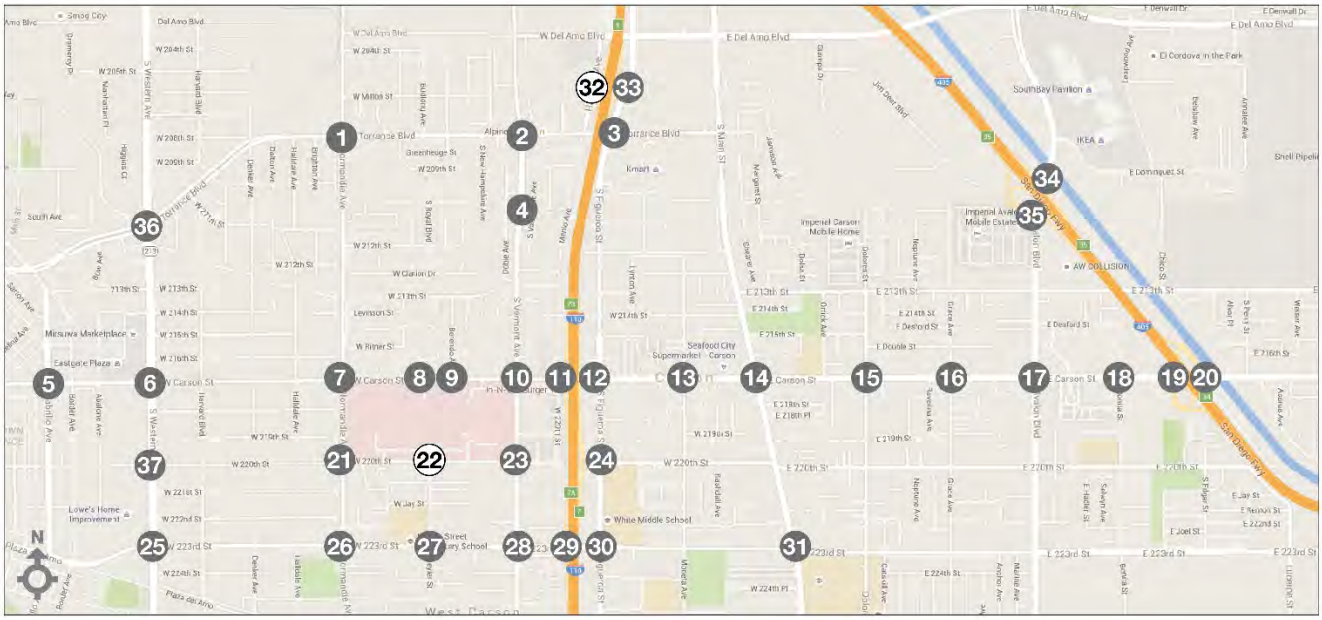
Signalized Intersection Unsignalized Intersection

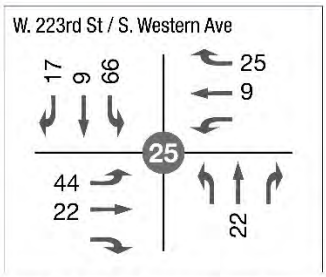


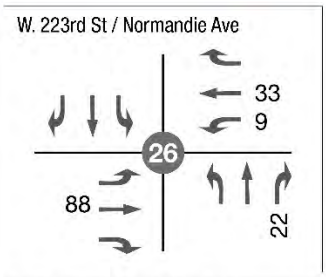


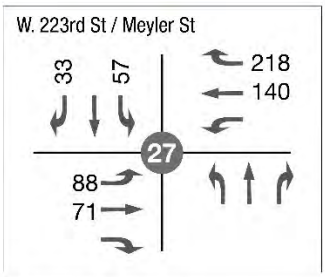
Legend

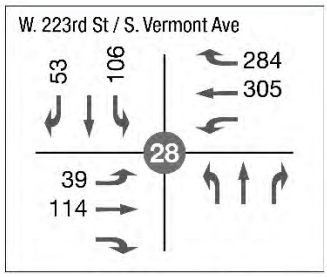
Signalized Intersection Unsignalized Intersection Lane Geometry

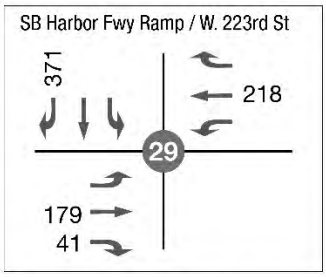


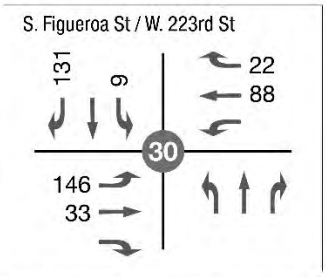


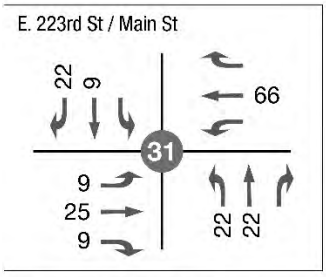


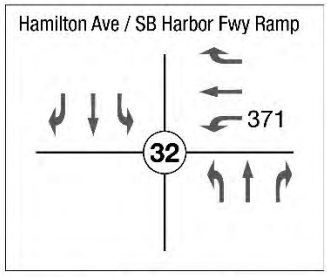


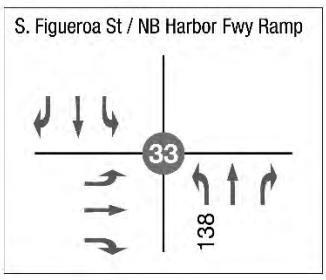


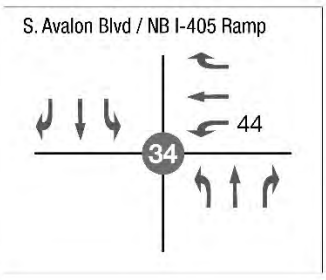


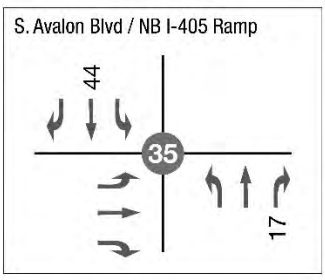


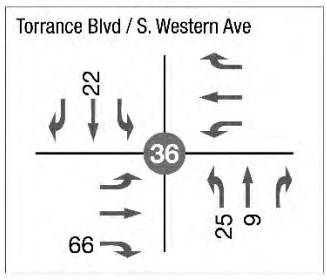












Legend

Signalized Intersection

Unsignalized Intersection

Lane Geometry

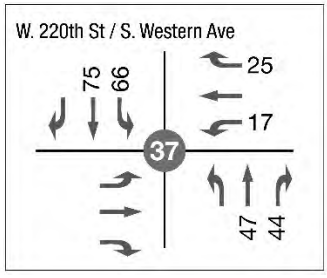
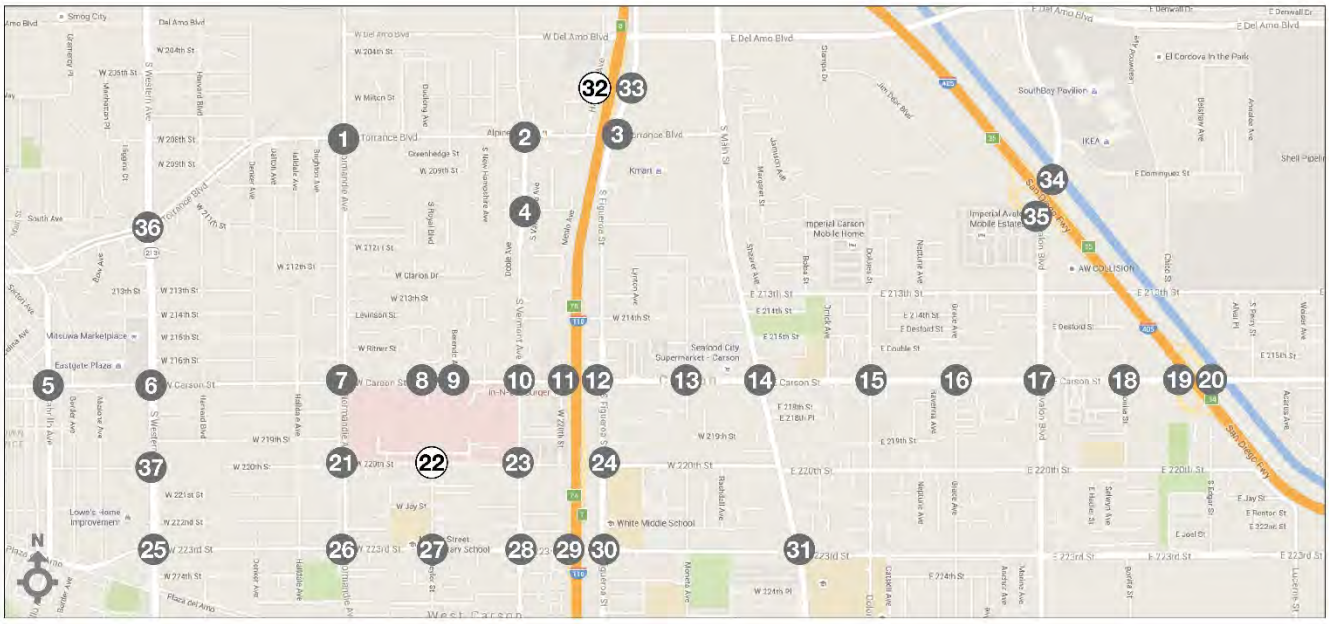
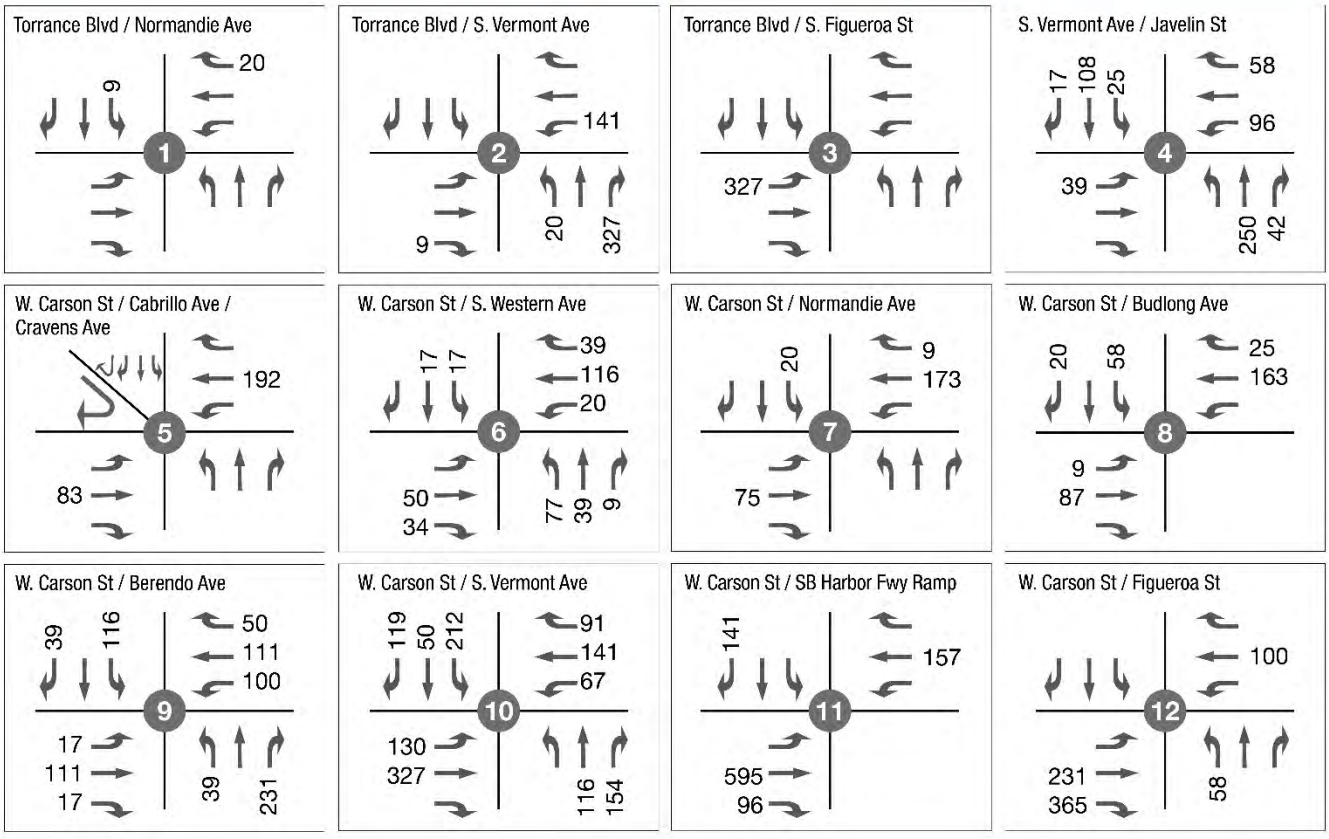


FIGURE 6.4: PROJECT TURNING MOVEMENT VOLUMES – PM PEAK HOUR

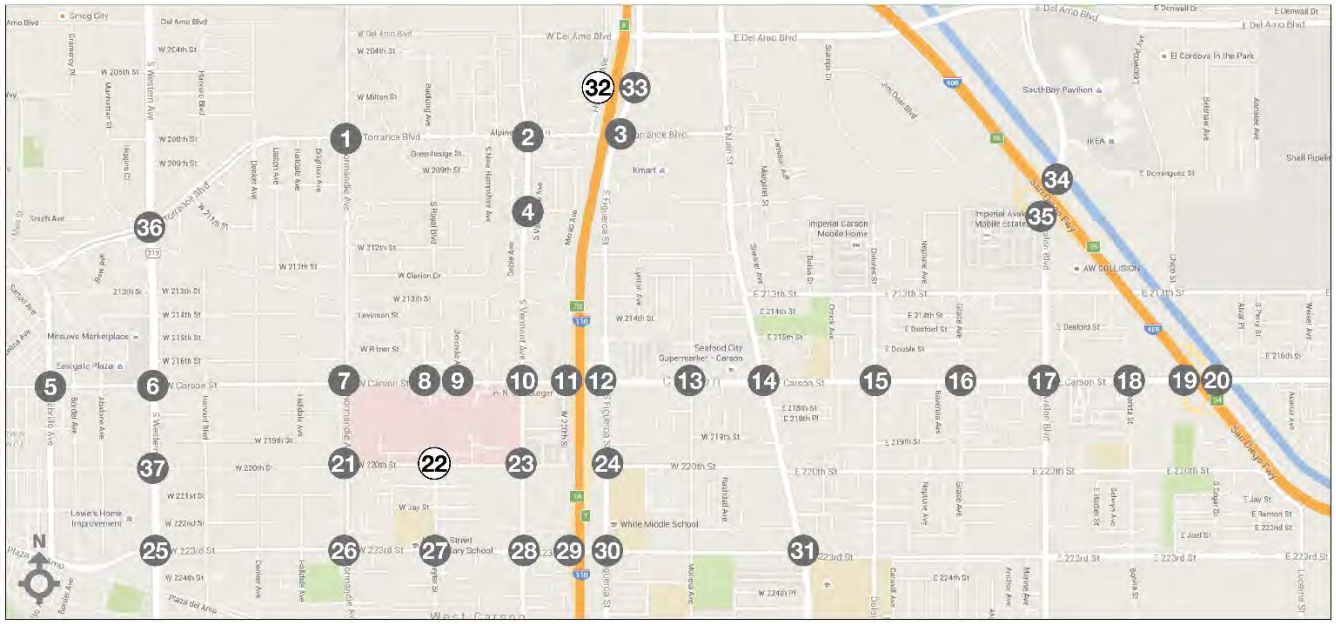


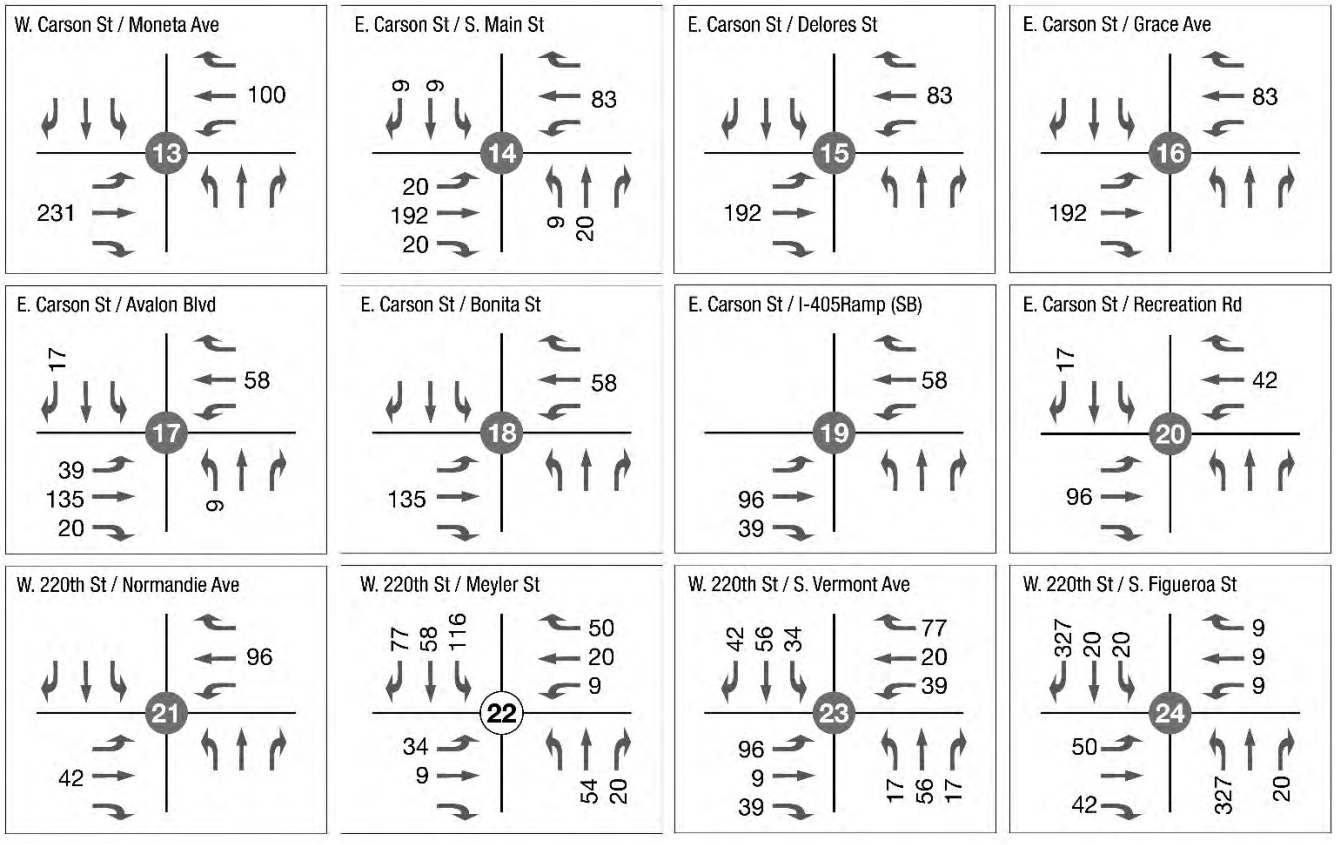


Legend

Signalized Intersection

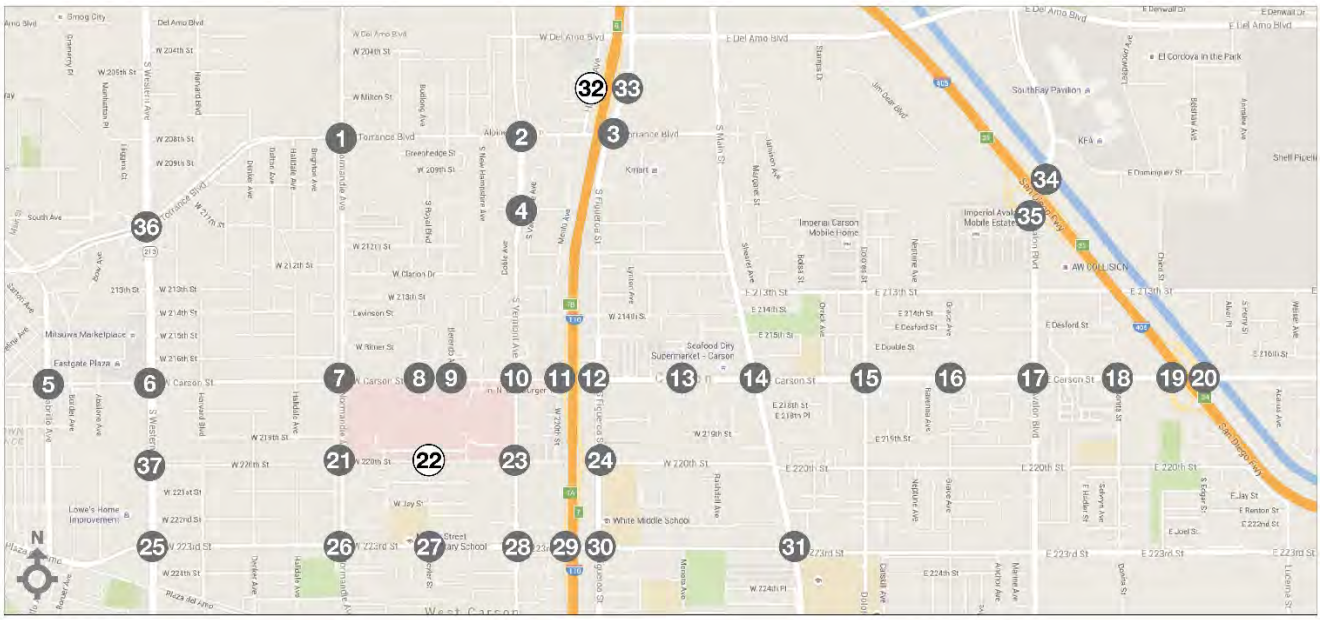
Unsignalized Intersection

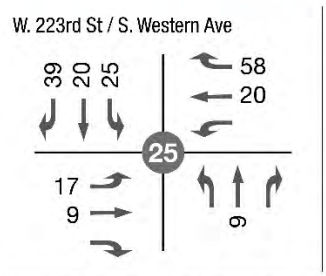


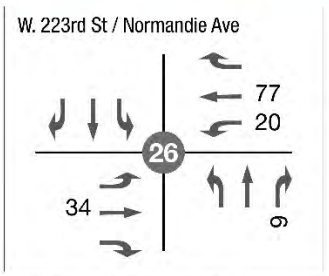


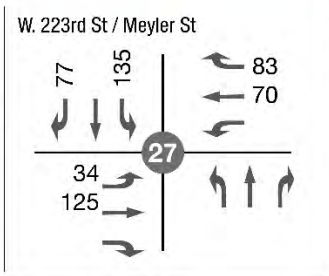
Legend

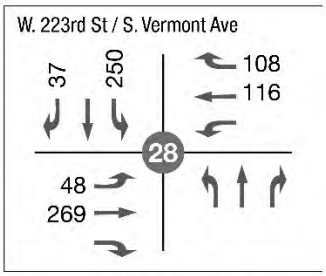
Signalized Intersection Unsignalized Intersection Lane Geometry

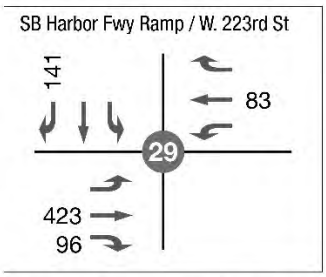


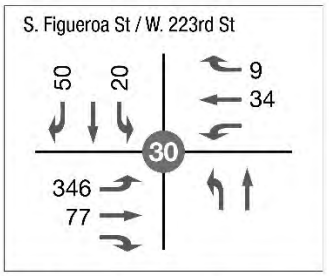


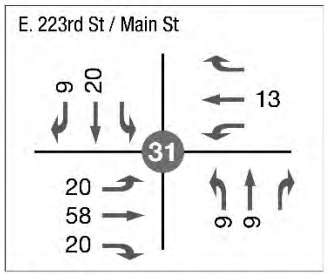


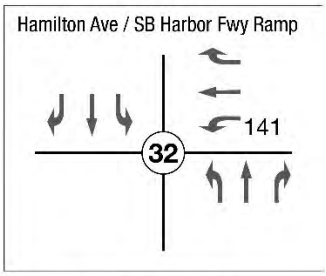


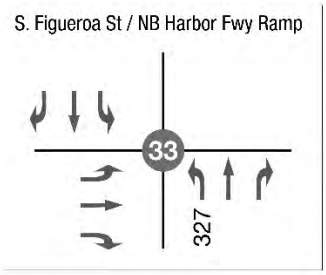


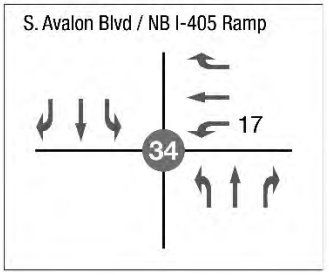


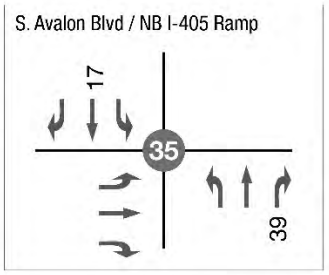


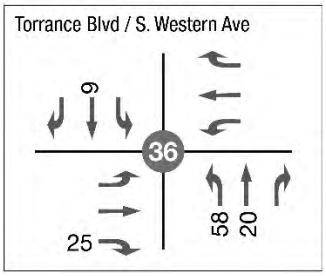










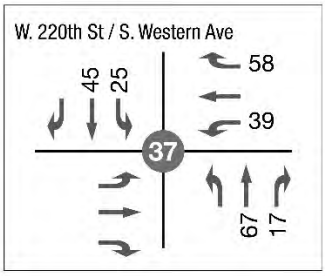


Legend

Signalized Intersection

Unsignalized Intersection

Lane Geometry



7 EXISTING YEAR (2016) WITH PROJECT

Per CEQA noise and air quality guidelines, an analysis of the Existing Year (2016) With Project scenario was conducted. Results for the average daily traffic, queue analysis, and intersection level of service for the Existing Year (2016) With Project scenario are presented in this section.

7.1 AVERAGE DAILY TRAFFIC

The average daily traffic for selected links generated by the project as well as in the Existing Year (2016) No Project and Existing Year (2016) With Project scenarios are presented in Table 7.1 below:

TABLE 7.1: EXISTING YEAR (2016) WITH PROJECT ROADWAY SEGMENT SUMMARY

ID	Segment	Existing Year (2016) No Project	Project ADT	Existing Year (2016) With Project
1	Carson Street west of Berendo Avenue	31,279	5,894	37,173
2	Carson Street east of Vermont Avenue	36,819	17,680	54,499
3	Carson Street east of Figueroa Street	19,337	5,894	25,231
4	Carson Street west of Normandie Avenue	34,261	4,420	38,681
5	Normandie Avenue north of Carson Street	18,173	246	18,419
6	Normandie Avenue south of Carson Street	19,616	0	19,616
7	Vermont Avenue south of Javelin Street	17,330	10,804	28,134
8	Vermont Avenue south of Carson Street	21,151	5,893	27,044
9	Vermont Avenue south of 223rd Street	21,803	5,894	27,697
10	Figueroa Street south of Carson Street	21,275	6,384	27,659

7.2 PEAK HOUR LINK LEVEL OF SERVICE

AM and PM peak hour link analyses are presented in Table 7.2 and 7.3, respectively. The peak hour link volumes are derived from the turning movement volumes; more specifically, the arriving and departing volumes between two intersections that the link of interest joins. In the event that the departures of one intersection did not equal the arrivals of the second intersection, an average of the two volumes was taken to be the link volume experienced. A loss, or even gain, in volumes between two intersections is not uncommon, especially in situations where additional intersections or driveways are present between the intersections of interest. The following links are expected to be operate at LOS E or worse:

- Carson Street from Budlong Avenue to Berendo Avenue
- Carson Street from Vermont Avenue to I-110 SB Ramp
- Carson Street from Western Avenue to Normandie Avenue
- Vermont Avenue from Javelin Street to Carson Street
- Vermont Avenue from 220th Street to 223rd Street
- Figueroa Street from Carson Street to 220th Street

TABLE 7.2: EXISTING YEAR (2016) WITH PROJECT AM PEAK HOUR LINK ANALYSIS

Link ID	Street	Segment		Class	Capacity per Lane	Number of Lanes		Volumes		V/C Ratio		Level of Service	
		From	To			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	W Carson St	Budlong Ave	Berendo Ave	Major	750	2	2	996	1508	0.66	**1.01**	B	**F**
2	W Carson St	Vermont Ave	I-110 SB Ramp	Major	750	3	2	1196	2433	0.53	**1.62**	A	**F**
3	W Carson St	Figueroa St	Moneta Ave	Major	750	2	2	664	995	0.44	0.66	A	B
4	W Carson St	Western Ave	Normandie Ave	Major	750	2	2	1164	1418	0.78	**0.95**	C	**E**
5	Normandie Ave	Torrance Blvd	Carson St	Secondary	600	2	2	936	584	0.78	0.49	C	A
6	Normandie Ave	Carson St	220th St	Secondary	600	2	2	935	635	0.78	0.53	C	A
7	S Vermont Ave	Javelin St	Carson St	Major	750	2	2	1316	1136	0.88	0.76	D	C
8	S Vermont Ave	Carson St	220th St	Major	750	2	2	1201	1153	0.80	0.77	C	C
9	S Vermont Ave	220th St	223rd St	Major	750	2	2	1392	781	**0.93**	0.52	**E**	A
10	S Figueroa St	Carson St	220th St	Major	750	2	2	1110	1031	0.74	0.69	C	B

Bold and shaded = Unacceptable LOS.

TABLE 7.3: EXISTING YEAR (2016) WITH PROJECT PM PEAK HOUR LINK ANALYSIS

Link ID	Street	Segment		Class	Capacity per Lane	Number of Lanes		Volumes		V/C Ratio		Level of Service	
		From	To			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	W Carson St	Budlong Ave	Berendo Ave	Major	750	2	2	1340	1325	0.89	0.88	D	D
2	W Carson St	Vermont Ave	I-110 SB Ramp	Major	750	3	2	2014	1515	0.90	**1.01**	D	**F**
3	W Carson St	Figueroa St	Moneta Ave	Major	750	2	2	945	744	0.63	0.50	B	A
4	W Carson St	Western Ave	Normandie Ave	Major	750	2	2	1471	1322	**0.98**	0.88	**E**	D
5	Normandie Ave	Torrance Blvd	Carson St	Secondary	600	2	2	724	975	0.60	0.81	A	D
6	Normandie Ave	Carson St	220th St	Secondary	600	2	2	654	983	0.55	0.82	A	D
7	S Vermont Ave	Javelin St	Carson St	Major	750	2	2	994	1346	0.66	**0.90**	B	**E**
8	S Vermont Ave	Carson St	220th St	Major	750	2	2	1013	1186	0.68	0.79	B	C
9	S Vermont Ave	220th St	223rd St	Major	750	2	2	703	1409	0.47	**0.94**	A	**E**
10	S Figueroa St	Carson St	220th St	Major	750	2	2	600	1434	0.40	**0.96**	A	**E**

Bold and shaded = Unacceptable LOS.

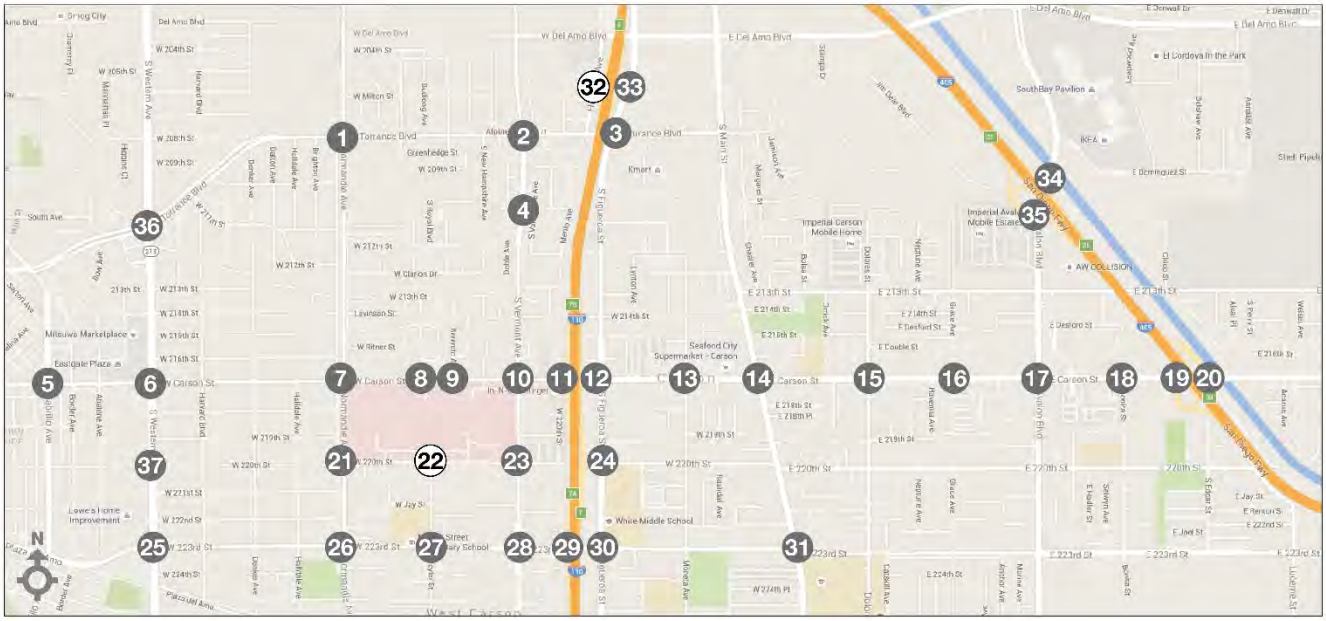
7.3 INTERSECTION LEVEL OF SERVICE

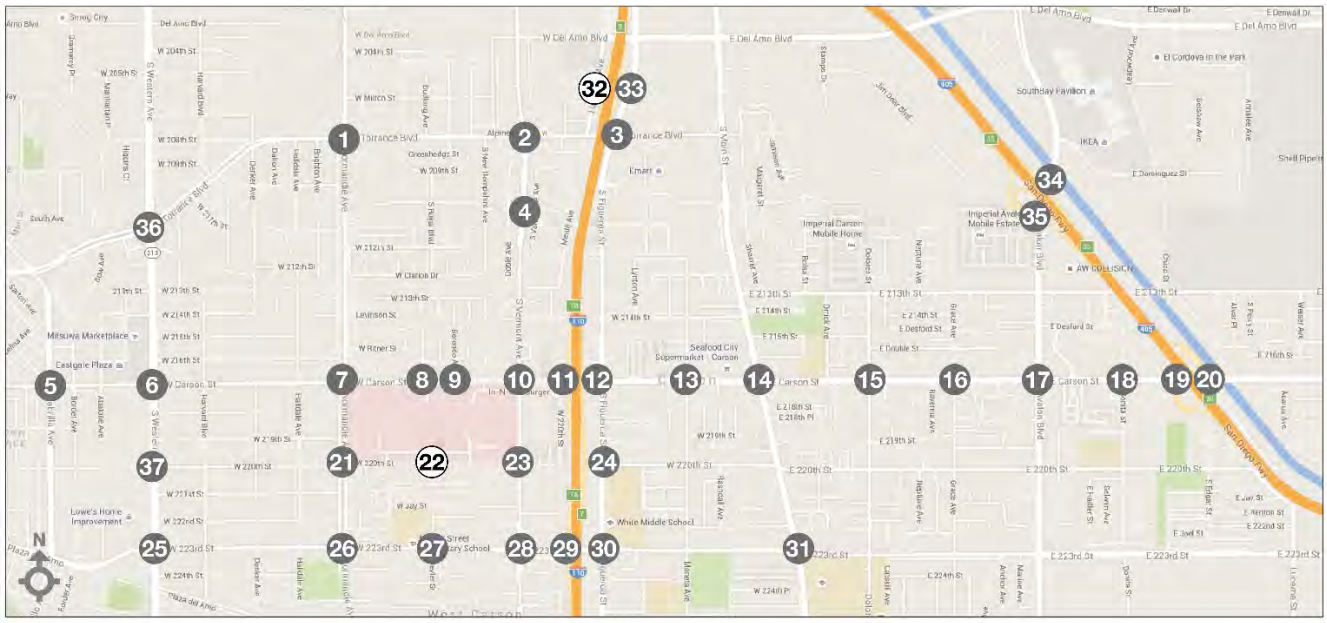
The peak hour turning movement volumes presented in Figure 7.1 and 7.2 were utilized in order to assess intersection performance. A summary of the AM and PM peak hour intersection level of service analysis results for the Existing Year (2016) With Project condition is presented in Table 7.4. Additionally, study intersections were evaluated to determine if they were significantly impacted by the addition of project-generated traffic; summary tables for the AM and PM peak hours are presented in Table 7.5 and Table 7.6, respectively. The significant impact thresholds used to determine the impacts are summarized in Section 3.1.

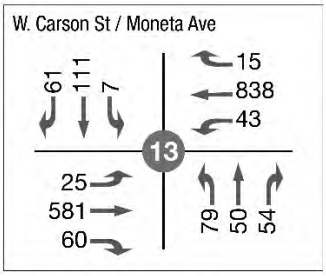
The following fourteen intersections are expected to be significantly impacted due to the addition of project traffic:

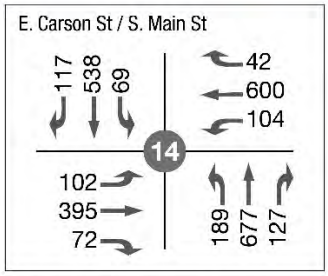
- Normandie Avenue and Torrance Boulevard
- Vermont Avenue and Torrance Boulevard
- Western Avenue and Carson Street
- Normandie Avenue and Carson Street
- Vermont Avenue and Carson Street
- SB I-110 Ramps and Carson Street
- Figueroa Street and 220th Street / NB I-110 Ramps
- Western Avenue and 223rd Street
- Meyler Street and 223rd Street
- Vermont Avenue and 223rd Street
- SB I-110 Ramps and 223rd Street
- Hamilton Avenue and SB I-110 Ramps
- Western Avenue and Torrance Boulevard
- Western Avenue and 220th Street

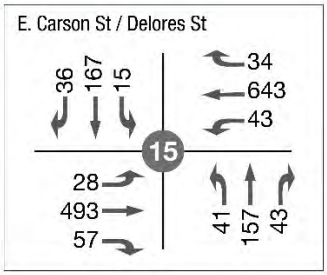
FIGURE 7.1: EXISTING YEAR (2016) WITH PROJECT TURNING MOVEMENT VOLUMES – AM PEAK HOUR

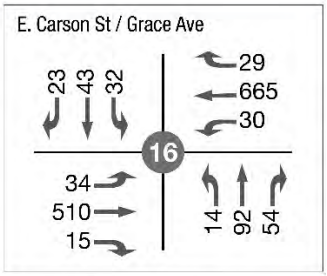


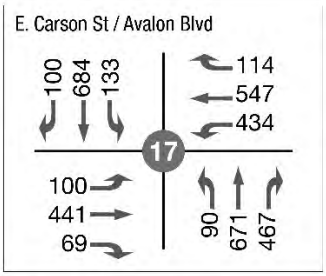


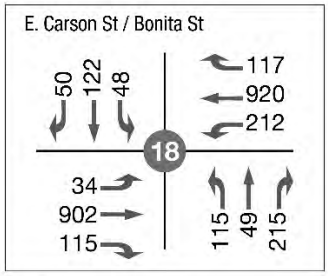


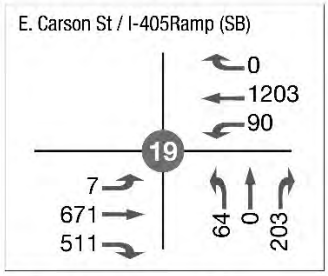


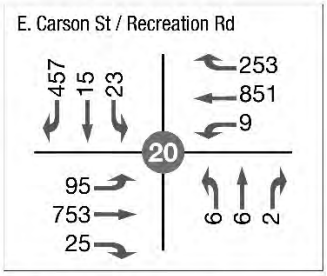


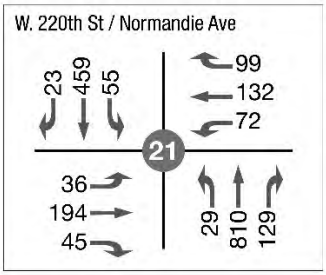


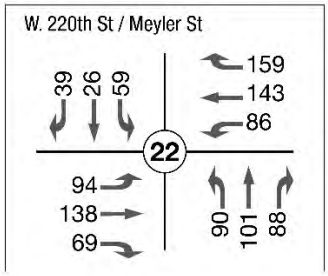


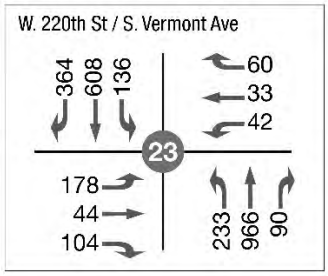


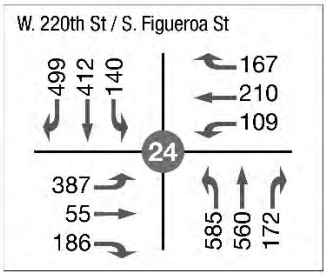






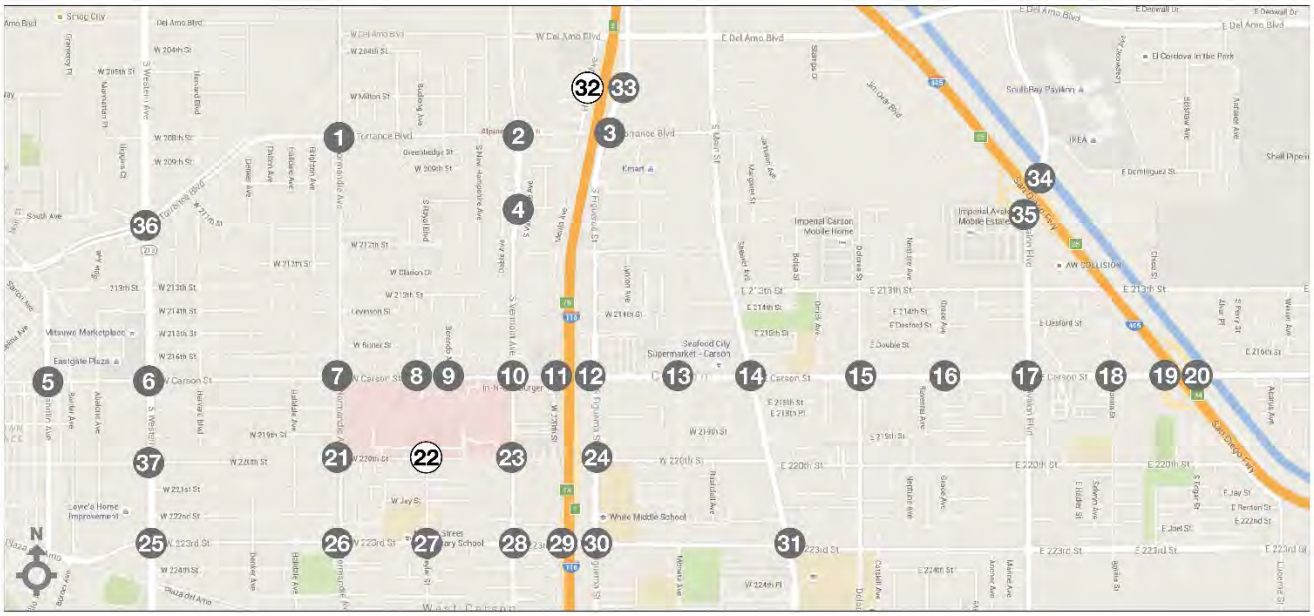


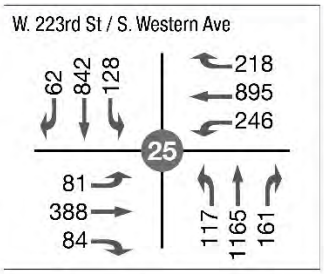


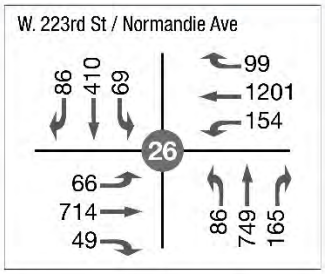


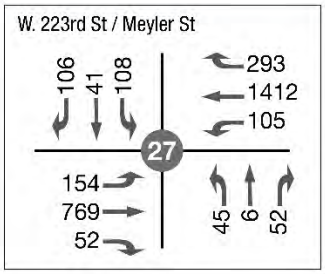
Legend

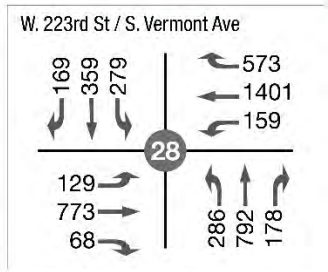
Signalized Intersection Unsignalized Intersection Lane Geometry

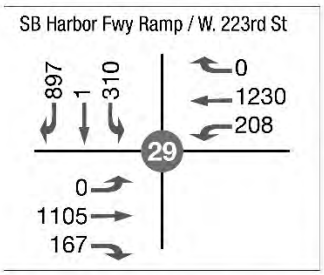


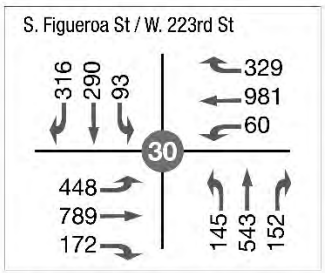


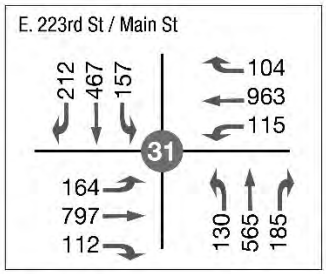


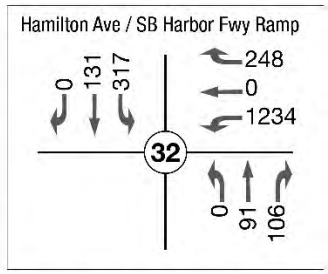


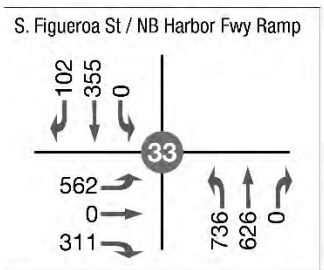


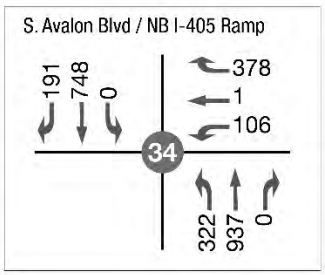


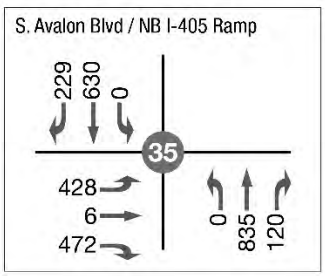


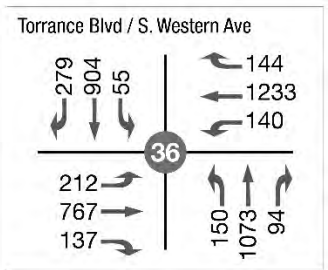












Legend

Signalized Intersection Unsignalized Intersection Lane Geometry

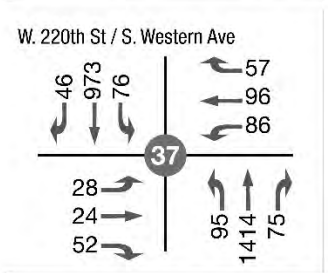
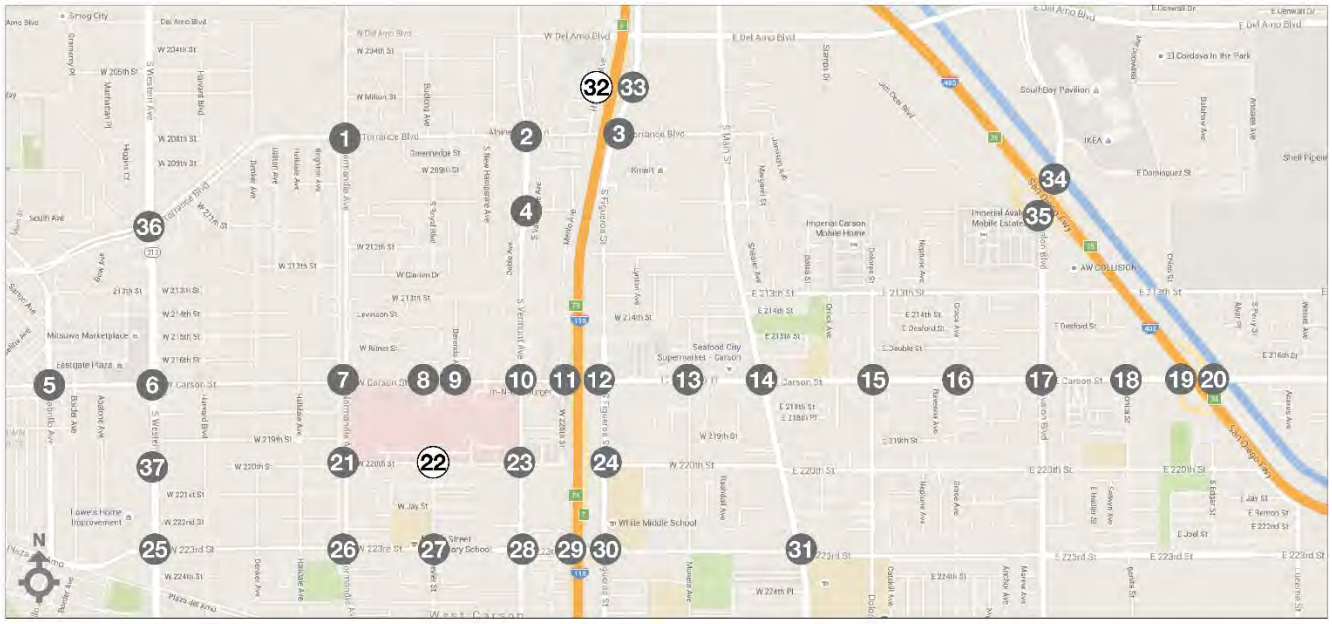
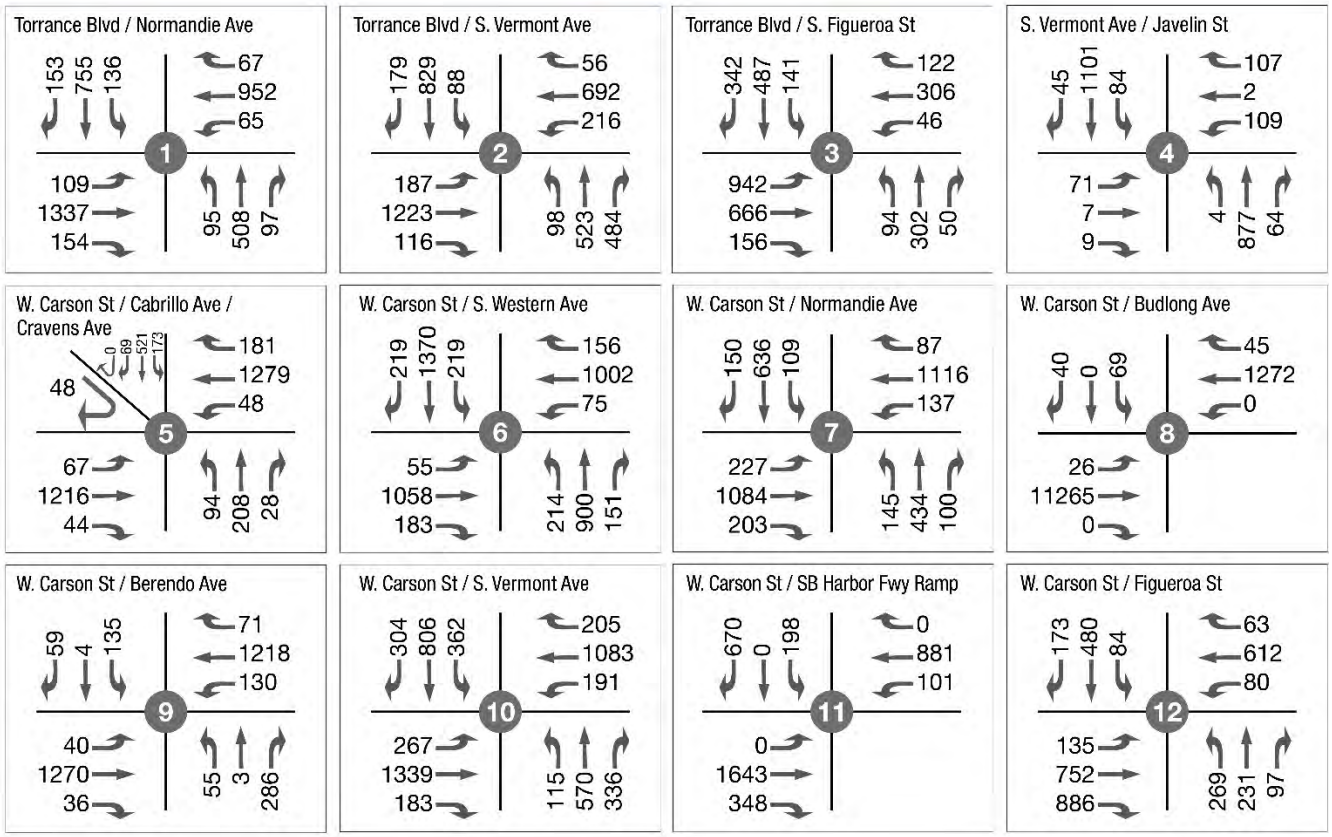


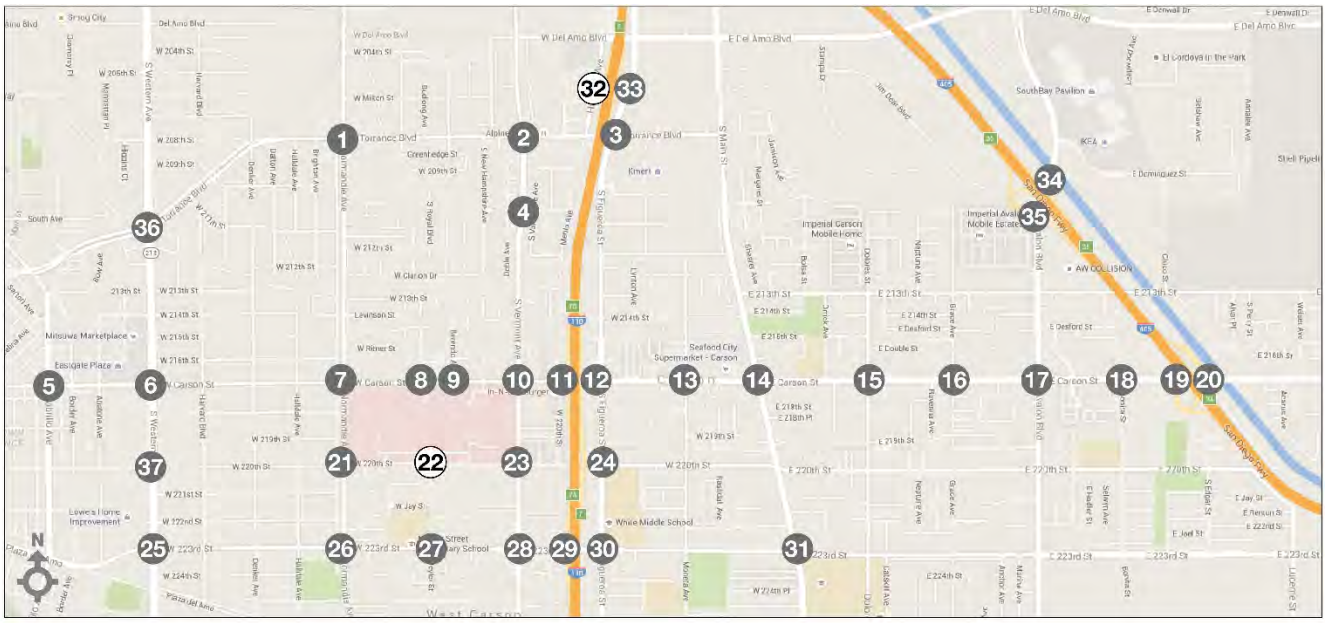
FIGURE 7.2: EXISTING YEAR (2016) WITH PROJECT TURNING MOVEMENT VOLUMES – PM PEAK HOUR

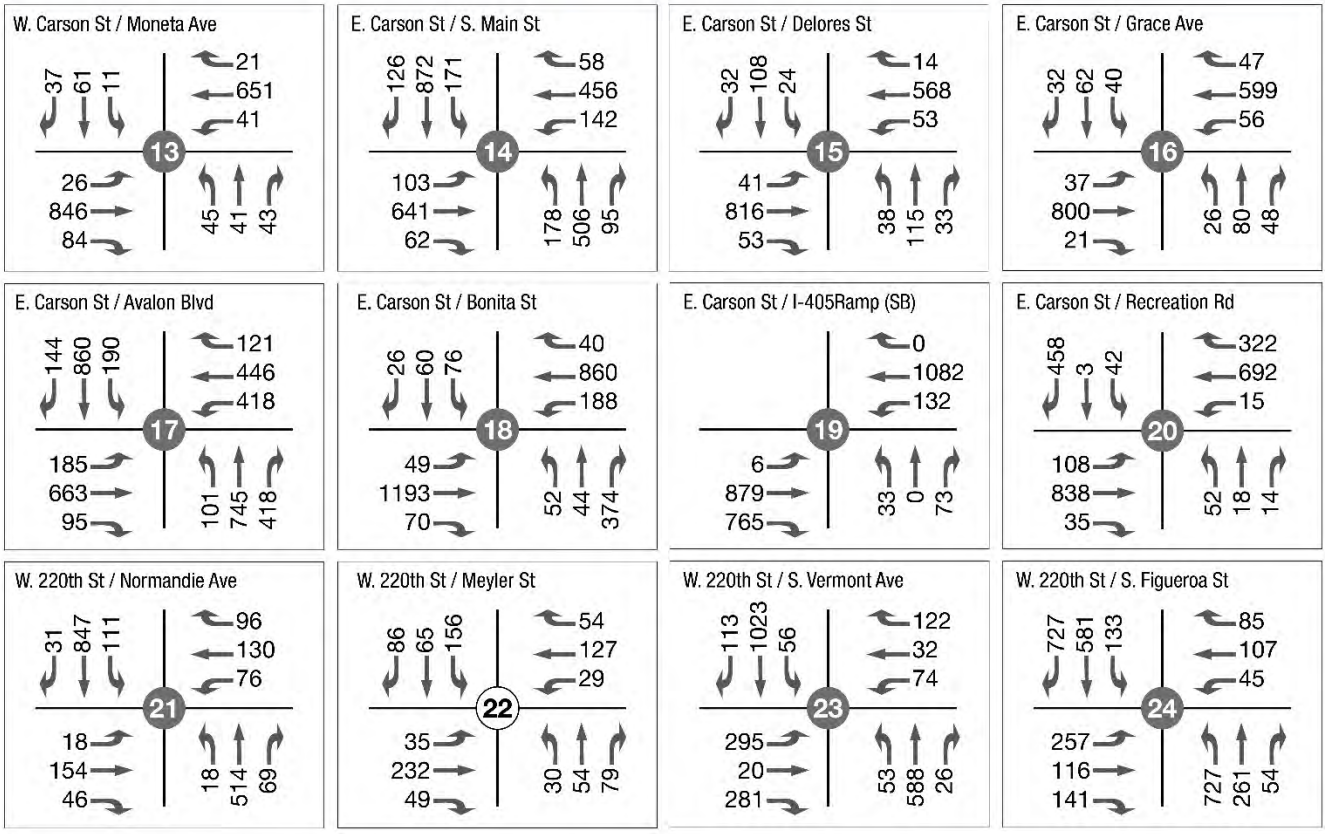




Legend

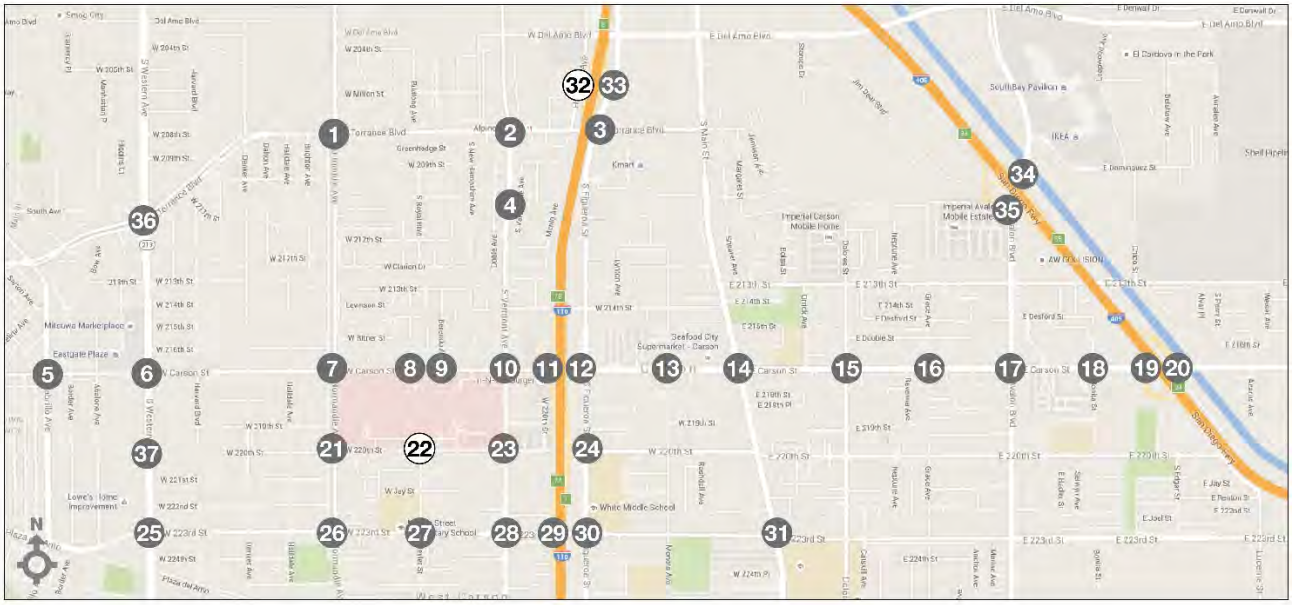
● Signalized Intersection ○ Unsignalized Intersection

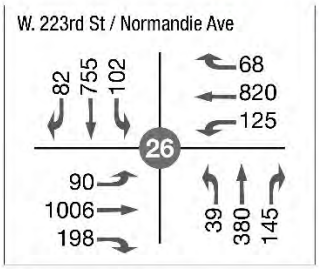


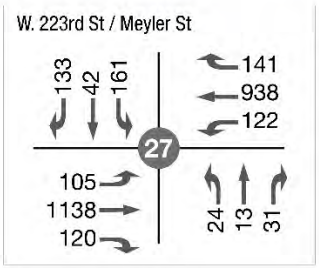


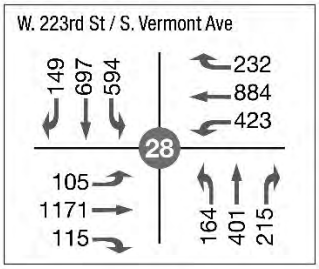
Legend

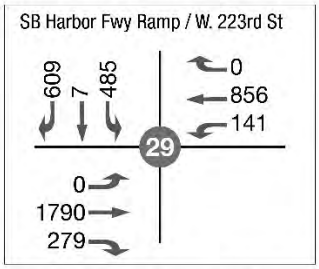
Signalized Intersection Unsignalized Intersection Lane Geometry

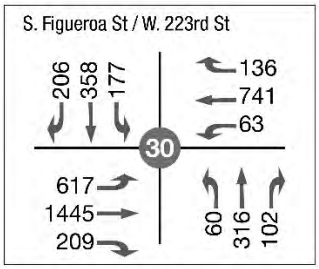


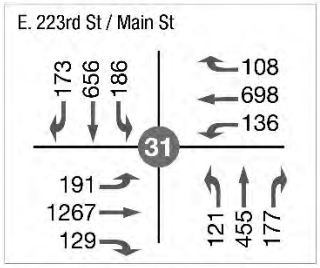


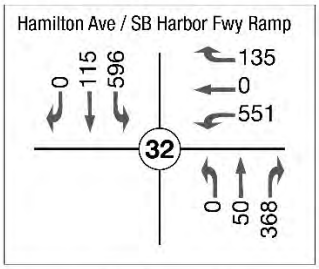


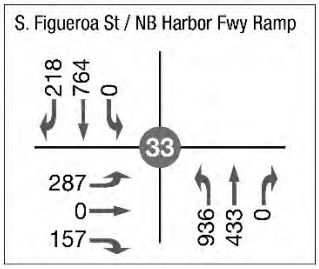


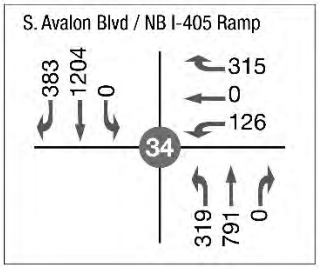


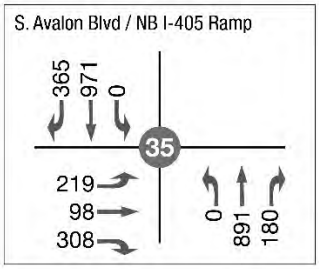


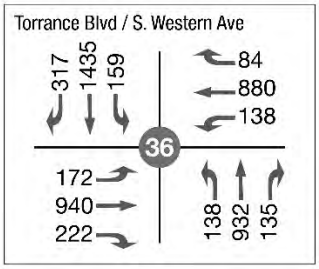












Legend

Signalized Intersection Unsignalized Intersection Lane Geometry

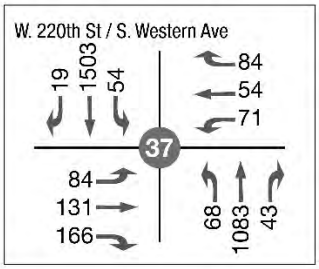


TABLE 7.4: EXISTING YEAR (2016) WITH PROJECT INTERSECTION LOS

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	AM		PM	
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**0.965**	**E**	**0.989**	**E**
		County of Los Angeles	ICU	Signalized	0.796	C	0.850	D
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.888	D	**0.911**	**E**
3	Figueroa / Torrance	City of Carson	ICU	Signalized	0.701	C	0.736	C
4	Vermont / Javelin	County of Los Angeles	ICU	Signalized	0.633	B	0.527	A
5	Carson / Cabrillo / Cravens	City of Torrance	HCM	Signalized	17.4	B	19.9	B
6	Western / Carson	City of Torrance	HCM	Signalized	30.0	C	51.3	D
		City of Los Angeles	CMA	Signalized	**0.930**	**E**	**1.093**	**F**
		Caltrans	HCM	Signalized	30.0	C	**51.3**	**D**
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	0.896	D	**0.962**	**E**
		County of Los Angeles	ICU	Signalized	0.770	C	0.827	D
8	Budlong / Carson	County of Los Angeles	ICU	Signalized	0.512	A	0.482	A
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.627	B	0.741	C
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	**1.026**	**F**	**0.974**	**E**
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	**1.086**	**F**	0.897	D
		Caltrans	HCM	Signalized	**103.0**	**F**	**60.5**	**E**
12	Figueroa / Carson	City of Carson	ICU	Signalized	0.703	C	0.795	C
13	Moneta / Carson	City of Carson	ICU	Signalized	0.401	A	0.363	A
14	Main / Carson	City of Carson	ICU	Signalized	0.452	A	0.554	A
15	Dolores / Carson	City of Carson	ICU	Signalized	0.355	A	0.399	A
16	Grace / Carson	City of Carson	ICU	Signalized	0.349	A	0.406	A
17	Avalon / Carson	City of Carson	ICU	Signalized	0.704	C	0.780	C
18	Bonita / Carson	City of Carson	ICU	Signalized	0.593	A	0.772	C
19	SB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.503	A	0.606	B
		Caltrans	HCM	Signalized	7.4	A	7.3	A
20	NB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.615	B	0.603	B
		Caltrans	HCM	Signalized	13.8	B	13.0	B
21	Normandie / 220th	City of Los Angeles	CMA	Signalized	0.508	A	0.470	A
		County of Los Angeles	ICU	Signalized	0.476	A	0.441	A
22	Meyler / 220th	County of Los Angeles	ICU	AWSC	0.472	A	0.499	A
23	Vermont / 220th	County of Los Angeles	ICU	Signalized	0.538	A	0.613	B
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	**1.153**	**F**	**1.237**	**F**
		Caltrans	HCM	Signalized	**89.9**	**F**	**134.4**	**F**
25	Western / 223rd	City of Torrance	HCM	Signalized	35.5	D	31.3	C
		City of Los Angeles	CMA	Signalized	**0.981**	**E**	**0.941**	**E**
		Caltrans	HCM	Signalized	**35.5**	**D**	31.3	C
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.741	C	0.724	C
		County of Los Angeles	ICU	Signalized	0.694	B	0.678	B
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.817	D	0.694	B
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	**1.119**	**F**	**1.009**	**F**
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	**1.036**	**F**	**1.028**	**F**
		Caltrans	HCM	Signalized	**42.3**	**D**	**64.3**	**E**
30	Figueroa / 223rd	City of Carson	ICU	Signalized	0.875	D	0.827	D
31	Main / 223rd	City of Carson	ICU	Signalized	0.678	B	0.762	C
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.404**	**F**	**1.173**	**F**
		Caltrans	HCM	AWSC	**140.5**	**F**	**139.0**	**F**
33	Figueroa / NB I-110 Ramps	City of Carson	ICU	Signalized	0.671	B	0.743	C
		Caltrans	HCM	Signalized	30.0	C	27.9	C
34	Avalon / NB I-405	City of Carson	ICU	Signalized	0.315	A	0.415	A
		Caltrans	HCM	Signalized	15.9	B	15.2	B
35	Avalon / SB I-405	City of Carson	ICU	Signalized	0.466	A	0.420	A
		Caltrans	HCM	Signalized	12.1	B	10.5	B
36	Western / Torrance	City of Torrance	HCM	Signalized	41.4	D	36.4	D
		City of Los Angeles	CMA	Signalized	0.884	D	0.836	D
		Caltrans	HCM	Signalized	**41.4**	**D**	**36.4**	**D**
37	Western / 220th	City of Torrance	HCM	Signalized	8.9	A	15.0	B
		City of Los Angeles	CMA	Signalized	0.662	B	0.848	D
		Caltrans	HCM	Signalized	8.9	A	15.0	B

AWSC = All Way Stop Control. **Bold and shaded** = Intersection operates at an unacceptable LOS using the methodology listed.

TABLE 7.5: EXISTING YEAR (2016) WITH PROJECT SIGNIFICANT IMPACT TABLE – AM PEAK HOUR

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	EXISTING		W/ PROJECT		Change in V/C or Delay	Significant Impact?
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS		
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**0.946**	**E**	**0.965**	**E**	0.019	Yes
		County of Los Angeles	ICU	Signalized	0.786	C	0.796	C	0.010	No
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.782	C	0.888	D	0.106	Yes
3	Figueroa / Torrance	City of Carson	ICU	Signalized	0.671	B	0.701	C	0.030	No
4	Vermont / Javelin	County of Los Angeles	ICU	Signalized	0.507	A	0.633	B	0.126	No
5	Carson / Cabrillo / Cravens	City of Torrance	HCM	Signalized	16.6	B	17.4	B	0.8	No
6	Western / Carson	City of Torrance	HCM	Signalized	25.0	C	30.0	C	5.0	No
		City of Los Angeles	CMA	Signalized	0.874	D	**0.930**	**E**	0.056	Yes
		Caltrans	HCM	Signalized	25.0	C	30.0	C	5.0	No
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	0.870	D	0.896	D	0.026	Yes
		County of Los Angeles	ICU	Signalized	0.747	C	0.770	C	0.023	No
8	Budlong / Carson	County of Los Angeles	ICU	Signalized	0.450	A	0.512	A	0.062	No
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.456	A	0.627	B	0.171	No
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.758	C	**1.026**	**F**	0.268	Yes
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.724	C	**1.086**	**F**	0.362	Yes
		Caltrans	HCM	Signalized	27.1	C	**103.0**	**F**	75.9	Yes
12	Figueroa / Carson	City of Carson	ICU	Signalized	0.562	A	0.703	C	0.141	No
13	Moneta / Carson	City of Carson	ICU	Signalized	0.319	A	0.401	A	0.082	No
14	Main / Carson	City of Carson	ICU	Signalized	0.378	A	0.452	A	0.074	No
15	Dolores / Carson	City of Carson	ICU	Signalized	0.295	A	0.355	A	0.060	No
16	Grace / Carson	City of Carson	ICU	Signalized	0.281	A	0.349	A	0.068	No
17	Avalon / Carson	City of Carson	ICU	Signalized	0.683	B	0.704	C	0.021	No
18	Bonita / Carson	City of Carson	ICU	Signalized	0.575	A	0.593	A	0.018	No
19	SB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.492	A	0.503	A	0.011	No
		Caltrans	HCM	Signalized	8.6	A	7.4	A	-1.2	No
20	NB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.553	A	0.615	B	0.062	No
		Caltrans	HCM	Signalized	12.0	B	13.8	B	1.8	No
21	Normandie / 220th	City of Los Angeles	CMA	Signalized	0.439	A	0.508	A	0.069	No
		County of Los Angeles	ICU	Signalized	0.412	A	0.476	A	0.064	No
22	Meyler / 220th	County of Los Angeles	HCM	AWSC	0.307	A	0.472	A	0.165	No
23	Vermont / 220th	County of Los Angeles	ICU	Signalized	0.428	A	0.538	A	0.110	No
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	0.871	D	**1.153**	**F**	0.282	Yes
		Caltrans	HCM	Signalized	**52.6**	**D**	**89.9**	**F**	37.3	Yes
25	Western / 223rd	City of Torrance	HCM	Signalized	27.3	C	35.5	D	8.2	No
		City of Los Angeles	CMA	Signalized	0.881	D	**0.981**	**E**	0.100	Yes
		Caltrans	HCM	Signalized	27.3	C	**35.5**	**D**	8.2	Yes
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.729	C	0.741	C	0.012	No
		County of Los Angeles	ICU	Signalized	0.683	B	0.694	B	0.011	No
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.593	A	0.817	D	0.224	Yes
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.845	D	**1.119**	**F**	0.274	Yes
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.748	C	**1.036**	**F**	0.288	Yes
		Caltrans	HCM	Signalized	18.6	B	**42.3**	**D**	23.7	Yes
30	Figueroa / 223rd	City of Carson	ICU	Signalized	0.690	B	0.875	D	0.185	No
31	Main / 223rd	City of Carson	ICU	Signalized	0.645	B	0.678	B	0.033	No
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.032**	**F**	**1.404**	**F**	0.372	Yes
		Caltrans	HCM	AWSC	**49.9**	**E**	**140.5**	**F**	90.6	Yes
33	Figueroa / NB I-110 Ramps	City of Carson	ICU	Signalized	0.617	B	0.671	B	0.054	No
		Caltrans	HCM	Signalized	26.5	C	30.0	C	3.5	No
34	Avalon / NB I-405	City of Carson	ICU	Signalized	0.301	A	0.315	A	0.014	No
		Caltrans	HCM	Signalized	15.9	B	15.9	B	0.0	No
35	Avalon / SB I-405	City of Carson	ICU	Signalized	0.460	A	0.466	A	0.006	No
		Caltrans	HCM	Signalized	11.8	B	12.1	B	0.3	No
36	Western / Torrance	City of Torrance	HCM	Signalized	40.9	D	41.4	D	0.5	No
		City of Los Angeles	CMA	Signalized	0.88	D	0.884	D	0.004	No
		Caltrans	HCM	Signalized	**40.9**	**D**	**41.4**	**D**	0.5	No
37	Western / 220th	City of Torrance	HCM	Signalized	7.2	A	8.9	A	1.7	No
		City of Los Angeles	CMA	Signalized	0.591	A	0.662	B	0.071	No
		Caltrans	HCM	Signalized	7.2	A	8.9	A	1.7	No

AWSC = All Way Stop Control. **Bold and shaded** = Intersection operates at an unacceptable LOS using the methodology listed.

TABLE 7.6: EXISTING YEAR (2016) WITH PROJECT SIGNIFICANT IMPACT TABLE – PM PEAK HOUR

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	EXISTING		W/ PROJECT		Change in V/C or Delay	Significant Impact?
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS		
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**0.989**	**E**	**0.989**	**E**	0.000	No
		County of Los Angeles	ICU	Signalized	0.850	D	0.850	D	0.000	No
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.770	C	**0.911**	**E**	0.141	Yes
3	Figueroa / Torrance	City of Carson	ICU	Signalized	0.669	B	0.736	C	0.067	No
4	Vermont / Javelin	County of Los Angeles	ICU	Signalized	0.373	A	0.527	A	0.154	No
5	Carson / Cabrillo / Cravens	City of Torrance	HCM	Signalized	18.0	B	19.9	B	1.9	No
6	Western / Carson	City of Torrance	HCM	Signalized	37.4	D	51.3	D	13.9	No
		City of Los Angeles	CMA	Signalized	**0.999**	**E**	**1.093**	**F**	0.094	Yes
		Caltrans	HCM	Signalized	37.4	D	**51.3**	**D**	13.900	No
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	0.900	D	**0.962**	**E**	0.062	Yes
		County of Los Angeles	ICU	Signalized	0.773	C	0.827	D	0.054	Yes
8	Budlong / Carson	County of Los Angeles	ICU	Signalized	0.388	A	0.482	A	0.094	No
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.427	A	0.741	C	0.314	No
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.702	C	**0.974**	**E**	0.272	Yes
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.665	B	0.897	D	0.232	Yes
		Caltrans	HCM	Signalized	20.9	C	**60.5**	**E**	39.6	Yes
12	Figueroa / Carson	City of Carson	ICU	Signalized	0.567	A	0.795	C	0.228	No
13	Moneta / Carson	City of Carson	ICU	Signalized	0.291	A	0.363	A	0.072	No
14	Main / Carson	City of Carson	ICU	Signalized	0.501	A	0.554	A	0.053	No
15	Dolores / Carson	City of Carson	ICU	Signalized	0.339	A	0.399	A	0.060	No
16	Grace / Carson	City of Carson	ICU	Signalized	0.346	A	0.406	A	0.060	No
17	Avalon / Carson	City of Carson	ICU	Signalized	0.732	C	0.780	C	0.048	No
18	Bonita / Carson	City of Carson	ICU	Signalized	0.729	C	0.772	C	0.043	No
19	SB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.582	A	0.606	B	0.024	No
		Caltrans	HCM	Signalized	7.1	A	7.3	A	0.2	No
20	NB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.579	A	0.603	B	0.024	No
		Caltrans	HCM	Signalized	12.4	B	13.0	B	0.6	No
21	Normandie / 220th	City of Los Angeles	CMA	Signalized	0.442	A	0.470	A	0.028	No
		County of Los Angeles	ICU	Signalized	0.414	A	0.441	A	0.027	No
22	Meyler / 220th	County of Los Angeles	HCM	AWSC	0.315	A	0.499	A	0.184	No
23	Vermont / 220th	County of Los Angeles	ICU	Signalized	0.498	A	0.613	B	0.115	No
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	0.786	C	**1.237**	**F**	0.451	Yes
		Caltrans	HCM	Signalized	**46.1**	**D**	**134.4**	**F**	88.3	Yes
25	Western / 223rd	City of Torrance	HCM	Signalized	29.4	C	31.3	C	1.9	No
		City of Los Angeles	CMA	Signalized	0.930	E	**0.941**	**E**	0.011	Yes
		Caltrans	HCM	Signalized	29.4	C	31.3	C	1.9	No
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.699	B	0.724	C	0.025	No
		County of Los Angeles	ICU	Signalized	0.655	B	0.678	B	0.023	No
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.523	A	0.694	B	0.171	No
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.769	C	**1.009**	**F**	0.240	Yes
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.818	D	**1.028**	**F**	0.210	Yes
		Caltrans	HCM	Signalized	28.4	C	**64.3**	**E**	35.9	Yes
30	Figueroa / 223rd	City of Carson	ICU	Signalized	0.664	B	0.827	D	0.163	No
31	Main / 223rd	City of Carson	ICU	Signalized	0.732	C	0.762	C	0.030	No
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.115**	**F**	**1.173**	**F**	0.058	Yes
		Caltrans	HCM	AWSC	**128.4**	**F**	**139.0**	**F**	10.6	Yes
33	Figueroa / NB I-110 Ramps	City of Carson	ICU	Signalized	0.615	B	0.743	C	0.128	No
		Caltrans	HCM	Signalized	20.9	C	27.9	C	7.0	No
34	Avalon / NB I-405	City of Carson	ICU	Signalized	0.410	A	0.415	A	0.005	No
		Caltrans	HCM	Signalized	15.1	B	15.2	B	0.1	No
35	Avalon / SB I-405	City of Carson	ICU	Signalized	0.408	A	0.420	A	0.012	No
		Caltrans	HCM	Signalized	10.3	B	10.5	B	0.2	No
36	Western / Torrance	City of Torrance	HCM	Signalized	34.1	C	36.4	D	2.3	No
		City of Los Angeles	CMA	Signalized	0.823	D	0.836	D	0.013	No
		Caltrans	HCM	Signalized	34.1	C	**36.4**	**D**	2.3	Yes
37	Western / 220th	City of Torrance	HCM	Signalized	14.6	B	15.0	B	0.4	No
		City of Los Angeles	CMA	Signalized	0.807	D	0.848	D	0.041	Yes
		Caltrans	HCM	Signalized	14.6	B	15.0	B	0.4	No

AWSC = All Way Stop Control. **Bold and shaded** = Intersection operates at an unacceptable LOS using the methodology listed.

7.4 CMP MONITORING STATION ANALYSIS

The CMP monitoring station analysis results for the AM and PM peak hours are summarized in Table 7.7 and Table 7.8, respectively. The analysis was performed in accordance with the methodology outlined in Section 3. An unacceptable LOS (LOS F) is observed at the following locations:

- I-405 at Santa Fe Avenue
- I-405 north of Inglewood Avenue

No significant impacts are expected due to the addition of project traffic.

7.5 FREEWAY MAINLINE ANALYSIS

The freeway mainline analysis results for the AM and PM peak hours are summarized in Table 7.9 and Table 7.10, respectively. The analysis was conducted using the methodology and settings outlined in Section 3.4.2. All freeway segments are anticipated to operate at an unacceptable level of service (LOS D or worse) with the exception of:

- SR-91 at Avalon Boulevard
- I-110 at SR-1 (Pacific Coast Highway)

A significant impact is expected to occur at the following locations due to the onset of project traffic:

- I-405 at I-710

7.6 FREEWAY OFF-RAMP QUEUE ANALYSIS

Per Caltrans traffic study guidelines, a queue analysis for freeway off-ramps at intersections of interest is to be provided. Table 7.11 summarizes the storage capacities and queue lengths expected for these off-ramps. All freeway off-ramps are expected to provide sufficient storage capacity such that the 85% storage capacity is not exceeded with the addition of project traffic with the exception of:

- I-110 Southbound Off-Ramp at Carson Street
- I-110 Southbound Off-Ramp at Hamilton Avenue

7.7 VEHICLE MILES TRAVELED (VMT) ANALYSIS

VMT calculations were prepared based on the land use characteristics in the Existing Year (2016) With Project scenario; project-related changes in land uses were calculated using the land use existing and proposed zoning outlined in Section 2.2 and Section 2.3, respectively. A summary of the following scenarios is presented in Table 7.12 and Table 7.13.

- Existing Year (2016) w/ Project
- Existing Year (2016) w/ Project + Pass-By and Internal Capture Reductions

TABLE 7.7: EXISTING YEAR (2016) WITH PROJECT CMP MONITORING STATION ANALYSIS – AM PEAK HOUR

ID	Freeway	Segment	Station	Direction	Lanes	Capacity	Existing Year (2016) No Project			Project Trips	Existing Year (2016) With Project			Change in V/C	Significant Impact?
							Peak Hour Volume	V/C	LOS		Peak Hour Volume	V/C	LOS		
1	I-110	at Wilmington Boulevard s/o C Street	1045	NB	4	8,000	4,348	0.544	C	218	4,566	0.571	C	0.027	No
				SB	4	8,000	3,176	0.397	B	81	3,257	0.407	B	0.010	No
2	I-110	at Manchester Boulevard	1046	NB	6	12,000	8,479	0.707	C	122	8,601	0.717	C	0.010	No
				SB	6	12,000	10,330	0.861	D	327	10,657	0.888	D	0.027	No
3	I-405	at Santa Fe Avenue	1066	NB	5	10,000	10,365	**1.037**	**F(0)**	218	10,583	**1.058**	**F(0)**	0.022	No
				SB	5	10,000	12,090	**1.209**	**F(0)**	81	12,171	**1.217**	**F(0)**	0.008	No
4	I-405	south of I-110	1067	NB	5	10,000	9,065	0.907	D	446	9,511	0.951	E	0.045	No
				SB	5	10,000	7,438	0.744	C	1,198	8,636	0.864	D	0.120	No
5	I-405	north of Inglewood Avenue	1068	NB	5	10,000	8,075	0.808	D	122	8,197	0.820	D	0.012	No
				SB	5	10,000	10,608	**1.061**	**F(0)**	327	10,935	**1.094**	**F(0)**	0.033	No
6	SR-91	east of Alameda Street/Santa Fe Avenue	1033	EB	6	12,000	7,978	0.665	C	122	8,100	0.675	C	0.010	No
				WB	6	12,000	5,800	0.483	B	327	6,127	0.511	B	0.027	No

Bold and shaded = Unacceptable evel of service (LOS F).

TABLE 7.8: EXISTING YEAR (2016) WITH PROJECT CMP MONITORING STATION ANALYSIS – PM PEAK HOUR

ID	Freeway	Segment	Station	Direction	Lanes	Capacity	Existing Year (2016) No Project			Project Trips	Existing Year (2016) With Project			Change in V/C	Significant Impact?
							Peak Hour Volume	V/C	LOS		Peak Hour Volume	V/C	LOS		
1	I-110	at Wilmington Boulevard s/o C Street	1045	NB	4	8,000	2,921	0.365	B	83	3,004	0.376	B	0.010	No
				SB	4	8,000	4,436	0.555	C	192	4,628	0.579	C	0.024	No
2	I-110	at Manchester Boulevard	1046	NB	6	12,000	9,321	0.777	D	288	9,609	0.801	D	0.024	No
				SB	6	12,000	11,375	0.948	E	124	11,499	0.958	E	0.010	No
3	I-405	at Santa Fe Avenue	1066	NB	5	10,000	9,313	0.931	E	83	9,396	0.940	E	0.008	No
				SB	5	10,000	15,074	**1.507**	**F(3)**	192	15,266	**1.527**	**F(3)**	0.019	No
4	I-405	south of I-110	1067	NB	5	10,000	8,250	0.825	D	1,055	9,305	0.931	E	0.106	No
				SB	5	10,000	9,408	0.941	E	454	9,862	0.986	E	0.045	No
5	I-405	north of Inglewood Avenue	1068	NB	5	10,000	10,015	**1.002**	**F(0)**	288	10,303	**1.030**	**F(0)**	0.029	No
				SB	5	10,000	10,390	**1.039**	**F(0)**	124	10,514	**1.051**	**F(0)**	0.012	No
6	SR-91	east of Alameda Street/Santa Fe Avenue	1033	EB	6	12,000	7,618	0.635	C	288	7,906	0.659	C	0.024	No
				WB	6	12,000	6,138	0.512	B	124	6,262	0.522	B	0.010	No

Bold and shaded = Unacceptable evel of service (LOS F).

TABLE 7.9: EXISTING YEAR (2016) WITH PROJECT FREEWAY MAINLINE ANALYSIS SUMMARY – AM PEAK HOUR

ID	Freeway	Location	California Postmile	Absolute Postmile	Direction	Existing Year (2016) No Project		Project Trips	Existing Year (2016) With Project		Change in Density	Project Impact?
						Density (pc/mi/ln)	LOS		Density (pc/mi/ln)	LOS		
1	SR-91	at Avalon Boulevard	7.55	11.5	EB	14.1	B	122	14.5	B	0.4	No
					WB	23.9	C	327	25	C	1.1	No
2	I-110	at SR-1 (Pacific Coast Highway)	4.17	4.1	NB	24.4	C	218	25.5	C	1.1	No
					SB	17.3	B	81	17.6	B	0.3	No
3	I-110	at Sepulveda Boulevard	5.6	5.5	NB	**30.7**	**D**	218	**32.2**	**D**	1.5	No
					SB	20.7	C	81	21.1	C	0.4	No
4	I-110	at El Segundo Boulevard	12.86	12.8	NB	23.6	C	122	24.1	C	0.5	No
					SB	**30.3**	**D**	327	**31.8**	**D**	1.5	No
5	I-405	at I-710	7.63	31.4	NB	**45.7**	**F**	218	**47.9**	**F**	2.2	**Yes**
					SB	**37.9**	**E**	81	**38.5**	**E**	0.6	No
6	I-405	south of I-110 (Carson Scales)	11.82	35.6	NB	25	C	218	25.8	C	0.8	No
					SB	19.8	C	81	20.1	C	0.3	No
7	I-405	at Western Avenue	14.34	38.1	NB	**26.2**	**D**	122	**26.7**	**D**	0.5	No
					SB	**27.5**	**D**	327	**29.1**	**D**	1.6	No

TABLE 7.10: EXISTING YEAR (2016) WITH PROJECT FREEWAY MAINLINE ANALYSIS SUMMARY – PM PEAK HOUR

ID	Freeway	Location	California Postmile	Absolute Postmile	Direction	Existing Year (2016) No Project		Project Trips	Existing Year (2016) With Project		Change in Density	Project Impact?
						Density (pc/mi/ln)	LOS		Density (pc/mi/ln)	LOS		
1	SR-91	at Avalon Boulevard	7.55	11.5	EB	21.1	C	288	22	C	0.9	No
					WB	16.5	B	124	16.8	C	0.3	No
2	I-110	at SR-1 (Pacific Coast Highway)	4.17	4.1	NB	16.1	B	83	16.5	B	0.4	No
					SB	24.1	C	192	25.1	C	1	No
3	I-110	at Sepulveda Boulevard	5.6	5.5	NB	19.5	C	83	19.9	D	0.4	No
					SB	29.0	C	192	**30.2**	**D**	1.2	No
4	I-110	at El Segundo Boulevard	12.86	12.8	NB	22.8	C	288	23.7	C	0.9	No
					SB	**29.7**	**D**	124	**30.2**	**D**	0.5	No
5	I-405	at I-710	7.63	31.4	NB	**35.9**	**E**	83	**36.4**	**D**	0.5	No
					SB	**70.9**	**F**	192	**75**	**F**	4.1	**Yes**
6	I-405	south of I-110 (Carson Scales)	11.82	35.6	NB	22.3	C	83	22.5	C	0.2	No
					SB	**26.2**	**D**	192	**27**	**D**	0.8	No
7	I-405	at Western Avenue	14.34	38.1	NB	**28.1**	**D**	288	**29.5**	**D**	1.4	No
					SB	**31.9**	**D**	124	**32.6**	**D**	0.7	No

Bold and shaded = Unacceptable evel of service (LOS D or worse). Pc/mi/ln = passenger-car per mile per lane.

TABLE 7.11: EXISTING YEAR (2016) WITH PROJECT QUEUE ANALYSIS

ID	Ramp	Cross Street	Ramp Length (ft) [a]	85% Ramp Length (ft)	Ramp Turn Lanes at Intersection			AM Queue		PM Queue		Queue Exceeds 85% Storage?	
					Lanes	Movement	Length [a]	Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	AM	PM
11	I-110 Southbound Off-Ramp	Carson Street	980	830	2	Left	980	57	842	851	851	Yes	Yes
						Right	380	842		182			
19	I-405 Southbound Off-Ramp	Carson Street	1,100	940	2	Left	660	41	41	28	28	No	No
						Right	1,100	41		19			
20	I-405 Northbound Off-Ramp	Carson Street	1,200	1,020	2	Through/Left	1,200	26	163	30	144	No	No
						Right	620	163		144			
24	I-110 Northbound Off-Ramp	Figueroa Street	1,150	980	2	Through/Left	1,150	739	739	688	688	No	No
						Right	530	108		92			
29	I-110 Southbound Off-Ramp	223rd Street	935	800	2	Through/Left	935	545	545	759	759	No	No
						Right/Through	405	545		759			
32	I-110 Southbound Off-Ramp	Hamilton Avenue	890	760	3	Left	890	800	800	213	213	Yes	No
						Left	355	800		118			
						Right	40	38		118			
33	I-110 Northbound Off-Ramp	Figueroa Street	880	750	2	Left	880	432	432	210	210	No	No
						Right/Left	340	230		90			
34	I-405 Northbound Off-Ramp	Avalon Boulevard	980	830	3	Left	980	38	219	45	133	No	No
						Through/Left	320	40		46			
						Right	320	219		133			
35	I-405 Southbound Off-Ramp	Avalon Boulevard	390	330	5	Left	390	66	215	43	128	No	No
						Left	390	66		43			
						Through	390	3		23			
						Through	390	3		23			
						Right	240	215		128			

[a] = Length measured from scaled aerial images.

TABLE 7.12: EXISTING YEAR (2016) WITH PROJECT VMT SUMMARY

Land Use	Average Daily Trip Rate			Annual VMT	Population / Employees	Annual VMT Per Capita
	Weekday	Saturday	Sunday			
Apartments (Mid-Rise)	17,536.05	16,850.43	15,452.82	**58,571,693**	**7,397**	**7,918**
General Light Industry	3,986.49	754.97	388.93	**13,333,138**	**548**	**24,331**
General Office Building	14,725.94	3,284.30	1,401.83	**36,041,610**	**2,741**	**13,149**
Hospital	9,870.98	7,601.10	6,652.83	**35,228,760**	**5,500**	**6,405**
Single Family Housing	8,939.28	9,305.49	8,094.18	**30,313,101**	**2,443**	**12,408**
Strip Mall	33,430.13	31,710.35	15,410.14	**58,238,756**	**906**	**64,281**
Unrefrigerated Warehouse - No Rail	0.00	0.00	0.00	**0**	**0**	-
Total	**88,488.87**	**69,506.64**	**47,400.73**	**231,727,058**	**19,535**	**128,492**

TABLE 7.13: EXISTING YEAR (2016) WITH PROJECT + PASS-BY, INTERNAL CAPTURE, AND TDM REDUCTIONS VMT SUMMARY

Land Use	Average Daily Trip Rate			Annual VMT	Population / Employees	Annual VMT Per Capita
	Weekday	Saturday	Sunday			
Apartments (Mid-Rise)	13,437.88	12,912.48	11,841.50	**44,883,488**	**7,397**	**6,068**
General Light Industry	3,866.90	732.32	377.26	**12,933,144**	**548**	**23,601**
General Office Building	11,168.15	2,490.82	1,063.15	**27,333,957**	**2,741**	**9,972**
Hospital	9,673.56	7,449.08	6,519.77	**34,524,185**	**5,500**	**6,277**
Single Family Housing	6,850.17	7,130.80	6,202.57	**23,228,930**	**2,443**	**9,508**
Strip Mall	22,448.33	21,293.50	10,347.91	**39,107,324**	**906**	**43,165**
Unrefrigerated Warehouse - No Rail	0.00	0.00	0.00	**0**	**0**	-
Total	**67,444.99**	**52,009.00**	**36,352.16**	**182,011,028**	**19,535**	**98,591**

8 FUTURE YEAR (2035) WITH PROJECT

This section presents the ADT, peak hour link analysis, queue analysis, and intersection LOS analysis for the Future Year (2035) With Project scenario. The scenario is based on the addition of project traffic proposed as part of the West Carson TOD Specific Plan described in Section 2. Associated lane geometries and controls are consistent with the Future Year (2035) No Project intersection geometries and controls.

8.1 AVERAGE DAILY TRAFFIC

The average daily traffic for selected links generated by the project as well as in the Future Year (2035) No Project and Future Year (2035) With Project scenarios are presented in Table 8.1.

TABLE 8.1: FUTURE YEAR (2035) WITH PROJECT ROADWAY SEGMENT SUMMARY

ID	Segment	Future Year (2035) No Project	Project ADT	Future Year (2035) With Project
1	Carson Street west of Berendo Avenue	35,233	5,894	41,127
2	Carson Street east of Vermont Avenue	41,473	17,680	59,153
3	Carson Street east of Figueroa Street	21,781	5,894	27,675
4	Carson Street west of Normandie Avenue	38,591	4,420	43,011
5	Normandie Avenue north of Carson Street	20,470	246	20,716
6	Normandie Avenue south of Carson Street	22,095	0	22,095
7	Vermont Avenue south of Javelin Street	19,520	10,804	30,324
8	Vermont Avenue south of Carson Street	23,824	5,893	29,717
9	Vermont Avenue south of 223rd Street	24,559	5,894	30,453
10	Figueroa Street south of Carson Street	23,964	6,384	30,348

8.2 PEAK HOUR LINK LEVEL OF SERVICE

AM and PM peak hour link analyses are presented in Table 8.2 and 8.3, respectively. The peak hour link volumes are derived from the turning movement volumes; more specifically, the arriving and departing volumes between two intersections that the link of interest joins. In the event that the departures of one intersection did not equal the arrivals of the second intersection, an average of the two volumes was taken to be the link volume experienced. A loss, or even gain, in volumes between two intersections is not uncommon, especially in situations where additional intersections or driveways are present between the intersections of interest. The following links are expected to be operate at LOS E or worse:

- Carson Street from Budlong Ave to Berendo Ave
- Carson Street from Vermont Ave to SB Harbor Fwy ramp
- Carson Street from Western Ave to Normandie Ave
- Normandie Avenue from Carson Street to 220th Street
- Vermont Avenue from 220th Street to 223rd Street
- Figueroa Street from Carson Street to 220th Street

TABLE 8.2: FUTURE YEAR (2035) WITH PROJECT AM PEAK HOUR LINK ANALYSIS

Link ID	Street	Segment		Class	Capacity per Lane	Number of Lanes		Volumes		V/C Ratio		Level of Service	
		From	To			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	W Carson St	Budlong Ave	Berendo Ave	Major	750	2	2	1096	1680	0.73	**1.12**	C	**F**
2	W Carson St	Vermont Ave	I-110 SB Ramp	Major	750	3	2	1310	2641	0.58	**1.76**	A	**F**
3	W Carson St	Figueroa St	Moneta Ave	Major	750	2	2	736	1087	0.49	0.72	A	C
4	W Carson St	Western Ave	Normandie Ave	Major	750	2	2	1287	1587	0.86	**1.06**	D	**F**
5	Normandie Ave	Torrance Blvd	Carson St	Secondary	600	2	2	1053	656	0.88	0.55	D	A
6	Normandie Ave	Carson St	220th St	Secondary	600	2	2	1053	715	0.88	0.60	D	A
7	S Vermont Ave	Javelin St	Carson St	Major	750	2	2	1442	1236	**0.96**	0.82	**E**	D
8	S Vermont Ave	Carson St	220th St	Major	750	2	2	1336	1274	0.89	0.85	D	D
9	S Vermont Ave	220th St	223rd St	Major	750	2	2	1538	863	**1.03**	0.58	**E**	A
10	S Figueroa St	Carson St	220th St	Major	750	2	2	1231	1142	0.82	0.76	D	C

Bold and shaded = Unacceptable LOS.

TABLE 8.3: FUTURE YEAR (2035) WITH PROJECT PM PEAK HOUR LINK ANALYSIS

Link ID	Street	Segment		Class	Capacity per Lane	Number of Lanes		Volumes		V/C Ratio		Level of Service	
		From	To			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	W Carson St	Budlong Ave	Berendo Ave	Major	750	2	2	1491	1469	**0.99**	**0.98**	**E**	**E**
2	W Carson St	Vermont Ave	I-110 SB Ramp	Major	750	3	2	2181	1669	**0.97**	**1.11**	**E**	**F**
3	W Carson St	Figueroa St	Moneta Ave	Major	750	2	2	1035	826	0.69	0.55	B	A
4	W Carson St	Western Ave	Normandie Ave	Major	750	2	2	1648	1467	**1.10**	**0.98**	**F**	**E**
5	Normandie Ave	Torrance Blvd	Carson St	Secondary	600	2	2	815	1051	0.68	0.88	B	D
6	Normandie Ave	Carson St	220th St	Secondary	600	2	2	736	1107	0.61	**0.92**	B	**E**
7	S Vermont Ave	Javelin St	Carson St	Major	750	2	2	1079	1479	0.72	**0.99**	C	**E**
8	S Vermont Ave	Carson St	220th St	Major	750	2	2	1110	1321	0.74	0.88	C	D
9	S Vermont Ave	220th St	223rd St	Major	750	2	2	776	1560	0.52	**1.04**	A	**E**
10	S Figueroa St	Carson St	220th St	Major	750	2	2	669	1569	0.45	**1.05**	A	**E**

Bold and shaded = Unacceptable LOS.

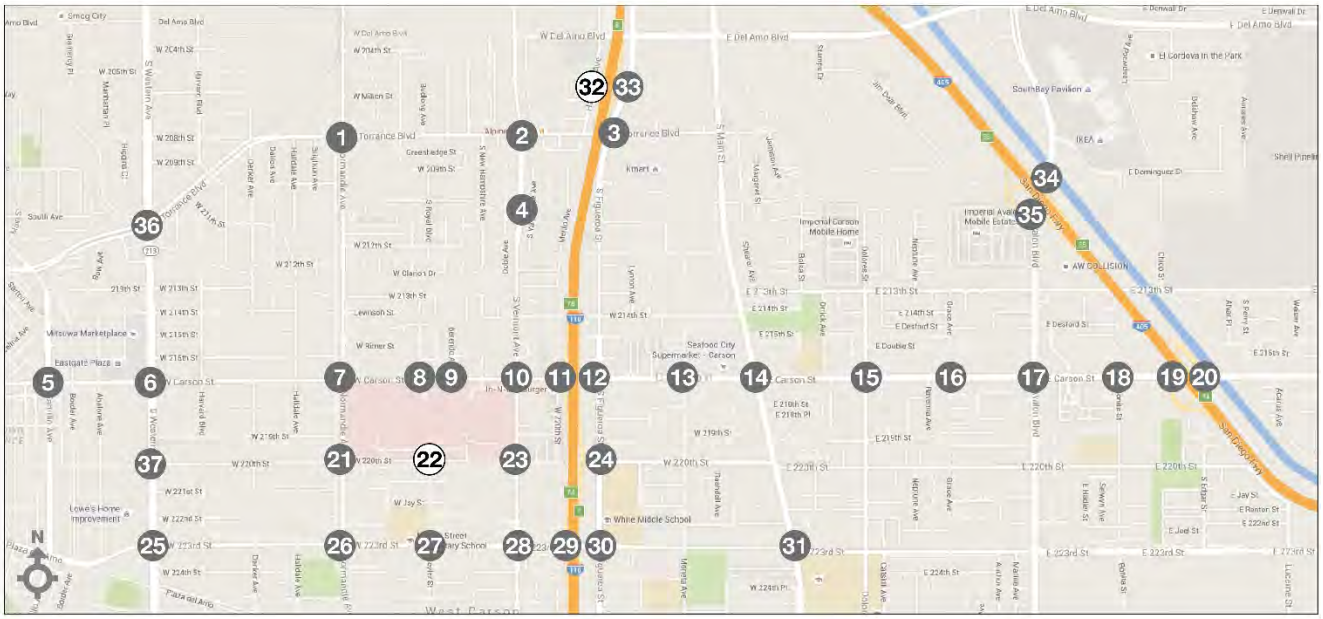
8.3 INTERSECTION LEVEL OF SERVICE

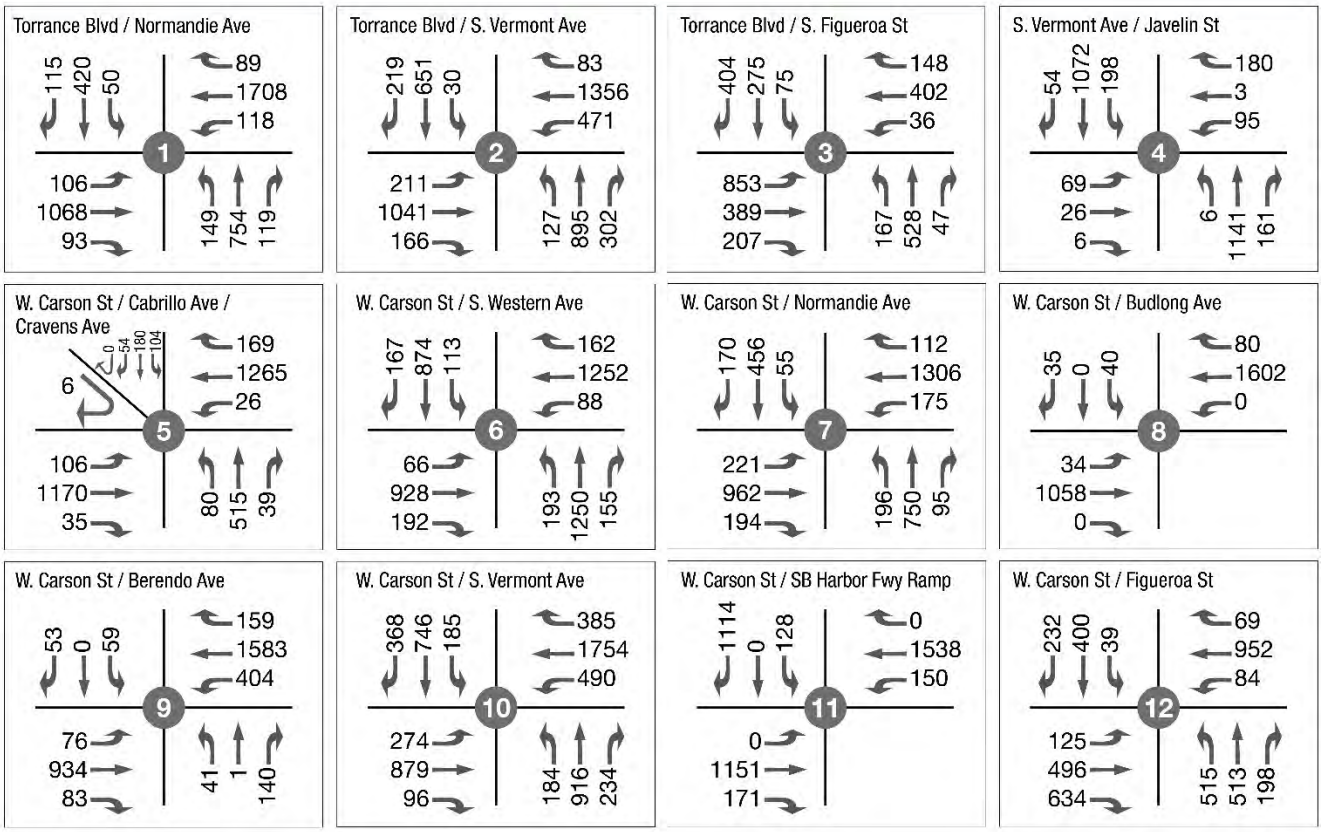
The peak hour turning movement volumes presented in Figure 8.1 and 8.2 were utilized in order to assess intersection performance. A summary of the AM and PM peak hour intersection level of service analysis results for the Future Year (2035) With Project condition is presented in Table 8.4. Additionally, study intersections were evaluated to determine if they were significantly impacted by the addition of project-generated traffic; summary tables for the AM and PM peak hours are presented in Table 8.5 and Table 8.6, respectively. The intersection impact thresholds are outlined in Section 3.

The following seventeen intersections are expected to be significantly impacted by project traffic:

- Normandie Avenue and Torrance Boulevard
- Vermont Avenue and Torrance Boulevard
- Western Avenue and Carson Street
- Normandie Avenue and Carson Street
- Berendo Avenue and Carson Street
- Vermont Avenue and Carson Street
- SB I-110 Ramps and Carson Street
- Figueroa Street and 220th Street / NB I-110 Ramps
- Western Avenue and 223rd Street
- Normandie Avenue and 223rd Street
- Meyler Street and 223rd Street
- Vermont Avenue and 223rd Street
- SB I-110 Ramps and 223rd Street
- Figueroa Street and 223rd Street
- Hamilton Avenue and SB I-110 Ramps
- Western Avenue and Torrance Boulevard
- Western Avenue and 220th Street

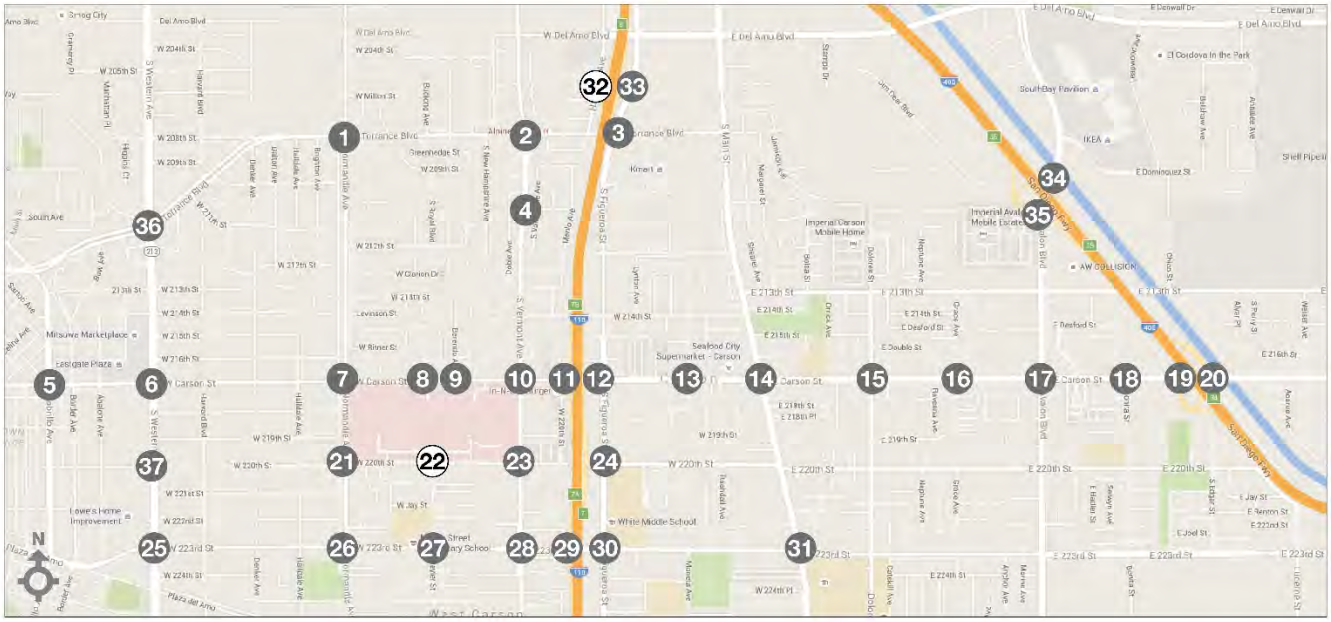
FIGURE 8.1: FUTURE YEAR (2035) WITH PROJECT TURNING MOVEMENT VOLUMES – AM PEAK HOUR

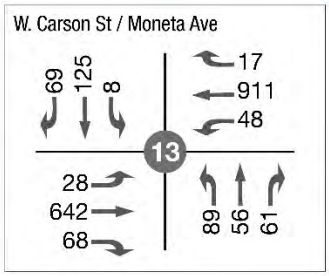


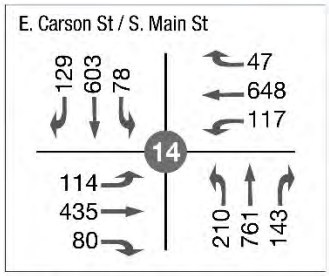


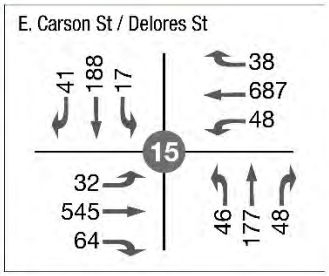
Legend

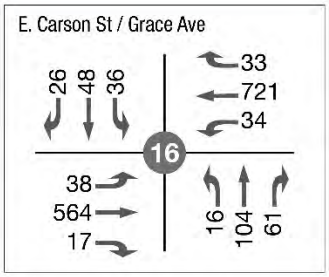
Signalized Intersection Unsignalized Intersection

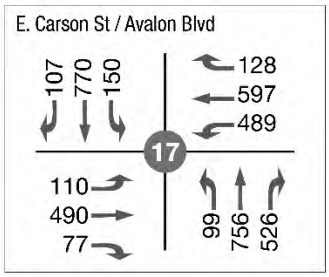


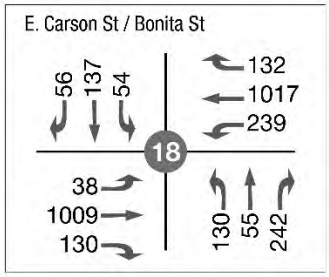


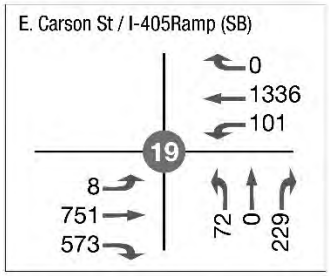


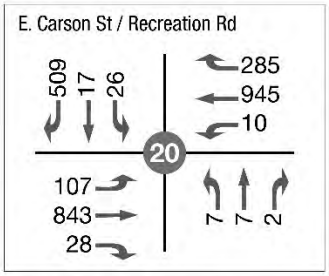


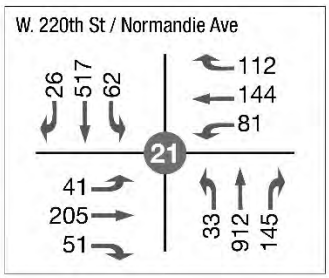


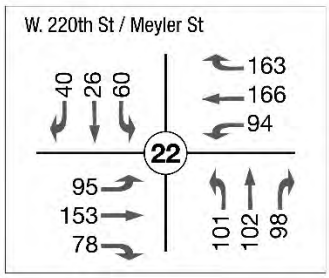


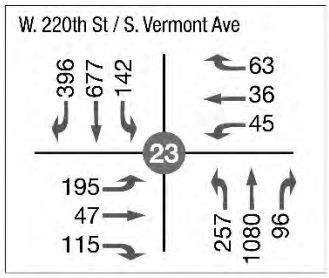


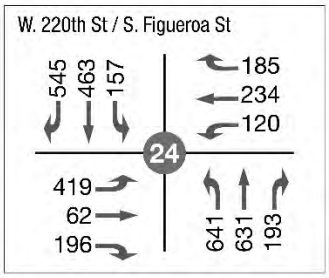






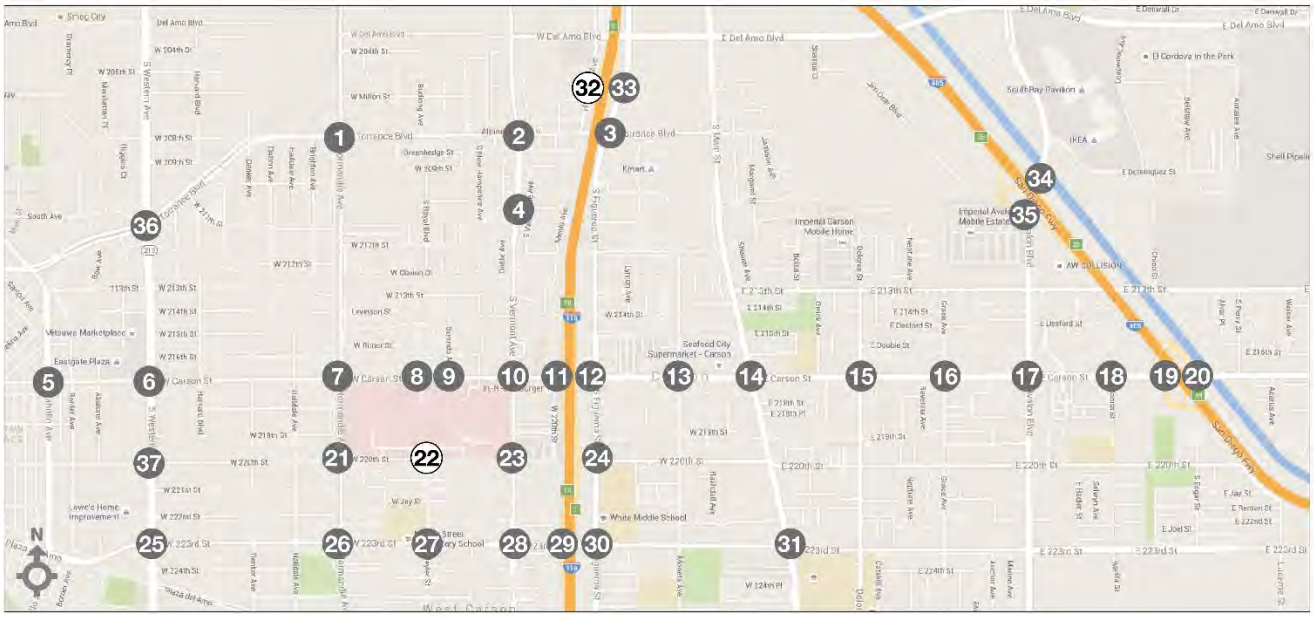


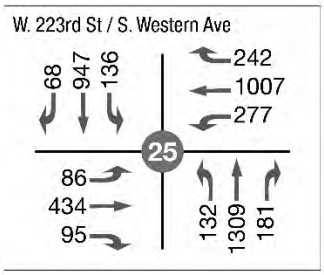


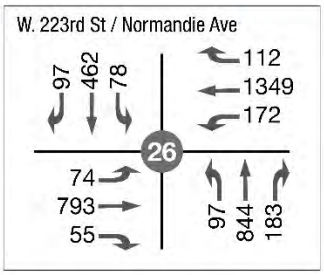


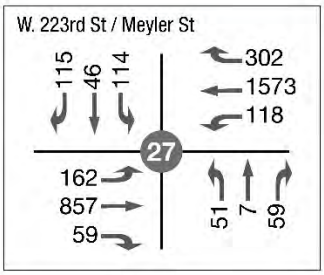
Legend

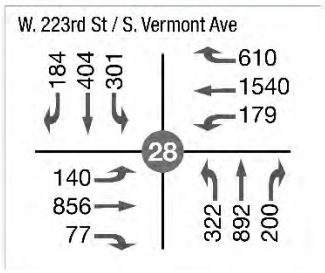
Signalized Intersection Unsignalized Intersection Lane Geometry

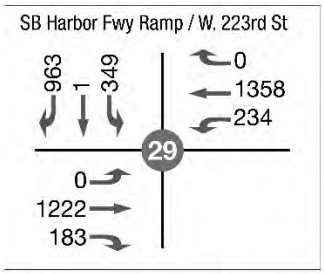

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
N

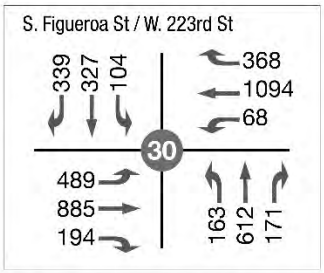

W. 223rd St / S. Western Ave
68
947
136
242
1007
277
25
86
434
95
132
1309
181

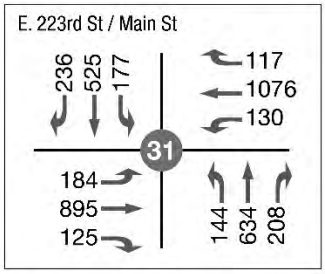

W. 223rd St / Normandie Ave
97
462
78
112
1349
172
26
74
793
55
97
844
183

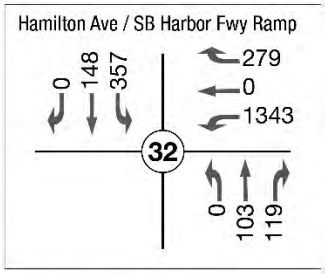

W. 223rd St / Meyler St
115
46
114
302
1573
118
27
162
857
59
51
7
59

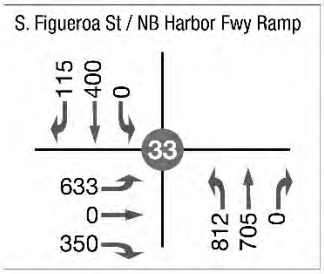

W. 223rd St / S. Vermont Ave
184
404
301
610
1540
179
28
140
856
77
322
892
200

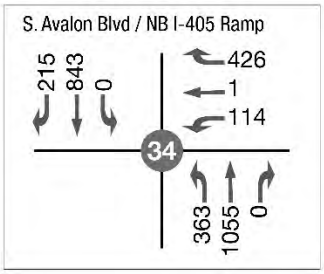

SB Harbor Fwy Ramp / W. 223rd St
963
1
349
0
1358
234
29
0
1222
183

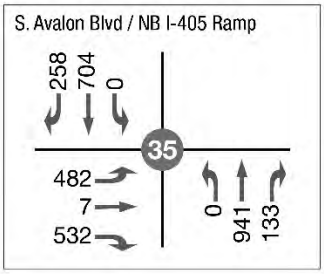

S. Figueroa St / W. 223rd St
339
327
104
368
1094
68
30
489
885
194
163
612
171

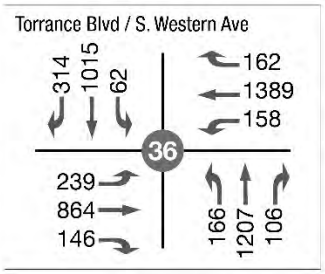

E. 223rd St / Main St
236
525
177
117
1076
130
31
184
895
125
144
634
208

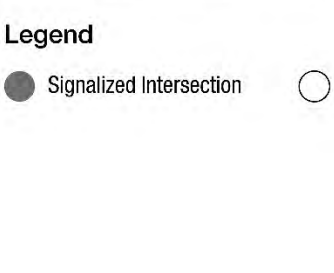

Hamilton Ave / SB Harbor Fwy Ramp
0
148
357
279
0
1343
32
0
103
119


S. Figueroa St / NB Harbor Fwy Ramp
115
400
0
33
633
0
350
812
705
0


S. Avalon Blvd / NB I-405 Ramp
215
843
0
426
1
114
34
363
1055
0


S. Avalon Blvd / NB I-405 Ramp
258
704
0
35
482
7
532
0
941
133


Torrance Blvd / S. Western Ave
314
1015
62
162
1389
158
36
239
864
146
166
1207
106


Legend
Signalized Intersection
Unsignalized Intersection
Lane Geometry

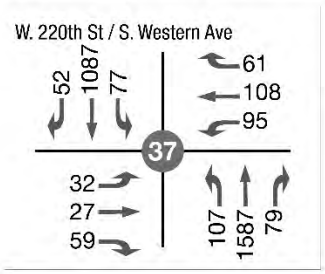
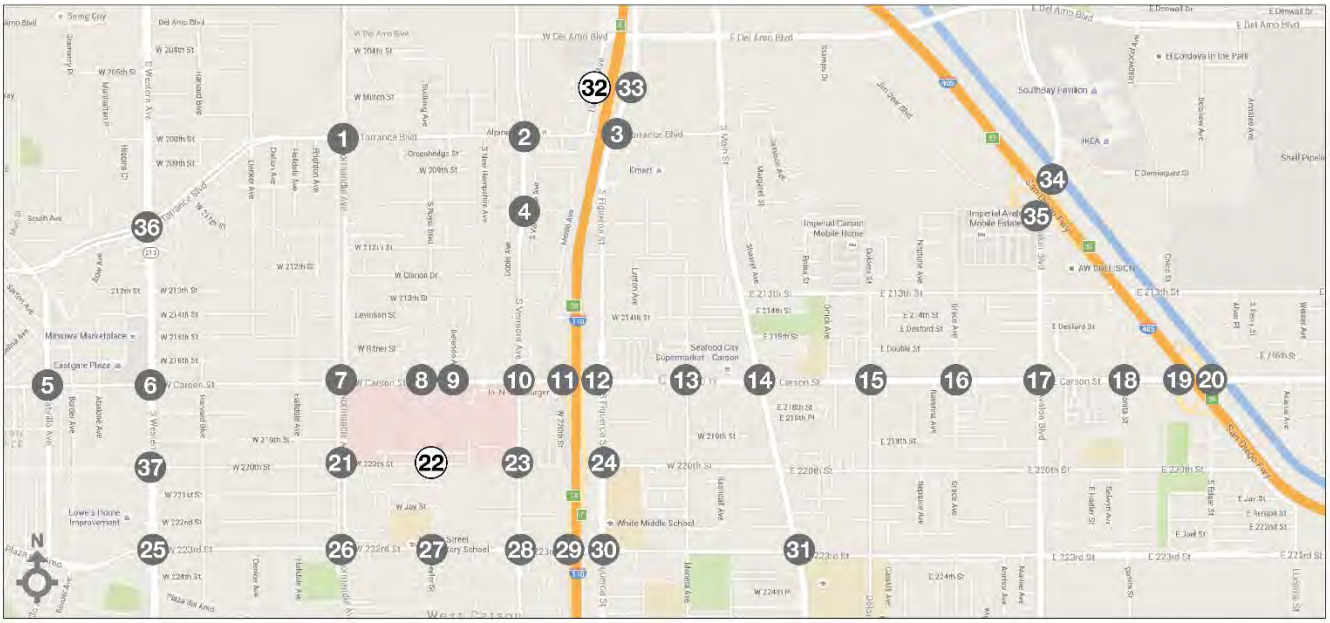
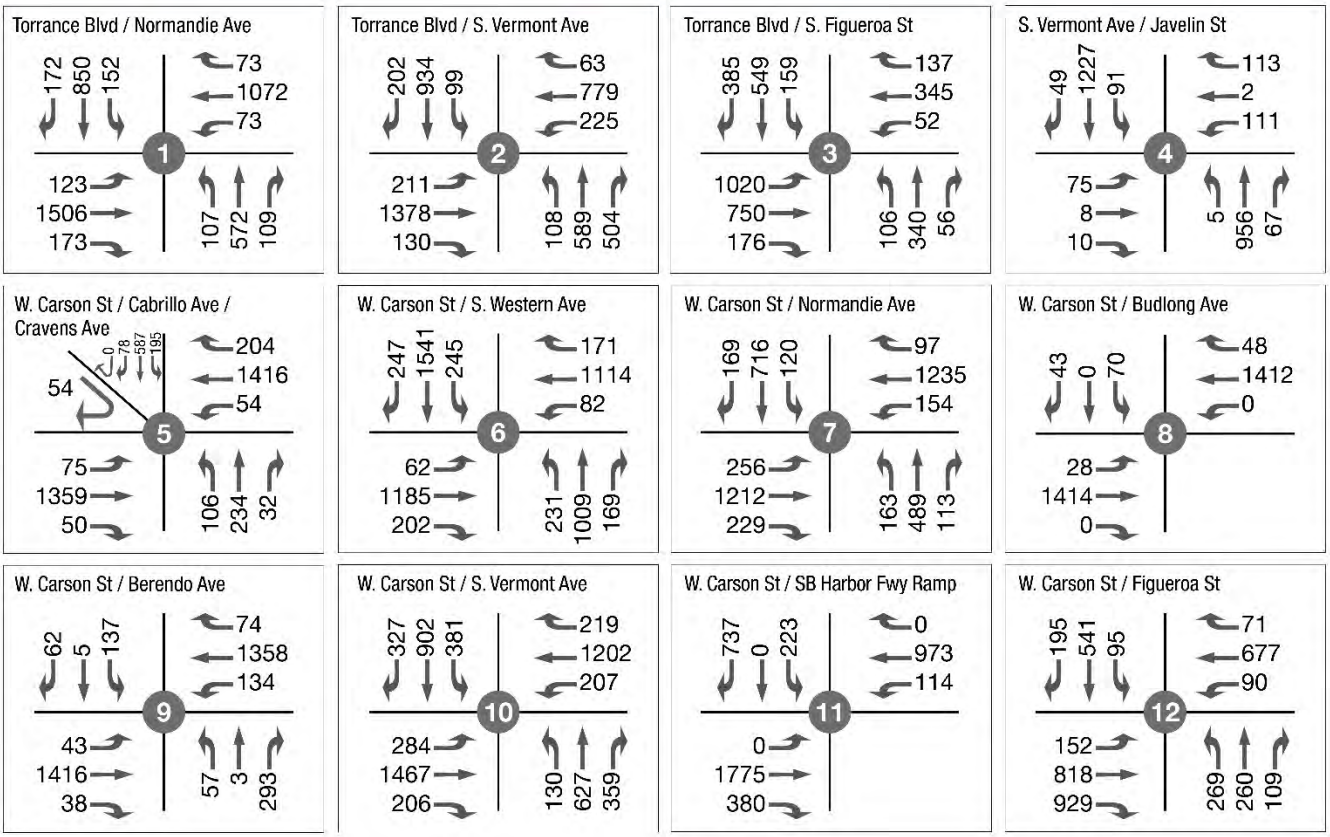

W. 220th St / S. Western Ave
52
1087
77
61
108
95
37
32
27
59
107
1587
79

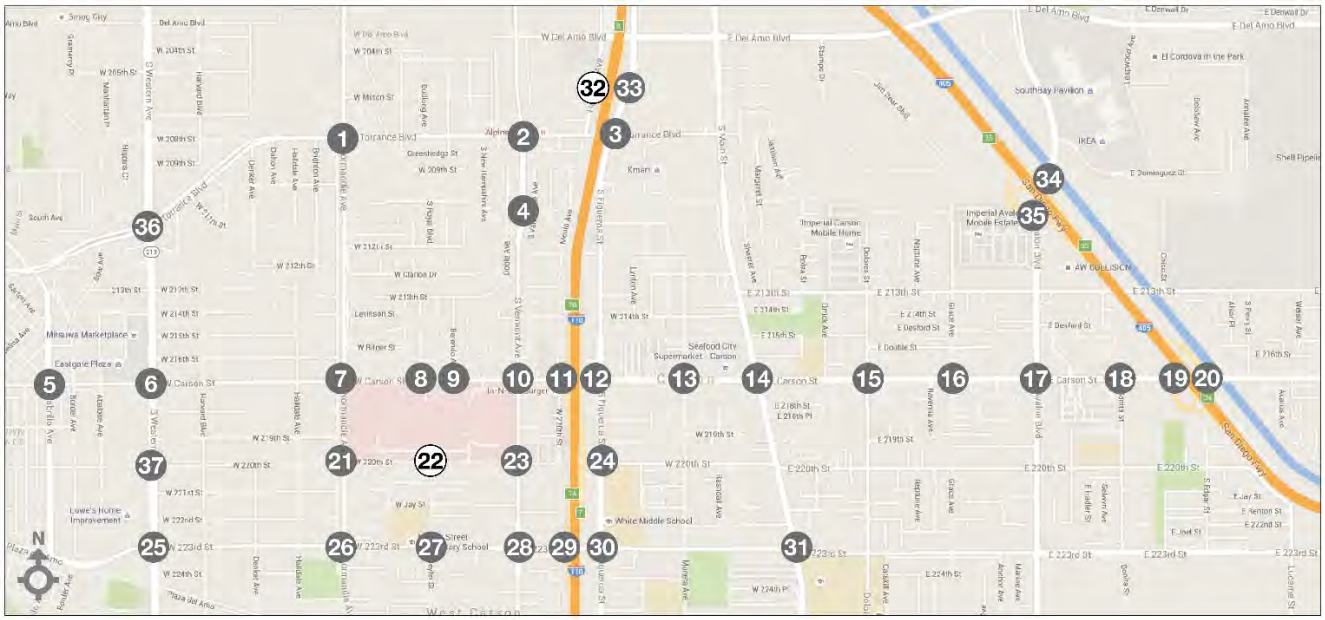
FIGURE 8.2: FUTURE YEAR (2035) WITH PROJECT TURNING MOVEMENT VOLUMES – PM PEAK HOUR

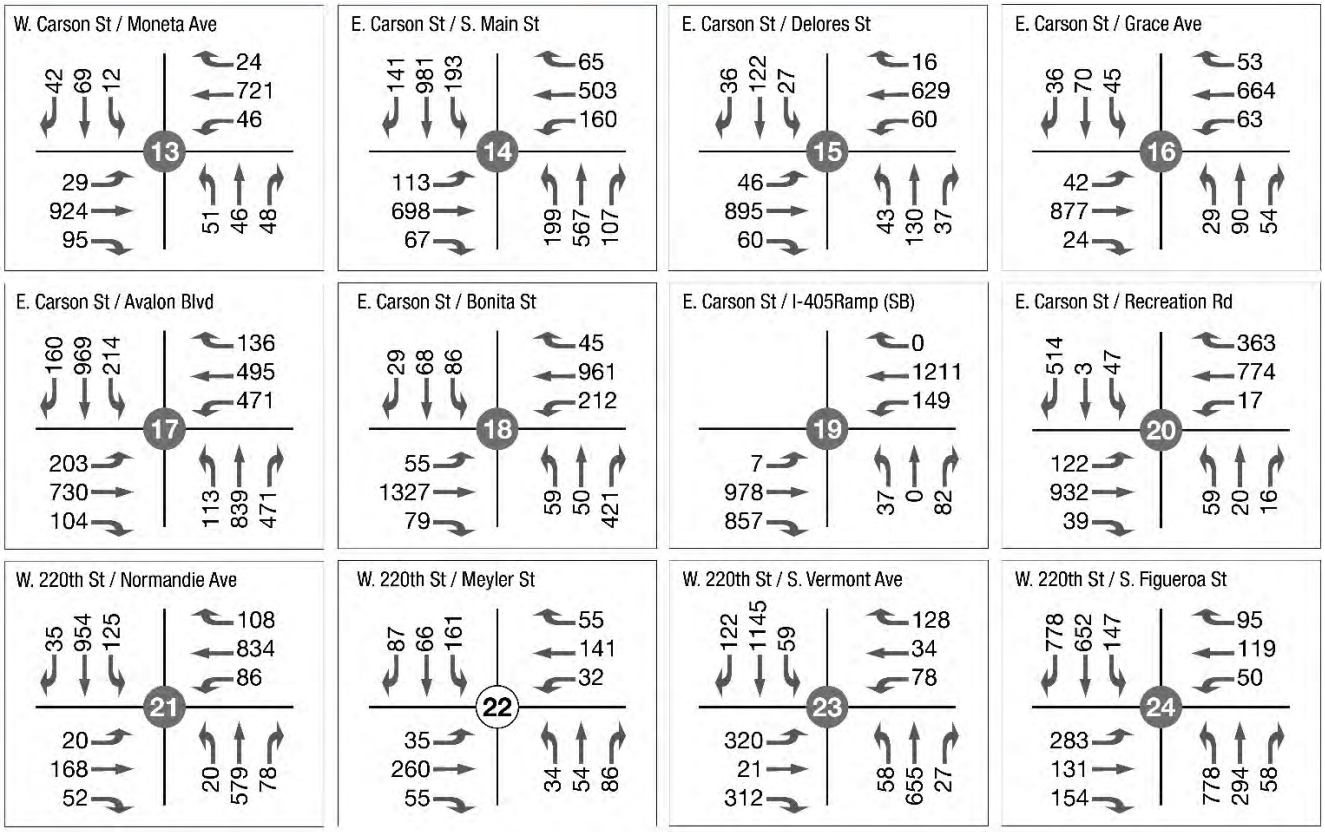




Legend

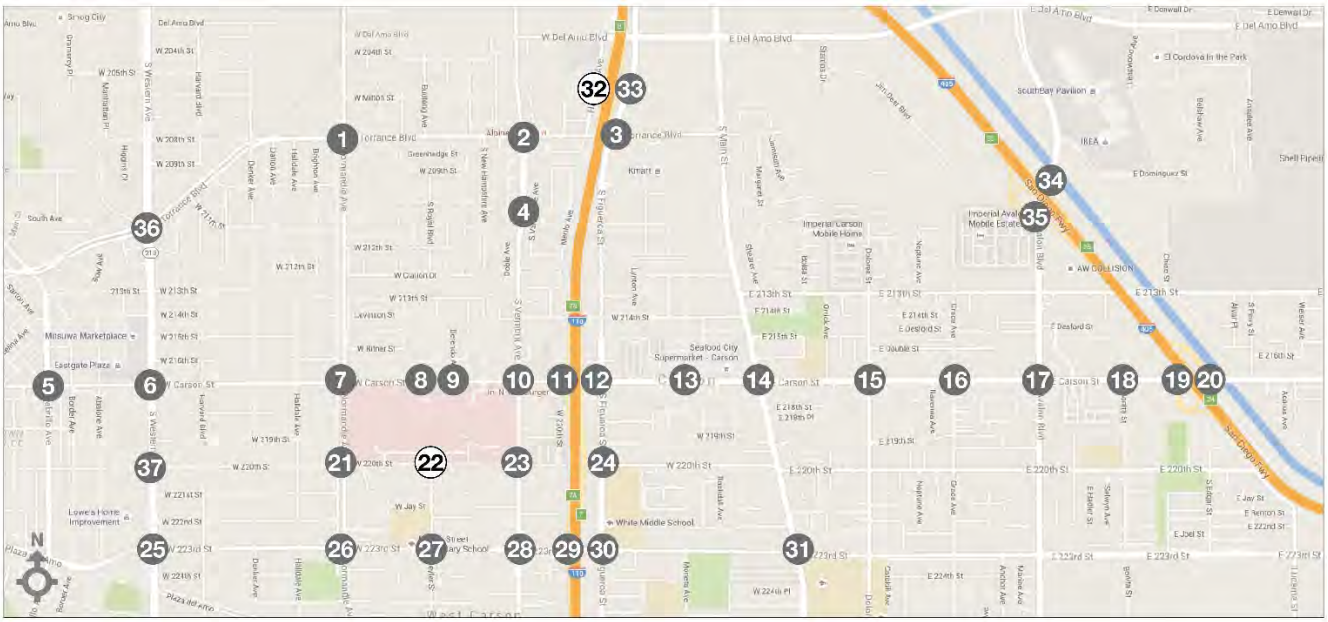
Signalized Intersection Unsignalized Intersection

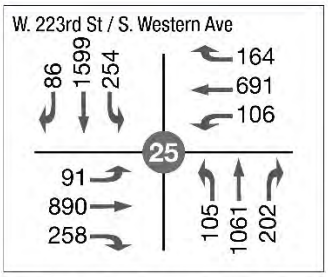


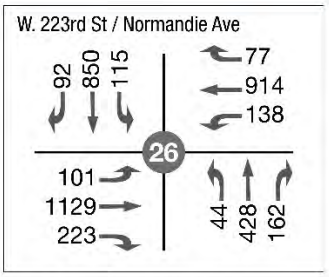


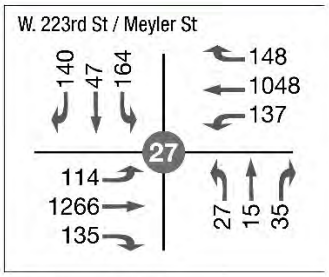
Legend

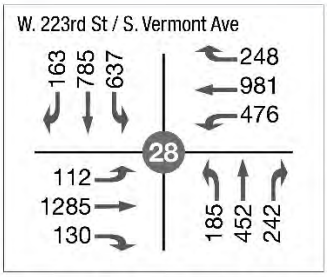
Signalized Intersection Unsignalized Intersection Lane Geometry

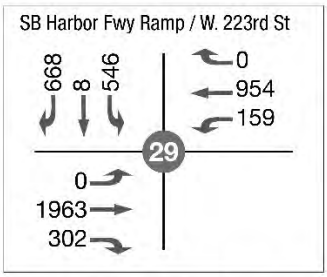


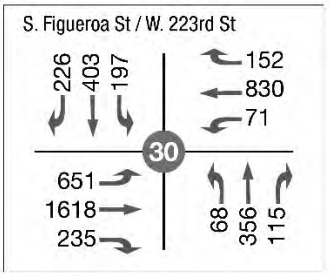

W. 223rd St / S. Western Ave
86
1599
254
164
691
106
25
91
890
258
105
1061
202

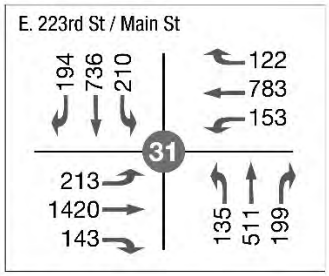

W. 223rd St / Normandie Ave
92
850
115
77
914
138
26
101
1129
223
44
428
162

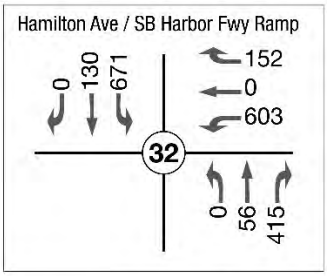

W. 223rd St / Meyler St
140
47
164
148
1048
137
27
114
1266
135
27
15
35

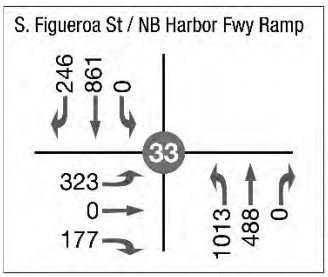

W. 223rd St / S. Vermont Ave
163
785
637
248
981
476
28
112
1285
130
185
452
242

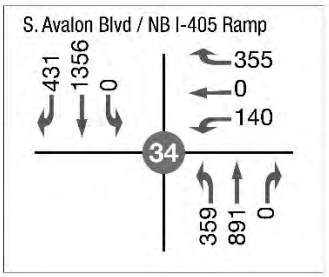

SB Harbor Fwy Ramp / W. 223rd St
668
8
546
0
954
159
29
0
1963
302

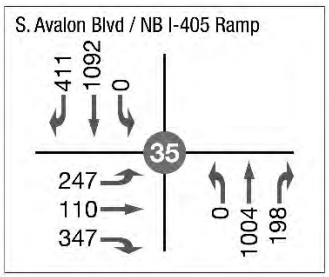

S. Figueroa St / W. 223rd St
226
403
197
152
830
71
30
651
1618
235
68
356
115

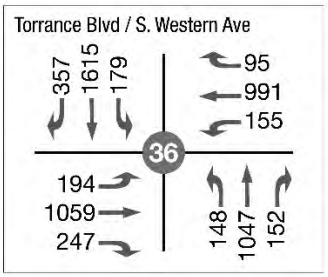

E. 223rd St / Main St
194
736
210
122
783
153
31
213
1420
143
135
511
199

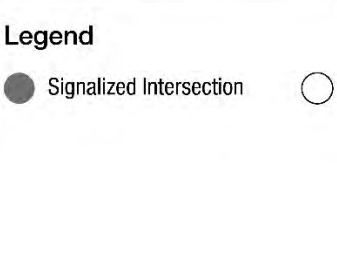

Hamilton Ave / SB Harbor Fwy Ramp
0
130
671
152
0
603
32
0
56
415


S. Figueroa St / NB Harbor Fwy Ramp
246
861
0
33
323
0
177
1013
488
0


S. Avalon Blvd / NB I-405 Ramp
431
1356
0
355
0
140
34
359
891
0


S. Avalon Blvd / NB I-405 Ramp
411
1092
0
35
247
110
347
0
1004
198


Torrance Blvd / S. Western Ave
357
1615
179
95
991
155
36
194
1059
247
148
1047
152


Legend
Signalized Intersection
Unsignalized Intersection
Lane Geometry

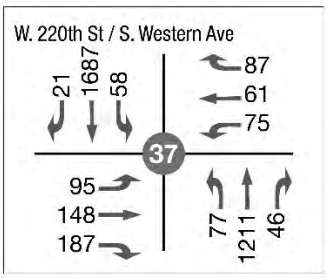

W. 220th St / S. Western Ave
21
1687
58
87
61
75
37
95
148
187
77
1211
46

TABLE 8.4: FUTURE YEAR (2035) WITH PROJECT INTERSECTION LOS

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	AM		PM	
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**1.085**	**F**	**1.113**	**F**
		County of Los Angeles	ICU	Signalized	0.895	D	**0.957**	**E**
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	**0.970**	**E**	**0.989**	**E**
3	Figueroa / Torrance	City of Carson	ICU	Signalized	0.784	C	0.820	D
4	Vermont / Javelin	County of Los Angeles	ICU	Signalized	0.697	B	0.575	A
5	Carson / Cabrillo / Cravens	City of Torrance	HCM	Signalized	21.7	C	26.2	C
6	Western / Carson	City of Torrance	HCM	Signalized	42.6	D	**75.7**	**E**
		City of Los Angeles	CMA	Signalized	**1.040**	**F**	**1.220**	**F**
		Caltrans	HCM	Signalized	**42.6**	**D**	**75.7**	**E**
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	**1.006**	**F**	**1.076**	**F**
		County of Los Angeles	ICU	Signalized	0.864	D	**0.924**	**E**
8	Budlong / Carson	County of Los Angeles	ICU	Signalized	0.569	A	0.529	A
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.669	B	0.795	C
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	**1.121**	**F**	**1.050**	**F**
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	**1.177**	**F**	**0.981**	**E**
		Caltrans	HCM	Signalized	**138.2**	**F**	**92.4**	**F**
12	Figueroa / Carson	City of Carson	ICU	Signalized	0.774	C	0.867	D
13	Moneta / Carson	City of Carson	ICU	Signalized	0.441	A	0.400	A
14	Main / Carson	City of Carson	ICU	Signalized	0.500	A	0.618	B
15	Dolores / Carson	City of Carson	ICU	Signalized	0.392	A	0.442	A
16	Grace / Carson	City of Carson	ICU	Signalized	0.385	A	0.450	A
17	Avalon / Carson	City of Carson	ICU	Signalized	0.791	C	0.873	D
18	Bonita / Carson	City of Carson	ICU	Signalized	0.666	B	0.864	D
19	SB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.564	A	0.680	B
		Caltrans	HCM	Signalized	7.8	A	9.1	A
20	NB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.685	B	0.676	B
		Caltrans	HCM	Signalized	17.8	B	14.5	B
21	Normandie / 220th	City of Los Angeles	CMA	Signalized	0.563	A	0.526	A
		County of Los Angeles	ICU	Signalized	0.528	A	0.493	A
22	Meyler / 220th	County of Los Angeles	ICU	AWSC	0.522	A	0.537	A
23	Vermont / 220th	County of Los Angeles	ICU	Signalized	0.606	B	0.674	B
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	**1.263**	**F**	**1.337**	**F**
		Caltrans	HCM	Signalized	**114.3**	**F**	**168.3**	**F**
25	Western / 223rd	City of Torrance	HCM	Signalized	53.7	D	51.6	D
		City of Los Angeles	CMA	Signalized	**1.092**	**F**	**1.059**	**F**
		Caltrans	HCM	Signalized	**53.7**	**D**	**51.6**	**D**
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.833	D	0.812	D
		County of Los Angeles	ICU	Signalized	0.780	C	0.761	C
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.891	D	0.760	C
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	**1.226**	**F**	**1.116**	**F**
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	**1.130**	**F**	**1.130**	**F**
		Caltrans	HCM	Signalized	**62.0**	**E**	**97.6**	**F**
30	Figueroa / 223rd	City of Carson	ICU	Signalized	**0.959**	**E**	**0.901**	**E**
31	Main / 223rd	City of Carson	ICU	Signalized	0.760	C	0.854	D
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.576**	**F**	**1.351**	**F**
		Caltrans	HCM	AWSC	**183.5**	**F**	**195.9**	**F**
33	Figueroa / NB I-110 Ramps	City of Carson	ICU	Signalized	0.749	C	0.821	D
		Caltrans	HCM	Signalized	34.8	C	34.2	C
34	Avalon / NB I-405	City of Carson	ICU	Signalized	0.366	A	0.466	A
		Caltrans	HCM	Signalized	18.3	B	18.1	B
35	Avalon / SB I-405	City of Carson	ICU	Signalized	0.524	A	0.472	A
		Caltrans	HCM	Signalized	15.0	B	12.1	B
36	Western / Torrance	City of Torrance	HCM	Signalized	**55.8**	**E**	48.1	D
		City of Los Angeles	CMA	Signalized	**0.995**	**E**	**0.94**	**E**
		Caltrans	HCM	Signalized	**55.8**	**E**	48.1	D
37	Western / 220th	City of Torrance	HCM	Signalized	11.3	B	22.0	C
		City of Los Angeles	CMA	Signalized	0.737	C	0.951	E
		Caltrans	HCM	Signalized	11.3	B	22.0	C

AWSC = All Way Stop Control. **Bold and shaded** = Intersection operates at an unacceptable LOS using the methodology listed.

TABLE 8.5: FUTURE YEAR (2035) WITH PROJECT INTERSECTION LOS – AM PEAK HOUR

	INTERSECTION	Jurisdiction	Analysis Method	Intersection Control	FUTURE [a]		W/ PROJECT		Change in V/C or Delay	Significant Impact?
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS		
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**1.065**	**F**	**1.085**	**F**	0.020	Yes
		County of Los Angeles	ICU	Signalized	0.786	C	0.895	D	0.109	Yes
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.782	C	**0.970**	**E**	0.188	Yes
3	Figueroa / Torrance	City of Carson	ICU	Signalized	0.756	C	0.784	C	0.028	No
4	Vermont / Javelin	County of Los Angeles	ICU	Signalized	0.507	A	0.697	B	0.190	No
5	Carson / Cabrillo / Cravens	City of Torrance	HCM	Signalized	20.7	C	21.7	C	1.0	No
6	Western / Carson	City of Torrance	HCM	Signalized	33.6	C	42.6	D	9.0	No
		City of Los Angeles	CMA	Signalized	**0.985**	**E**	**1.040**	**F**	0.055	Yes
		Caltrans	HCM	Signalized	33.6	C	**42.6**	**D**	9.0	Yes
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	0.980	D	**1.006**	**F**	0.026	Yes
		County of Los Angeles	ICU	Signalized	0.747	C	0.864	D	0.117	Yes
8	Budlong / Carson	County of Los Angeles	ICU	Signalized	0.450	A	0.569	A	0.119	No
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.456	A	0.669	B	0.213	No
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.758	C	**1.121**	**F**	0.363	Yes
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.724	C	**1.177**	**F**	0.453	Yes
		Caltrans	HCM	Signalized	**38.2**	**D**	**138.2**	**F**	100.0	Yes
12	Figueroa / Carson	City of Carson	ICU	Signalized	0.633	B	0.774	C	0.141	No
13	Moneta / Carson	City of Carson	ICU	Signalized	0.359	A	0.441	A	0.082	No
14	Main / Carson	City of Carson	ICU	Signalized	0.426	A	0.500	A	0.074	No
15	Dolores / Carson	City of Carson	ICU	Signalized	0.332	A	0.392	A	0.060	No
16	Grace / Carson	City of Carson	ICU	Signalized	0.317	A	0.385	A	0.068	No
17	Avalon / Carson	City of Carson	ICU	Signalized	0.770	C	0.791	C	0.021	No
18	Bonita / Carson	City of Carson	ICU	Signalized	0.648	B	0.666	B	0.018	No
19	SB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.554	A	0.564	A	0.010	No
		Caltrans	HCM	Signalized	7.9	A	7.8	A	-0.1	No
20	NB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.623	B	0.685	B	0.062	No
		Caltrans	HCM	Signalized	14.2	B	17.8	B	3.6	No
21	Normandie / 220th	City of Los Angeles	CMA	Signalized	0.495	A	0.563	A	0.068	No
		County of Los Angeles	ICU	Signalized	0.412	A	0.528	A	0.116	No
22	Meyler / 220th	County of Los Angeles	HCM	AWSC	0.307	A	0.522	A	0.215	No
23	Vermont / 220th	County of Los Angeles	ICU	Signalized	0.428	A	0.606	B	0.178	No
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	**0.981**	**E**	**1.263**	**F**	0.282	Yes
		Caltrans	HCM	Signalized	**65.6**	**E**	**114.3**	**F**	48.7	Yes
25	Western / 223rd	City of Torrance	HCM	Signalized	38.7	D	53.7	D	15.0	No
		City of Los Angeles	CMA	Signalized	**0.992**	**E**	**1.092**	**F**	0.100	Yes
		Caltrans	HCM	Signalized	**38.7**	**D**	**53.7**	**D**	15.000	No
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.821	D	0.833	D	0.012	No
		County of Los Angeles	ICU	Signalized	0.683	B	0.780	C	0.097	Yes
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.593	A	0.891	D	0.298	Yes
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.845	D	**1.226**	**F**	0.381	Yes
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.748	C	**1.130**	**F**	0.382	Yes
		Caltrans	HCM	Signalized	25.9	C	**62.0**	**E**	36.1	Yes
30	Figueroa / 223rd	City of Carson	ICU	Signalized	0.778	C	**0.959**	**E**	0.181	Yes
31	Main / 223rd	City of Carson	ICU	Signalized	0.727	C	0.760	C	0.033	No
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.032**	**F**	**1.576**	**F**	0.544	Yes
		Caltrans	HCM	AWSC	**78.0**	**F**	**183.5**	**F**	105.5	Yes
33	Figueroa / NB I-110 Ramps	City of Carson	ICU	Signalized	0.695	B	0.749	C	0.054	No
		Caltrans	HCM	Signalized	31.2	C	34.8	C	3.6	No
34	Avalon / NB I-405	City of Carson	ICU	Signalized	0.352	A	0.366	A	0.014	No
		Caltrans	HCM	Signalized	18.4	B	18.3	B	-0.1	No
35	Avalon / SB I-405	City of Carson	ICU	Signalized	0.519	A	0.524	A	0.005	No
		Caltrans	HCM	Signalized	14.4	B	15.0	B	0.6	No
36	Western / Torrance	City of Torrance	HCM	Signalized	**55.1**	**E**	**55.8**	**E**	0.7	Yes
		City of Los Angeles	CMA	Signalized	**0.991**	**E**	**0.995**	**E**	0.004	No
		Caltrans	HCM	Signalized	**55.1**	**E**	**55.8**	**E**	0.7	No
37	Western / 220th	City of Torrance	HCM	Signalized	8.4	A	11.3	B	2.9	No
		City of Los Angeles	CMA	Signalized	0.666	B	0.737	C	0.071	No
		Caltrans	HCM	Signalized	8.4	A	11.3	B	2.9	No

[a] = Existing Year (2016) No Project V/C and LOS are presented for County of Los Angeles intersections; County guidelines specify use of the Existing Year (2016) No Project V/C and LOS as the baseline for comparison to the Future Year (2035) With Project V/C and LOS. AWSC = All Way Stop Control. **Bold and shaded** = Intersection operates at an unacceptable LOS using the methodology listed.

TABLE 8.6: FUTURE YEAR (2035) WITH PROJECT INTERSECTION LOS – PM PEAK HOUR

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	FUTURE [a]		W/ PROJECT		Change in V/C or Delay	Significant Impact?
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS		
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**1.113**	**F**	**1.113**	**F**	0.000	No
		County of Los Angeles	ICU	Signalized	0.850	D	**0.957**	**E**	0.107	Yes
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.770	C	**0.989**	**E**	0.219	Yes
3	Figueroa / Torrance	City of Carson	ICU	Signalized	0.754	C	0.820	D	0.066	No
4	Vermont / Javelin	County of Los Angeles	ICU	Signalized	0.373	A	0.575	A	0.202	No
5	Carson / Cabrillo / Cravens	City of Torrance	HCM	Signalized	22.1	C	26.2	C	4.1	No
6	Western / Carson	City of Torrance	HCM	Signalized	**56.9**	**E**	**75.7**	**E**	18.8	Yes
		City of Los Angeles	CMA	Signalized	**1.124**	**F**	**1.220**	**F**	0.096	Yes
		Caltrans	HCM	Signalized	**56.9**	**E**	**75.7**	**E**	18.8	No
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	**1.013**	**F**	**1.076**	**F**	0.063	Yes
		County of Los Angeles	ICU	Signalized	0.773	C	**0.924**	**E**	0.151	Yes
8	Budlong / Carson	County of Los Angeles	ICU	Signalized	0.388	A	0.529	A	0.141	No
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.427	A	0.795	C	0.368	Yes
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.702	C	**1.050**	**F**	0.348	Yes
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.665	B	**0.981**	**E**	0.316	Yes
		Caltrans	HCM	Signalized	31.6	C	**92.4**	**F**	60.8	Yes
12	Figueroa / Carson	City of Carson	ICU	Signalized	0.639	B	0.867	D	0.228	No
13	Moneta / Carson	City of Carson	ICU	Signalized	0.328	A	0.400	A	0.072	No
14	Main / Carson	City of Carson	ICU	Signalized	0.564	A	0.618	B	0.054	No
15	Dolores / Carson	City of Carson	ICU	Signalized	0.382	A	0.442	A	0.060	No
16	Grace / Carson	City of Carson	ICU	Signalized	0.390	A	0.450	A	0.060	No
17	Avalon / Carson	City of Carson	ICU	Signalized	0.824	D	0.873	D	0.049	No
18	Bonita / Carson	City of Carson	ICU	Signalized	0.822	D	0.864	D	0.042	No
19	SB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.656	B	0.680	B	0.024	No
		Caltrans	HCM	Signalized	8.7	A	9.1	A	0.4	No
20	NB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.653	B	0.676	B	0.023	No
		Caltrans	HCM	Signalized	13.8	B	14.5	B	0.7	No
21	Normandie / 220th	City of Los Angeles	CMA	Signalized	0.498	A	0.526	A	0.028	No
		County of Los Angeles	ICU	Signalized	0.414	A	0.493	A	0.079	No
22	Meyler / 220th	County of Los Angeles	HCM	AWSC	0.315	A	0.537	A	0.222	No
23	Vermont / 220th	County of Los Angeles	ICU	Signalized	0.498	A	0.674	B	0.176	No
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	0.886	D	**1.337**	**F**	0.451	Yes
		Caltrans	HCM	Signalized	**58.3**	**E**	**168.3**	**F**	110.0	Yes
25	Western / 223rd	City of Torrance	HCM	Signalized	47.3	D	51.6	D	4.3	No
		City of Los Angeles	CMA	Signalized	1.049	F	**1.059**	**F**	0.010	Yes
		Caltrans	HCM	Signalized	47.3	D	**51.6**	**D**	4.300	No
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.787	C	0.812	D	0.025	No
		County of Los Angeles	ICU	Signalized	0.655	B	0.761	C	0.106	Yes
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.523	A	0.760	C	0.237	Yes
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.769	C	**1.116**	**F**	0.347	Yes
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.818	D	**1.130**	**F**	0.312	Yes
		Caltrans	HCM	Signalized	**46.7**	**D**	**97.6**	**F**	50.9	Yes
30	Figueroa / 223rd	City of Carson	ICU	Signalized	0.748	C	**0.901**	**E**	0.153	Yes
31	Main / 223rd	City of Carson	ICU	Signalized	0.824	D	0.854	D	0.030	No
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.115**	**F**	**1.351**	**F**	0.236	Yes
		Caltrans	HCM	AWSC	**184.2**	**F**	**195.9**	**F**	11.7	Yes
33	Figueroa / NB I-110 Ramps	City of Carson	ICU	Signalized	0.693	B	0.821	D	0.128	No
		Caltrans	HCM	Signalized	24.3	C	34.2	C	9.9	No
34	Avalon / NB I-405	City of Carson	ICU	Signalized	0.461	A	0.466	A	0.005	No
		Caltrans	HCM	Signalized	18.1	B	18.1	B	0.0	No
35	Avalon / SB I-405	City of Carson	ICU	Signalized	0.460	A	0.472	A	0.012	No
		Caltrans	HCM	Signalized	11.8	B	12.1	B	0.3	No
36	Western / Torrance	City of Torrance	HCM	Signalized	43.9	D	48.1	D	4.2	No
		City of Los Angeles	CMA	Signalized	**0.927**	**E**	**0.94**	**E**	0.013	Yes
		Caltrans	HCM	Signalized	**43.9**	**D**	48.1	D	4.2	No
37	Western / 220th	City of Torrance	HCM	Signalized	20.3	C	22.0	C	1.7	No
		City of Los Angeles	CMA	Signalized	**0.909**	**E**	0.951	E	0.042	Yes
		Caltrans	HCM	Signalized	20.3	C	22.0	C	1.7	No

[a] = Existing Year (2016) No Project V/C and LOS are presented for County of Los Angeles intersections; County guidelines specify use of the Existing Year (2016) No Project V/C and LOS as the baseline for comparison to the Future Year (2035) With Project V/C and LOS. AWSC = All Way Stop Control. **Bold and shaded** = Intersection operates at an unacceptable LOS using the methodology listed.

8.4 CMP MONITORING STATION ANALYSIS

The CMP monitoring station analysis results for the AM and PM peak hours are summarized in Table 8.7 and Table 8.8, respectively. The analysis was performed in accordance with the methodology outlined in Section 3.4.1. An unacceptable LOS (LOS F) is observed at the following locations:

- I-110 at Manchester Boulevard
- I-405 at Santa Fe Avenue
- I-405 south of I-110
- I-405 north of Inglewood Avenue

Per CMP significant impact criteria outlined in section 3.4.1, no significant impacts are expected due to the addition of project traffic.

8.5 FREEWAY MAINLINE ANALYSIS

The freeway mainline analysis results for the AM and PM peak hours are summarized in Table 8.9 and Table 8.10, respectively. The analysis was conducted using the methodology and settings outlined in Section 3.4.2. All freeway segments operate at an unacceptable level of service (LOS D or worse). A significant impact is expected to occur at the following location:

- I-405 at I-710

8.6 FREEWAY OFF-RAMP QUEUE ANALYSIS

Per Caltrans traffic study guidelines, a queue analysis for freeway off-ramps at intersections of interest is to be provided. Table 8.11 summarizes the storage capacities and queue lengths expected for these off-ramps. All freeway off-ramps are provide sufficient storage capacity such that the 85% storage capacity is not exceeded by expected queues with the exception of:

- I-110 Southbound Off-Ramp at Carson Street
- I-110 Southbound Off-Ramp at 223rd Street
- I-110 Southbound Off-Ramp at Hamilton Avenue

8.7 VEHICLE MILES TRAVELED (VMT) ANALYSIS

VMT calculations were prepared based on the land use characteristics in the Future Year (2035) With Project scenario; project-related changes in land uses were calculated using the land use existing and proposed zoning outlined in Section 2.2 and Section 2.3, respectively. A summary of the following scenarios is presented in Table 8.12 and Table 8.13.

- Future Year (2035) w/ Project
- Future Year (2035) w/ Project + Pass-By, Internal Capture, and TDM Trip Reductions

TABLE 8.7: FUTURE YEAR (2035) WITH PROJECT CMP MONITORING STATION ANALYSIS – AM PEAK HOUR

ID	Freeway	Segment	Station	Direction	Lanes	Capacity	Future Year (2035) No Project			Project Trips	Future Year (2035) With Project			Change in V/C	Significant Impact?
							Peak Hour Volume	V/C	LOS		Peak Hour Volume	V/C	LOS		
1	I-110	at Wilmington Boulevard s/o C Street	1045	NB	4	8,000	4,898	0.612	C	218	5,116	0.640	C	0.027	No
				SB	4	8,000	3,577	0.447	B	81	3,658	0.457	B	0.010	No
2	I-110	at Manchester Boulevard	1046	NB	6	12,000	9,551	0.796	D	122	9,673	0.806	D	0.010	No
				SB	6	12,000	11,636	0.970	E	327	11,963	0.997	E	0.027	No
3	I-405	at Santa Fe Avenue	1066	NB	5	10,000	11,675	**1.168**	**F(0)**	218	11,893	**1.189**	**F(0)**	0.022	No
				SB	5	10,000	13,618	**1.362**	**F(2)**	81	13,699	**1.370**	**F(2)**	0.008	No
4	I-405	south of I-110	1067	NB	5	10,000	10,211	**1.021**	**F(0)**	446	10,657	**1.066**	**F(0)**	0.045	No
				SB	5	10,000	8,378	0.838	D	1,198	9,576	0.958	E	0.120	No
5	I-405	north of Inglewood Avenue	1068	NB	5	10,000	9,096	0.910	D	122	9,218	0.922	D	0.012	No
				SB	5	10,000	11,949	**1.195**	**F(0)**	327	12,276	**1.228**	**F(0)**	0.033	No
6	SR-91	east of Alameda Street/Santa Fe Avenue	1033	EB	6	12,000	8,986	0.749	C	122	9,108	0.759	C	0.010	No
				WB	6	12,000	6,533	0.544	C	327	6,860	0.572	C	0.027	No

Bold and shaded = Unacceptable evel of service (LOS F).

TABLE 8.8: FUTURE YEAR (2035) WITH PROJECT CMP MONITORING STATION ANALYSIS – PM PEAK HOUR

ID	Freeway	Segment	Station	Direction	Lanes	Capacity	Future Year (2035) No Project			Project Trips	Future Year (2035) With Project			Change in V/C	Significant Impact?
							Peak Hour Volume	V/C	LOS		Peak Hour Volume	V/C	LOS		
1	I-110	at Wilmington Boulevard s/o C Street	1045	NB	4	8,000	3,290	0.411	B	83	3,373	0.422	B	0.010	No
				SB	4	8,000	4,997	0.625	C	192	5,189	0.649	C	0.024	No
2	I-110	at Manchester Boulevard	1046	NB	6	12,000	10,499	0.875	D	288	10,787	0.899	D	0.024	No
				SB	6	12,000	12,813	**1.068**	**F(0)**	124	12,937	**1.078**	**F(0)**	0.010	No
3	I-405	at Santa Fe Avenue	1066	NB	5	10,000	10,490	**1.049**	**F(0)**	83	10,573	**1.057**	**F(0)**	0.008	No
				SB	5	10,000	16,979	**1.698**	**F(3)**	192	17,171	**1.717**	**F(3)**	0.019	No
4	I-405	south of I-110	1067	NB	5	10,000	9,293	0.929	D	1,055	10,348	**1.035**	**F(0)**	0.106	No
				SB	5	10,000	10,597	**1.060**	**F(0)**	454	11,051	**1.105**	**F(0)**	0.045	No
5	I-405	north of Inglewood Avenue	1068	NB	5	10,000	11,281	**1.128**	**F(0)**	288	11,569	**1.157**	**F(0)**	0.029	No
				SB	5	10,000	11,703	**1.170**	**F(0)**	124	11,827	**1.183**	**F(0)**	0.012	No
6	SR-91	east of Alameda Street/Santa Fe Avenue	1033	EB	6	12,000	8,581	0.715	C	288	8,869	0.739	C	0.024	No
				WB	6	12,000	6,914	0.576	C	124	7,038	0.587	C	0.010	No

Bold and shaded = Unacceptable evel of service (LOS F).

TABLE 8.9: FUTURE YEAR (2035) WITH PROJECT FREEWAY MAINLINE ANALYSIS SUMMARY – AM PEAK HOUR

ID	Freeway	Location	Direction	Future Year (2035) No Project		Project Trips	Future Year (2035) With Project		Change in Density	Project Impact?
				Density (pc/mi/ln)	LOS		Density (pc/mi/ln)	LOS		
1	SR-91	at Avalon Boulevard	EB	15.9	B	122	16.3	B	0.4	No
			WB	**27.9**	**D**	327	**29.3**	**D**	1.4	No
2	I-110	at SR-1 (Pacific Coast Highway)	NB	**28.6**	**D**	218	**30.0**	**D**	1.4	No
			SB	19.5	C	81	19.9	C	0.4	No
3	I-110	at Sepulveda Boulevard	NB	**37.6**	**E**	218	**39.6**	**E**	2	No
			SB	23.8	C	81	24.2	C	0.4	No
4	I-110	at El Segundo Boulevard	NB	**27.6**	**D**	122	**28.1**	**D**	0.5	No
			SB	**36.9**	**E**	327	**38.9**	**E**	2	No
5	I-405	at I-710	NB	**63.0**	**F**	218	**66.8**	**F**	3.8	**Yes**
			SB	**48.9**	**F**	81	**49.8**	**F**	0.9	**Yes**
6	I-405	south of I-110 (Carson Scales)	NB	**29.4**	**D**	218	**30.4**	**D**	1	No
			SB	22.4	C	81	22.9	C	0.5	No
7	I-405	at Western Avenue	NB	**31.0**	**D**	122	**31.7**	**D**	0.7	No
			SB	**32.9**	**D**	327	**34.9**	**D**	2	No

Bold and shaded = Unacceptable evel of service (LOS D or w orse). Pc/mi/ln = passenger-car per mile per lane.

TABLE 8.10: FUTURE YEAR (2035) WITH PROJECT FREEWAY MAINLINE ANALYSIS SUMMARY – PM PEAK HOUR

ID	Freeway	Location	Direction	Future Year (2035) No Project		Project Trips	Future Year (2035) With Project		Change in Density	Project Impact?
				Density (pc/mi/ln)	LOS		Density (pc/mi/ln)	LOS		
1	SR-91	at Avalon Boulevard	EB	24.3	C	288	25.4	C	1.1	No
			WB	18.6	C	124	18.9	C	0.3	No
2	I-110	at SR-1 (Pacific Coast Highway)	NB	18.2	C	83	18.6	C	0.4	No
			SB	**28.3**	**D**	192	**29.5**	**D**	1.2	No
3	I-110	at Sepulveda Boulevard	NB	22.3	C	83	22.7	C	0.4	No
			SB	**35.1**	**E**	192	**36.6**	**E**	1.5	No
4	I-110	at El Segundo Boulevard	NB	**26.5**	**D**	288	**27.6**	**D**	1.1	No
			SB	**36.0**	**E**	124	**36.8**	**D**	0.8	No
5	I-405	at I-710	NB	**45.5**	**F**	83	**46.4**	**F**	0.9	**Yes**
			SB	**127.4**	**F**	192	**140.1**	**F**	12.7	**Yes**
6	I-405	south of I-110 (Carson Scales)	NB	25.8	C	83	**26.1**	**D**	0.3	No
			SB	**31.1**	**D**	192	**32.0**	**D**	0.9	No
7	I-405	at Western Avenue	NB	**33.8**	**D**	288	**35.6**	**E**	1.8	No
			SB	**39.3**	**E**	124	**40.2**	**E**	0.9	No

Bold and shaded = Unacceptable evel of service (LOS D or w orse). Pc/mi/ln = passenger-car per mile per lane.

TABLE 8.11: FUTURE YEAR (2035) WITH PROJECT QUEUE ANALYSIS

ID	Ramp	Cross Street	Ramp Length (ft) [a]	85% Ramp Length (ft)	Ramp Turn Lanes at Intersection			AM Queue		PM Queue		Queue Exceeds 85% Storage?	
					Lanes	Movement	Length [a]	Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	AM	PM
11	I-110 Southbound Off-Ramp	Carson Street	980	840	2	Left	980	65	886	211	1051	Yes	Yes
						Right	380	886		1051			
19	I-405 Southbound Off-Ramp	Carson Street	1,100	940	2	Left	660	44	44	36	36	No	No
						Right	1,100	43		31			
20	I-405 Northbound Off-Ramp	Carson Street	1,200	1,020	2	Through/Left	1,200	28	244	34	185	No	No
						Right	620	244		185			
24	I-110 Northbound Off-Ramp	Figueroa Street	1,150	980	2	Through/Left	1,150	872	872	775	775	No	No
						Right	530	141		109			
29	I-110 Southbound Off-Ramp	223rd Street	935	800	2	Through/Left	935	679	679	911	911	No	Yes
						Right/Through	405	679		911			
32	I-110 Southbound Off-Ramp	Hamilton Avenue	890	760	3	Left	890	970	970	148	148	Yes	No
						Left	355	970		148			
						Right	40	48		23			
33	I-110 Northbound Off-Ramp	Figueroa Street	880	750	2	Left	880	527	527	302	302	No	No
						Right/Left	340	310		144			
34	I-405 Northbound Off-Ramp	Avalon Boulevard	980	830	3	Left	980	41	268	49	200	No	No
						Through/Left	320	42		49			
						Right	320	268		200			
35	I-405 Southbound Off-Ramp	Avalon Boulevard	390	330	5	Left	390	81	286	60	194	No	No
						Left	390	81		60			
						Through	390	3		31			
						Through	390	3		31			
						Right	240	286		194			

[a] = Length measured from scaled aerial images.

TABLE 8.12: FUTURE YEAR (2035) WITH PROJECT VMT SUMMARY

Land Use	Average Daily Trip Rate			Annual VMT	Population / Employees	Annual VMT Per Capita
	Weekday	Saturday	Sunday			
Apartments (Mid-Rise)	18,161.15	17,451.09	16,003.66	**60,659,573**	**7,659**	**7,920**
General Light Industry	4,346.56	823.16	424.06	**14,537,421**	**563**	**25,821**
General Office Building	14,947.20	3,333.65	1,422.89	**36,583,146**	**2,754**	**13,284**
Hospital	24,788.16	19,088.01	16,706.70	**88,467,041**	**5,979**	**14,796**
Single Family Housing	11,443.04	11,911.82	10,361.24	**38,803,352**	**3,244**	**11,962**
Strip Mall	37,427.79	35,502.36	17,252.93	**65,203,101**	**939**	**69,439**
Unrefrigerated Warehouse - No Rail	0.00	0.00	0.00	**0**	**0**	-
Total	**111,113.90**	**88,110.09**	**62,171.48**	**304,253,634**	**21,138**	**143,222**

TABLE 8.13: FUTURE YEAR (2035) WITH PROJECT + PASS-BY, INTERNAL CAPTURE, AND TDM TRIP REDUCTIONS VMT SUMMARY

Land Use	Average Daily Trip Rate			Annual VMT	Population / Employees	Annual VMT Per Capita
	Weekday	Saturday	Sunday			
Apartments (Mid-Rise)	12,525.20	12,035.49	11,037.24	**41,835,088**	**7,659**	**5,462**
General Light Industry	3,794.54	718.62	370.21	**12,691,168**	**563**	**22,542**
General Office Building	10,202.36	2,275.42	971.21	**24,970,192**	**2,754**	**9,067**
Hospital	21,863.16	16,835.63	14,735.31	**78,027,930**	**5,979**	**13,050**
Single Family Housing	7,891.92	8,215.23	7,145.84	**26,761,508**	**3,244**	**8,250**
Strip Mall	22,619.48	21,455.85	10,426.81	**39,405,495**	**939**	**41,965**
Unrefrigerated Warehouse - No Rail	0.00	0.00	0.00	**0**	**0**	-
Total	**78,896.66**	**61,536.24**	**44,686.62**	**223,691,381**	**21,138**	**100,336**

9 MITIGATION MEASURES AND FUNDING

This section provides a summary of the mitigation process utilized for this project. The first phase of the process consists of identifying intersections, freeway segments, and freeway off-ramps significantly impacted by the addition of project traffic. Upon identification of the facilities, measures which would result in full mitigation of the impacts were developed. Fair share calculations were prepared in order to assess the expected contribution of the project to intersection mitigation funding.

9.1 SIGNIFICANT IMPACT IDENTIFICATION

The proposed project is anticipated to create significant traffic impacts at fourteen of the study intersections and one freeway mainline study locations in the Existing Year (2016) With Project Scenario; significant impacts at seventeen study intersections and one freeway mainline location are anticipated for the Future Year (2035) With Project scenario. A summary of the impacts and the scenarios in which they occur is provided in Table 9.1 below:

TABLE 9.1: SIGNIFICANT IMPACT SUMMARY

ID	Location	Existing Year (2016) With Project		Future Year (2035) With Project	
		AM	PM	AM	PM
INTERSECTION					
1	Normandie / Torrance	**X**		**X**	**X**
2	Vermont / Torrance	**X**	**X**	**X**	**X**
6	Western / Carson	**X**	**X**	**X**	**X**
7	Normandie / Carson	**X**	**X**	**X**	**X**
9	Berendo / Carson				**X**
10	Vermont / Carson	**X**	**X**	**X**	**X**
11	SB I-110 Ramps / Carson	**X**	**X**	**X**	**X**
24	Figueroa / 220th and NB I-110	**X**	**X**	**X**	**X**
25	Western / 223rd	**X**	**X**	**X**	**X**
26	Normandie / 223rd			**X**	**X**
27	Meyler / 223rd	**X**		**X**	**X**
28	Vermont / 223rd	**X**	**X**	**X**	**X**
29	SB I-110 Ramps / 223rd	**X**	**X**	**X**	**X**
30	Figueroa / 223rd			**X**	**X**
32	SB I-110 Ramps / Hamilton	**X**	**X**	**X**	**X**
36	Western / Torrance		**X**	**X**	**X**
37	Western / 220th		**X**		**X**
FREEWAY MAINLINE					
5	I-405 at I-710	**X**	**X**	**X**	**X**

Bold and shaded = Significant impact due to onset of project traffic compared to the No Project scenario.

9.2 EXISTING YEAR (2016) WITH PROJECT + MITIGATION INTERSECTION MITIGATION MEASURES

The intersections significantly impacted by the addition of project-generated traffic and their respective mitigation measures are listed below:

- **MM1 – Normandie Avenue and Torrance Boulevard:** Full mitigation of the impact observed at this intersection is expected with the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; the Adaptive Traffic Control System (ATCS) software is to be employed as well. Implementation of this measure mitigates all significant impacts.
- **MM2 – Vermont Avenue and Torrance Boulevard:** Modifications to the westbound, eastbound, northbound, and southbound approaches were explored. One right-turn pocket is to be added in the eastbound and westbound directions; a 60 foot minimum length is recommended for the pocket. The eastbound and westbound approaches are to consist of one left-turn lane, two through lanes, and one right-turn pocket. The northbound and southbound right-turn lanes are to be restriped to be through-right lanes. The northbound and southbound approaches are to feature one left-turn lane, two through lanes, and one through-right lane. The proposed enhancements will require the acquisition of right-of-way for the westbound and eastbound improvements. Implementation of this measure does not fully mitigate all significant impacts; however, an acceptable LOS is anticipated during both peak hours. Further expansion of this measure requires right-of-way acquisition that is believed to be infeasible due to the development of the adjacent land. The impact at this intersection is to be significant and unavoidable.
- **MM6 – Western Avenue and Carson Street:** Full mitigation of the impact observed at this intersection is expected with the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; the Adaptive Traffic Control System (ATCS) software is to be employed as well. Implementation of this measure mitigates all significant impacts.
- **MM7 – Normandie Avenue and Carson Street:** The impact observed at this intersection is expected to be full mitigated with the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; the Adaptive Traffic Control System (ATCS) software is to be employed as well. Implementation of this measure mitigates all significant impacts.
- **MM10 – Vermont Avenue and Carson Street:** Modifications to the eastbound, westbound, and southbound approaches were explored as intersection capacity improvements. Westbound and eastbound modifications include restriping the right-turn lanes to be a through-right lane. Both approaches are to feature one left-turn lane, two through lanes, and one through-right lane. The southbound approach is to be modified such that an additional left-turn pocket is provided; left-turn phasing controls for this approach is to be set to protected. The southbound approach is to feature two left-turn lanes, two through lanes, and one right-turn lane. Minor right-of-way acquisition may be required in order to provide these modifications in addition to the bike lanes proposed in the *West Carson Transit Oriented Development Specific Plan*. Preliminary concepts of the plan propose the addition of bike lanes in the eastbound and westbound directions along Carson Street at this intersection. Implementation of this measure does not fully mitigate all significant impacts; however, it should be noted that the intersection LOS is returned to an acceptable LOS in both peak hours. Further expansion of this measure requires right-of-way acquisition that is believed to be infeasible due to the development of the adjacent land. The impact at this intersection is to be significant and unavoidable.

- **MM11 – SB I-110 Ramps and Carson Street:** Modifications to the eastbound, westbound, and southbound approaches were explored as intersection capacity improvements. The improvements consist of: restriping the southbound approach to feature a right-turn lane and a shared left-/right-turn lane; restriping of the westbound approach to provide an additional through lane; modify eastbound approach in order to provide a right-turn pocket. The eastbound approach is to feature three through lanes and one right-turn pocket; a 40 foot minimum length is recommended. Additionally, it is advised that the pedestrian crossing across Carson Street be evaluated for pedestrian safety and/or need. Coordination with and approval by Caltrans is required for the implementation of the proposed southbound restriping. Implementation of this measure fully mitigates all impacts.
- **MM24 – Figueroa Street and 220th Street / NB I-110 Ramps:** Per the Transportation and Infrastructure Element of the Carson General Plan, Figueroa Street is to be widened to three lanes in each direction between Carson Street and 223rd Street. Given this information, intersection improvements such as the restriping of the eastbound, northbound, and southbound approaches were considered. The southbound approach is to be restriped to feature one right-turn lane, one through-right lane, one through lane, and a left turn lane. The northbound approach is to be restriped to feature two left-turn lanes, one through lane, and one through-right lane. The eastbound approach is to be restriped to feature one left-turn lane and one through-right lane. Signage showing the lane layout for the intersection should be provided for the eastbound, northbound, and southbound directions, per standards outlined in the California Manual on Uniform Traffic Control Devices (CAMUTCD). The southbound phasing controls should be modified to reflect the following: permitted left-turn and permitted-overlap right-turn. Additional signal modifications may be necessary when implementing the proposed lane configurations. Implementation of this measure fully mitigates all significant impacts.
- **MM25 – Western Avenue and 223rd Street:** Full mitigation of the impact observed at this intersection is expected with the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; implementation of the Adaptive Traffic Control System (ATCS) software is to be implemented as well. Implementation of this measure mitigates all significant impacts.
- **MM27 – Meyler Street and 223rd Street:** Striping modifications to the westbound approach was explored. An additional through lane is to be added in the westbound direction; the approach is to feature one left-turn lane, two through lanes, and one through-right lane. The addition of the proposed lane requires the removal of on-street parking on the south side of 223rd Street. Implementation of this measure mitigates all significant impacts.
- **MM28 – Vermont Avenue and 223rd Street:** Modifications to the southbound approach was considered. The southbound approach is to be restriped to provide an additional left-turn lane; left-turn phasing control is to be set to protected. The southbound approach is to feature two left-turn lanes, one through lane, and one through-right lane. Implementation of this measure does not fully mitigate all significant impacts; the intersection LOS is returned to an acceptable LOS in the PM peak hour, but is anticipated to perform at an unacceptable LOS during the AM peak hour. Further expansion of this measure requires right-of-way acquisition that is believed to be infeasible due to the development of the adjacent land as well as the addition of bike lanes put forth in the *West Carson Transit Oriented Development Specific Plan*. Preliminary concepts of the plan propose the addition of bike lanes in the eastbound and westbound directions along 223rd Street at this intersection. The impact at this intersection is to be significant and unavoidable.
- **MM29 – SB I-110 Ramps and 223rd Street:** Intersection improvements such as the restriping of the eastbound and modifications to southbound approaches were explored.

In order to fully mitigate the impacts in all scenarios, the following measures were identified: restriping of the eastbound right-turn lane to be a through-right lane; modification of the southbound approach such that a right-turn lane, shared through-/left-/right-turn lane, and left-turn lane are provided. Implementation of this measure will require the acquisition of right-of-way. Signage showing the lane configurations for the eastbound and southbound approaches should be provided, per standards outlined in the California Manual on Uniform Traffic Control Devices (CAMUTCD). Additionally, coordination with and approval by Caltrans is required for the implementation of the southbound restriping.

- **MM32 – Hamilton Avenue and SB I-110 Ramps:** Intersection improvements such as the signalization of the intersection, restriping of the southbound lanes, and restriping of the eastbound receiving lanes were explored. All improvements are believed to be feasible and appropriate measures. The eastbound receiving lanes are to be restriped such that the outside receiving lane can accommodate the proposed northbound free-right-turn lane. The north leg will require restriping such that one southbound through lane, a two-way-left-turn lane (TWLTL), and two northbound through lanes are provided. The two southbound receiving lanes at the intersection of Del Amo Boulevard and Hamilton Avenue are to merge in order to provide the TWLTL; the TWLTL is to become a 180' southbound left-turn pocket at the intersection of Hamilton Avenue and the Southbound I-110 Ramps. The proposed phasing is as follows: permitted phasing for the northbound approach; protected left-turn phasing for the southbound approach; and split phasing for the westbound approach. Implementation of this measure fully mitigates all impacts.
- **MM36 – Western Avenue and Torrance Boulevard:** Full mitigation of the impact observed at this intersection is expected with the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; the Adaptive Traffic Control System (ATCS) software is to be employed as well. Implementation of this measure mitigates all significant impacts.
- **MM37 – Western Avenue and 220th Street:** Full mitigation of the impact observed at this intersection is expected with the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; the Adaptive Traffic Control System (ATCS) software is to be employed as well. Implementation of this measure mitigates all significant impacts.

A summary of the study intersection performance, with the implementation of the aforementioned mitigation measures, for the AM and PM peak hours of the Existing Year (2016) With Project are provided in Table 9.3 and Table 9.4, respectively.

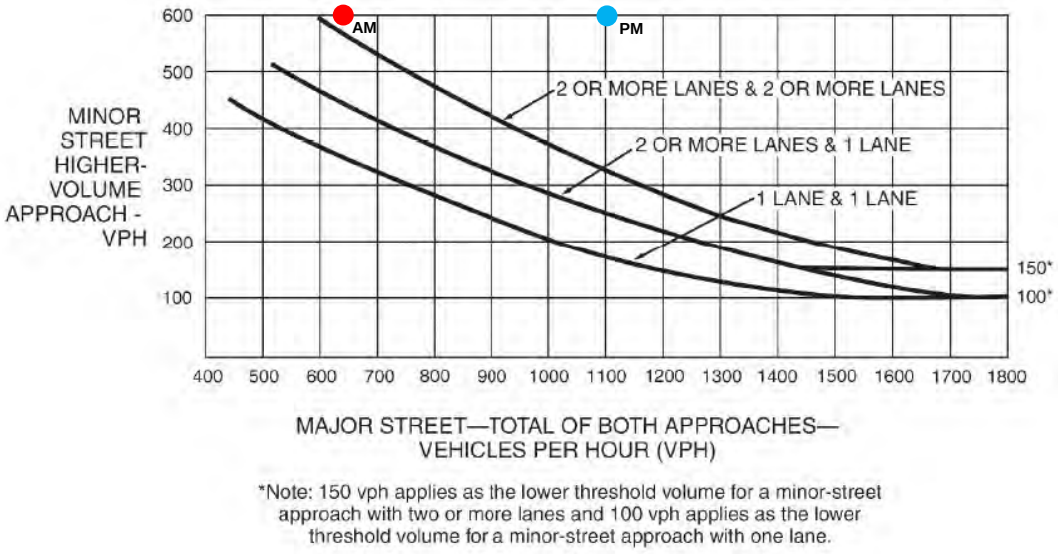
9.3 EXISTING YEAR (2016) WITH PROJECT + MITIGATION FREEWAY OFF-RAMP QUEUE ANALYSIS

As shown in Table 7.11, two locations were identified as experiencing a queue greater than 85% of the measured queue capacity (lane length). Upon implementation of the respective intersection mitigation measure outlined in Section 9.2, all freeway off-ramps are expected to provide sufficient queue storage such that 85% of the queue capacity is not exceeded by estimated queues. An updated queue analysis is presented in Table 9.5 for the aforementioned intersections.

9.4 EXISTING YEAR (2016) WITH PROJECT + MITIGATION CALTRANS WARRANT 3, PEAK HOUR ANALYSIS

Per the Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002), a signal warrant analysis is to be performed to determine the need for a traffic signal. Of the methods outlined in the guidelines, option B was chosen (use of Table 4C-3 in the guidelines). The analysis was performed in response to the proposal of the signalization of the intersection of Hamilton Avenue and the I-110 southbound ramps. The plot of the intersection data is presented in Table 9.2. The AM and PM coordinates are (645, 1482) and (1129, 686), respectively. Both points are placed at the topmost position, but it should be noted that the actual positions cannot be plotted with the axis range of the table. Hamilton Avenue was taken as the major street; the SB I-110 Ramps were taken as the minor street.

TABLE 9.2: WARRANT 3, PEAK HOUR ANALYSIS



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

9.5 EXISTING YEAR (2016) WITH PROJECT + MITIGATION INTERSECTION IMPACT MITIGATION FUNDING

Due to the manner in which fair share calculations are prepared, calculations are not provided for this scenario as the project traffic is 100% of the total new traffic. Therefore, all mitigation costs are to be funded by the development project.

TABLE 9.3: EXISTING YEAR (2016) WITH PROJECT SIGNIFICANT IMPACT COMPARISON – AM PEAK HOUR

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	EXISTING		WITH PROJECT				Intersection Control	WITH PROJECT + MITIGATION			
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS	Change in V/C or Delay	Significant Impact?		V/C or Delay (S)	LOS	Change in V/C or Delay	Significant Impact?
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**0.946**	**E**	**0.965**	**E**	0.019	Yes	Signalized	0.865	D	-0.081	No
		County of Los Angeles	ICU	Signalized	0.786	C	0.796	C	0.010	No	Signalized	0.724	C	-0.062	No
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.782	C	0.888	D	0.106	Yes	Signalized	0.818	D	0.036	No
6	Western / Carson	City of Torrance	HCM	Signalized	25.0	C	30.0	C	5.0	No	Signalized	24.4	C	-0.6	No
		City of Los Angeles	CMA	Signalized	0.874	D	**0.930**	**E**	0.056	Yes	Signalized	0.830	D	-0.044	No
		Caltrans	HCM	Signalized	25.0	C	30.0	C	5.0	No	Signalized	24.4	C	-0.6	No
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	0.870	D	0.896	D	0.026	Yes	Signalized	0.796	C	-0.074	No
		County of Los Angeles	ICU	Signalized	0.747	C	0.770	C	0.023	No	Signalized	0.700	B	-0.047	No
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.758	C	**1.026**	**F**	0.268	Yes	Signalized	0.888	D	0.130	Yes
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.724	C	**1.086**	**F**	0.362	Yes	Signalized	0.660	B	-0.064	No
		Caltrans	HCM	Signalized	27.1	C	**103.0**	**F**	75.9	Yes	Signalized	24.8	C	-2.3	No
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	0.871	D	**1.153**	**F**	0.282	Yes	Signalized	0.860	D	-0.011	No
		Caltrans	HCM	Signalized	**52.6**	**D**	**89.9**	**F**	37.3	Yes	Signalized	53.3	C	0.7	No
25	Western / 223rd	City of Torrance	HCM	Signalized	27.3	C	35.5	D	8.2	No	Signalized	27.4	C	0.1	No
		City of Los Angeles	CMA	Signalized	0.881	D	**0.981**	**E**	0.100	Yes	Signalized	0.881	D	0.000	No
		Caltrans	HCM	Signalized	27.3	C	**35.5**	**D**	8.2	Yes	Signalized	27.4	C	0.1	No
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.593	A	0.817	D	0.224	Yes	Signalized	0.639	B	0.046	No
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.845	D	**1.119**	**F**	0.274	Yes	Signalized	**1.041**	**F**	0.196	Yes
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.748	C	**1.036**	**F**	0.288	Yes	Signalized	0.677	B	-0.071	No
		Caltrans	HCM	Signalized	18.6	B	**42.3**	**D**	23.7	Yes	Signalized	23.3	C	4.7	No
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.032**	**F**	**1.404**	**F**	0.372	Yes	Signalized	0.718	C	-0.314	-
		Caltrans	HCM	AWSC	**49.9**	**E**	**140.5**	**F**	90.600	Yes	Signalized	21.4	C	-28.5	-
36	Western / Torrance	City of Torrance	HCM	Signalized	40.9	D	41.4	D	0.5	No	Signalized	33.0	C	-7.9	No
		City of Los Angeles	CMA	Signalized	0.880	D	0.884	D	0.004	No	Signalized	0.784	C	-0.096	No
		Caltrans	HCM	Signalized	**40.9**	**D**	**41.4**	**D**	0.5	No	Signalized	33.0	C	-7.9	No
37	Western / 220th	City of Torrance	HCM	Signalized	7.2	A	8.9	A	1.7	No	Signalized	7.1	A	-0.1	No
		City of Los Angeles	CMA	Signalized	0.591	A	0.662	B	0.071	No	Signalized	0.562	A	-0.029	No
		Caltrans	HCM	Signalized	7.2	A	8.9	A	1.7	No	Signalized	7.1	A	-0.1	No

AWSC = All Way Stop Control. **Bold and shaded** = Intersection operates at an unacceptable LOS using the methodology listed.

TABLE 9.4: EXISTING YEAR (2016) WITH PROJECT SIGNIFICANT IMPACT COMPARISON – PM PEAK HOUR

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	EXISTING		WITH PROJECT				Intersection Control	WITH PROJECT + MITIGATION			
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS	Change in V/C or Delay	Significant Impact?		V/C or Delay (S)	LOS	Change in V/C or Delay	Significant Impact?
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**0.989**	**E**	**0.989**	**E**	0.000	No	Signalized	0.889	D	-0.100	No
		County of Los Angeles	ICU	Signalized	0.850	D	0.850	D	0.000	No	Signalized	0.772	C	-0.078	No
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.770	C	**0.911**	**E**	0.141	Yes	Signalized	0.875	D	0.105	Yes
6	Western / Carson	City of Torrance	HCM	Signalized	37.4	D	51.3	D	13.9	No	Signalized	36.9	D	-0.5	No
		City of Los Angeles	CMA	Signalized	**0.999**	**E**	**1.093**	**F**	0.094	Yes	Signalized	**0.993**	**E**	-0.006	No
		Caltrans	HCM	Signalized	**37.4**	**D**	**51.3**	**D**	13.9	No	Signalized	**36.9**	**D**	-0.5	No
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	0.900	D	**0.962**	**E**	0.062	Yes	Signalized	0.862	D	-0.038	No
		County of Los Angeles	ICU	Signalized	0.773	C	0.827	D	0.054	Yes	Signalized	0.752	C	-0.021	No
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.702	C	**0.974**	**E**	0.272	Yes	Signalized	0.771	C	0.069	Yes
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.665	B	0.897	D	0.232	Yes	Signalized	0.677	B	0.012	No
		Caltrans	HCM	Signalized	20.9	C	**60.5**	**E**	39.6	Yes	Signalized	21.6	C	0.7	No
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	0.786	C	**1.237**	**F**	0.451	Yes	Signalized	0.812	D	0.026	No
		Caltrans	HCM	Signalized	**46.1**	**D**	**134.4**	**F**	88.3	Yes	Signalized	**48.4**	**D**	2.3	No
25	Western / 223rd	City of Torrance	HCM	Signalized	29.4	C	31.3	C	1.9	No	Signalized	24.4	C	-5.0	No
		City of Los Angeles	CMA	Signalized	**0.930**	**E**	**0.941**	**E**	0.011	Yes	Signalized	0.841	D	-0.089	No
		Caltrans	HCM	Signalized	29.4	C	31.3	C	1.9	No	Signalized	24.4	C	-5.0	No
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.523	A	0.694	B	0.171	No	Signalized	0.694	B	0.171	No
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.769	C	**1.009**	**F**	0.240	Yes	Signalized	0.880	D	0.111	Yes
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.818	D	**1.028**	**F**	0.210	Yes	Signalized	0.749	C	-0.069	No
		Caltrans	HCM	Signalized	28.4	C	**64.3**	**E**	35.9	Yes	Signalized	26.8	C	-1.6	No
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.115**	**F**	**1.173**	**F**	0.058	Yes	Signalized	0.618	B	-0.497	-
		Caltrans	HCM	AWSC	**128.4**	**F**	**139.0**	**F**	10.6	Yes	Signalized	18.4	B	-110.0	-
36	Western / Torrance	City of Torrance	HCM	Signalized	34.1	C	36.4	D	2.3	No	Signalized	31.0	C	-3.1	No
		City of Los Angeles	CMA	Signalized	0.823	D	0.836	D	0.013	No	Signalized	0.736	C	-0.087	No
		Caltrans	HCM	Signalized	34.1	C	**36.4**	**D**	2.3	Yes	Signalized	31.0	C	-3.1	No
37	Western / 220th	City of Torrance	HCM	Signalized	14.6	B	15.0	B	0.4	No	Signalized	12.4	B	-2.2	No
		City of Los Angeles	CMA	Signalized	0.807	D	0.848	D	0.041	Yes	Signalized	0.748	C	-0.059	No
		Caltrans	HCM	Signalized	14.6	B	15.0	B	0.4	No	Signalized	12.4	B	-2.2	No

AWSC = All Way Stop Control. **Bold and shaded** = Intersection operates at an unacceptable LOS using the methodology listed.

TABLE 9.5: EXISTING YEAR (2016) WITH PROJECT + MITIGATION QUEUE ANALYSIS

ID	Ramp	Cross Street	Ramp Length (ft) [a]	85% Ramp Length (ft)	Ramp Turn Lanes at Intersection			AM Queue		PM Queue		Queue Exceeds 85% Storage?	
					Lanes	Movement	Length [a]	Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	AM	PM
11	I-110 Southbound Off-Ramp	Carson Street	980	830	2	Left	980	417	417	298	298	No	No
						Right	380	412		285			
32	I-110 Southbound Off-Ramp	Hamilton Avenue	890	760	3	Left	890	426	426	177	177	No	No
						Left	355	426		177			
						Right	40	121		70			

[a] = Length measured from scaled aerial images.

9.6 FUTURE YEAR (2035) WITH PROJECT + MITIGATION INTERSECTION MITIGATION MEASURES

The intersections significantly impacted by the addition of project-generated traffic and their respective mitigation measures are listed below:

- **MM1 – Normandie Avenue and Torrance Boulevard:** Intersection improvements such as the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection and restriping the eastbound approach to provide a right-turn pocket were explored and are believed to be feasible enhancements. A 60' minimum is recommended for the right-turn pocket. The eastbound approach is to feature one left-turn lane, two through lanes, and one right-turn pocket. Additional restriping of the east-west approaches should be expected in order to account for the lane shift due to the addition of the proposed lane. All significant impacts are mitigated with implementation of this measure.
- **MM2 – Vermont Avenue and Torrance Boulevard:** Modifications to the westbound, eastbound, northbound, and southbound approaches were explored. One right-turn pocket is to be added in the eastbound and westbound directions; a 60 foot minimum length is recommended for the pocket. The eastbound and westbound approaches are to consist of one left-turn lane, two through lanes, and one right-turn pocket. The northbound and southbound right-turn lanes are to be restriped to be through-right lanes. The northbound and southbound approaches are to feature one left-turn lane, two through lanes, and one through-right lane. The proposed enhancements will require the acquisition of right-of-way for the westbound and eastbound improvements. Implementation of this measure does not fully mitigate all significant impacts; the intersection LOS is returned to an acceptable LOS in the AM peak hour, but is anticipated to perform at an unacceptable LOS during the PM peak hour. Further expansion of this measure requires right-of-way acquisition that is believed to be infeasible due to the development of the adjacent land. The impact at this intersection is to be significant and unavoidable.
- **MM6 – Western Avenue and Carson Street:** Full mitigation of the impact observed at this intersection is expected with the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; the supplementary Adaptive Traffic Control System (ATCS) software is to be employed as well. Implementation of this measure mitigates all significant impacts.
- **MM7 – Normandie Avenue and Carson Street:** The impact observed at this intersection is expected to be fully mitigated by restriping the westbound approach in addition to expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; the Adaptive Traffic Control System (ATCS) software is to be employed as well. The westbound approach is to feature one left-turn lane, two through lanes, and one through-right lane. Implementation of this measure mitigates all significant impacts.
- **MM9 – Berendo Avenue and Carson Street:** Signal improvements to the northbound approach were considered. It was found that all impacts were fully mitigated by modifying the northbound right-turn phase control to be permitted-overlap.
- **MM10 – Vermont Avenue and Carson Street:** Modifications to the eastbound, westbound, northbound, and southbound approaches were explored as intersection improvements. Conversion of the right-turn lane to a through-right in every direction is believed to be a feasible striping improvement. All approaches are to feature one left-turn lane, two through lanes, and one through-right lane. Right-of-way acquisition may be required in order to add these lanes in addition to the bike lanes proposed in the *West Carson Transit Oriented Development Specific Plan*. Preliminary concepts of the plan propose the addition of bike lanes in the eastbound and westbound directions along

Carson Street at this intersection. Implementation of this measure does not fully mitigate all significant impacts; the intersection LOS is anticipated to perform at an unacceptable LOS during both peak hours. Further expansion of this measure requires right-of-way acquisition that is believed to be infeasible due to the development of the adjacent land. The impact at this intersection is to be significant and unavoidable.

- **MM11 – SB I-110 Ramps and Carson Street:** Modifications to the eastbound, westbound, and southbound approaches were explored as intersection capacity improvements. The improvements consist of: restriping the southbound approach to feature one right-turn lane and one shared left-/right-turn lane; restriping of the westbound approach to provide an additional through lane; modify eastbound approach in order to provide a right-turn pocket. The eastbound approach is to feature three through lanes and one right-turn pocket; a 40 foot minimum length is recommended. The westbound approach is to feature one left-turn lane and three through lanes. Additionally, it is advised that the pedestrian crossing across Carson Street be evaluated for pedestrian safety and/or need. Coordination with and approval by Caltrans is required for the implementation of the proposed southbound enhancements. Implementation of this measure fully mitigates all significant impacts.
- **MM24 – Figueroa Street and 220th Street / NB I-110 Ramps:** Per the Transportation and Infrastructure Element of the Carson General Plan, Figueroa Street is to be widened to three lanes in each direction between Carson Street and 223rd Street. Given this information, intersection improvements such as the restriping of the eastbound, northbound, and southbound approaches were considered. The southbound approach is to be restriped to feature one right-turn lane, one through-right lane, one through lane, and a left turn lane. The northbound approach is to be restriped to feature two left-turn lanes, one through lane, and one through-right lane. The eastbound approach is to be restriped to feature one left-turn lane and one through-right lane. Signage showing the lane layout for the intersection should be provided for the eastbound, northbound, and southbound directions, per standards outlined in the California Manual on Uniform Traffic Control Devices (CAMUTCD). Existing phasing is to remain in place; however, signal modifications may be necessary when implementing the proposed lane configurations. Implementation of this measure fully mitigates all significant impacts.
- **MM25 – Western Avenue and 223rd Street:** Full mitigation of the impact observed at this intersection is expected with the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; implementation of the Adaptive Traffic Control System (ATCS) software is to be implemented as well. Implementation of this measure mitigates all significant impacts.
- **MM26 – Normandie Avenue and 223rd Street:** Full mitigation of the impact observed at this intersection is expected with the restriping of the eastbound approach and expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; implementation of the Adaptive Traffic Control System (ATCS) software is to be implemented as well. The eastbound approach is to feature one left-turn lane, two through lanes, and one through-right lane. Additional restriping is expected for the lane shifts due to the proposed striping. Implementation of this measure mitigates all significant impacts.
- **MM27 – Meyler Street and 223rd Street:** Striping modifications to the westbound and southbound approaches were explored. An additional through lane is to be added in the westbound direction; the westbound approach is to feature one left-turn lane, two through lanes, and one through-right lane. The southbound approach is to be restriped to feature a left-turn lane and a through-right lane. The addition of the proposed lane requires the removal of on-street parking on the south side of 223rd Street. Implementation of this measure mitigates all significant impacts.

- **MM28 – Vermont Avenue and 223rd Street:** Improvements to the southbound approach were considered. The southbound approach is to be restriped to provide an additional left-turn lane; left-turn phasing control is to be set to protected. The southbound approach is to feature two left-turn lanes, one through lane, and one through-right lane. Implementation of this measure does not fully mitigate all significant impacts. This intersection is anticipated to perform at an unacceptable LOS during the both peak hours. Further expansion of this measure requires right-of-way acquisition that is believed to be infeasible due to the development of the adjacent land as well as the addition of bike lanes put forth in the *West Carson Transit Oriented Development Specific Plan*. Preliminary concepts of the plan propose the addition of bike lanes in the eastbound and westbound directions along 223rd Street at this intersection. The impact at this intersection is to be significant and unavoidable.
- **MM29 – SB I-110 Ramps and 223rd Street:** Modifications to the eastbound and southbound approaches were explored. In order to fully mitigate all impacts, the following enhancements were identified: restriping of the eastbound right-turn lane to be a through-right lane and restriping of the southbound approach such that one left-turn lane, one shared left-/through/right-turn lane, and one right-turn lane are provided. Signage showing the lane configurations for the southbound approach should be provided, per standards outlined in the California Manual on Uniform Traffic Control Devices (CAMUTCD). Implementation of this measure will require the acquisition of right-of-way. Additionally, coordination with and approval by Caltrans is required for the implementation of the southbound restriping. It should be noted that implementation of this measure is complimentary to the improvements outlined in MM28.
- **MM30 – Figueroa Street and 223rd Street:** Per the Transportation and Infrastructure Element of the Carson General Plan, Figueroa Street is to be widened to three lanes in each direction between Carson Street and 223rd Street. Given this information, striping configurations for the westbound and southbound approaches were explored. The westbound approach is to be restriped to feature one left-turn lane, two through lanes, and one through-right lane. The southbound approach is to feature one left-turn lane, two through lanes, and one right-turn lane; the right-turn phasing control is to be changed to permitted-overlap. Implementation of this configuration mitigates all significant impacts.
- **MM32 – Hamilton Avenue and SB I-110 Ramps:** Intersection improvements such as the signalization of the intersection, restriping of the southbound lanes, and restriping of the eastbound receiving lanes were explored. All improvements are believed to be feasible and appropriate measures. The eastbound receiving lanes are to be restriped such that the outside receiving lane can accommodate the proposed northbound free-right-turn lane. The north leg will require restriping such that one southbound through lane, a two-way-left-turn lane (TWLTL), and two northbound through lanes are provided. The two southbound receiving lanes at the intersection of Del Amo Boulevard and Hamilton Avenue are to merge in order to provide the TWLTL; the TWLTL is to become a 180' southbound left-turn pocket at the intersection of Hamilton Avenue and the Southbound I-110 Ramps. The proposed phasing is as follows: permitted phasing for the northbound approach; protected left-turn phasing for the southbound approach; and split phasing for the westbound approach. Implementation of this measure fully mitigates all impacts.
- **MM36 – Western Avenue and Torrance Boulevard:** Full mitigation of the impact observed at this intersection is expected with the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; the Adaptive Traffic Control System (ATCS) software is to be employed as well. Implementation of this measure mitigates all significant impacts.
- **MM37 – Western Avenue and 220th Street:** Full mitigation of the impact observed at this intersection is expected with the expansion of the Automated Traffic Surveillance and Control (ATSAC) network to include this intersection; the Adaptive Traffic Control System

(ATCS) software is to be employed as well. Implementation of this measure mitigates all significant impacts.

A summary of the study intersection performance, with the implementation of the aforementioned mitigation measures, for the AM and PM peak hours of the Future Year (2035) With Project is provided in Table 9.7 and Table 9.8, respectively. Fair share calculations are provided in Table 9.10.

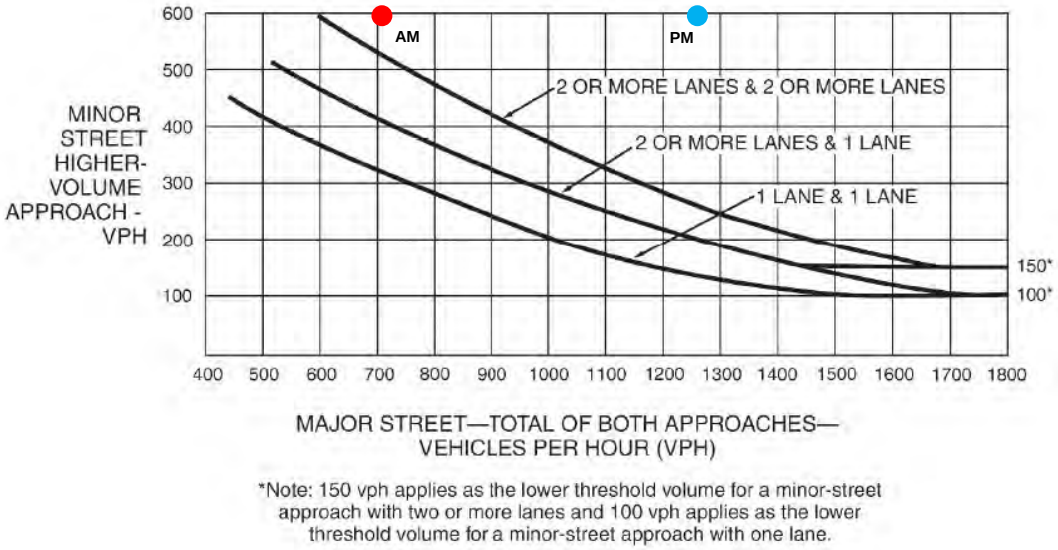
9.7 FUTURE YEAR (2035) WITH PROJECT + MITIGATION FREEWAY OFF-RAMP QUEUE ANALYSIS

As shown in Table 8.11, three locations were identified as experiencing a queue greater than 85% of the measured queue capacity (lane length). Upon implementation of the respective intersection mitigation measure outlined in Section 9.6, all freeway off-ramps are expected to provide sufficient queue storage such that 85% of the queue capacity is not exceeded by estimated queues. An updated queue analysis is presented in Table 9.9 for the aforementioned intersections.

9.8 FUTURE YEAR (2035) WITH PROJECT + MITIGATION CALTRANS WARRANT 3, PEAK HOUR ANALYSIS

Per the Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002), a signal warrant analysis is to be performed to determine the need for a traffic signal. Of the methods outlined in the guidelines, option B was chosen (use of Table 4C-3 in the guidelines). The analysis was performed in response to the proposal of the signalization of the intersection of Hamilton Avenue and the I-110 southbound ramps. The plot of the intersection data is presented in Table 9.5. The AM and PM coordinates are (727, 1251) and (1274, 614), respectively; both points are placed at the topmost position, but it should be noted that the actual positions cannot be plotted with the axis range of the table. Hamilton Avenue was taken as the major street; the SB I-110 Ramps were taken as the minor street.

TABLE 9.6: WARRANT 3, PEAK HOUR ANALYSIS



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

9.9 FUTURE YEAR (2035) WITH PROJECT + MITIGATION INTERSECTION IMPACT MITIGATION FUNDING

Fair share calculations were prepared in order to calculate developer contributions to mitigation measures for intersections impacted by project traffic. Fair share calculations were developed by calculating the project-generated traffic and the total new traffic at each intersection where mitigation was proposed. The project-generated traffic was then divided by the total new traffic in order to establish the percent increase of traffic for which the project is responsible. This presents the proportional contribution of project traffic, as well as proportional mitigation funding, at each intersection for the AM and PM peak hours. The fair share is taken to be the maximum of the peak hour contributions. The fair share calculations are presented in Table 9.8. The equation is presented below:

$$Fair\ Share\ (\%) = \frac{Project\ Traffic}{Total\ New\ Traffic} \times 100\%$$

TABLE 9.7: FUTURE YEAR (2035) WITH PROJECT SIGNIFICANT IMPACT COMPARISON – AM PEAK HOUR

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	FUTURE [a]		WITH PROJECT				Intersection Control	WITH PROJECT + MITIGATION			
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS	Change in V/C or Delay	Significant Impact?		V/C or Delay (S)	LOS	Change in V/C or Delay	Significant Impact?
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**1.065**	**F**	**1.085**	**F**	0.020	Yes	Signalized	0.767	C	-0.298	No
		County of Los Angeles	ICU	Signalized	0.812	D	0.895	D	0.083	Yes	Signalized	0.813	D	0.001	No
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.782	C	**0.970**	**E**	0.188	Yes	Signalized	0.888	D	0.106	Yes
6	Western / Carson	City of Torrance	HCM	Signalized	33.6	C	42.6	D	9.0	No	Signalized	30.8	C	-2.8	No
		City of Los Angeles	CMA	Signalized	**0.985**	**E**	**1.040**	**F**	0.055	Yes	Signalized	**0.940**	**E**	-0.045	No
		Caltrans	HCM	Signalized	33.6	C	**42.6**	**D**	9.0	Yes	Signalized	30.8	C	-2.8	No
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	0.980	E	**1.006**	**F**	0.026	Yes	Signalized	0.775	C	-0.205	No
		County of Los Angeles	ICU	Signalized	0.747	C	0.864	D	0.117	Yes	Signalized	0.683	B	-0.064	No
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.456	A	0.669	B	0.213	No	Signalized	0.603	B	0.147	No
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.758	C	**1.121**	**F**	0.363	Yes	Signalized	**0.972**	**E**	0.214	Yes
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.724	C	**1.177**	**F**	0.453	Yes	Signalized	0.722	C	-0.002	No
		Caltrans	HCM	Signalized	**38.2**	**D**	**138.2**	**F**	100.0	Yes	Signalized	31.1	C	-7.1	No
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	**0.981**	**E**	**1.263**	**F**	0.282	Yes	Signalized	**0.944**	**E**	-0.037	No
		Caltrans	HCM	Signalized	**65.6**	**E**	**114.3**	**F**	48.7	Yes	Signalized	**74.8**	**E**	9.2	No
25	Western / 223rd	City of Torrance	HCM	Signalized	38.7	D	53.7	D	15.0	No	Signalized	37.2	D	-1.5	No
		City of Los Angeles	CMA	Signalized	**0.992**	**E**	**1.092**	**F**	0.100	Yes	Signalized	**0.992**	**E**	0.000	No
		Caltrans	HCM	Signalized	**38.7**	**D**	**53.7**	**D**	15.0	No	Signalized	**37.2**	**D**	-1.5	No
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.821	D	0.833	D	0.012	No	Signalized	0.733	C	-0.088	No
		County of Los Angeles	ICU	Signalized	0.683	B	0.780	C	0.097	Yes	Signalized	0.709	C	0.026	No
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.593	A	0.891	D	0.298	Yes	Signalized	0.636	B	0.043	No
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.845	D	**1.226**	**F**	0.381	Yes	Signalized	**1.144**	**F**	0.299	Yes
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.748	C	**1.130**	**F**	0.382	Yes	Signalized	0.741	C	-0.007	No
		Caltrans	HCM	Signalized	25.9	C	**62.0**	**E**	36.1	Yes	Signalized	30.5	C	4.6	No
30	Figueroa 223rd	City of Carson	ICU	Signalized	0.778	C	**0.959**	**E**	0.181	Yes	Signalized	0.865	D	0.087	No
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.032**	**F**	**1.576**	**F**	0.544	Yes	Signalized	0.794	C	-0.238	-
		Caltrans	HCM	AWSC	**78.0**	**F**	**183.5**	**F**	105.5	Yes	Signalized	28.5	C	-49.5	-
36	Western / Torrance	City of Torrance	HCM	Signalized	**55.1**	**E**	**55.8**	**E**	0.7	Yes	Signalized	42.3	D	-12.8	No
		City of Los Angeles	CMA	Signalized	**0.991**	**E**	**0.995**	**E**	0.004	No	Signalized	0.895	D	-0.096	No
		Caltrans	HCM	Signalized	**55.1**	**E**	**55.8**	**E**	0.7	No	Signalized	**42.3**	**D**	-12.8	No
37	Western / 220th	City of Torrance	HCM	Signalized	8.4	A	11.3	B	2.9	No	Signalized	11.3	B	2.9	No
		City of Los Angeles	CMA	Signalized	0.666	B	0.737	C	0.071	No	Signalized	0.637	B	-0.029	No
		Caltrans	HCM	Signalized	8.4	A	11.3	B	2.9	No	Signalized	11.3	B	2.9	No

[a] = Existing Year (2016) No Project V/C and LOS are presented for County of Los Angeles intersections; County guidelines specify use of the Existing Year (2016) No Project V/C and LOS as the baseline for comparison to the Future Year (2035) With Project V/C and LOS. AWSC = All Way Stop Control. Bold and shaded = Intersection operates at an unacceptable LOS using the methodology listed.

TABLE 9.8: FUTURE YEAR (2035) WITH PROJECT SIGNIFICANT IMPACT COMPARISON – PM PEAK HOUR

INTERSECTION		Jurisdiction	Analysis Method	Intersection Control	FUTURE [a]		WITH PROJECT				Intersection Control	WITH PROJECT + MITIGATION			
					V/C or Delay (S)	LOS	V/C or Delay (S)	LOS	Change in V/C or Delay	Significant Impact?		V/C or Delay (S)	LOS	Change in V/C or Delay	Significant Impact?
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	**1.113**	**F**	**1.113**	**F**	0.000	No	Signalized	**0.950**	**E**	-0.163	No
		County of Los Angeles	ICU	Signalized	0.850	D	**0.957**	**E**	0.107	Yes	Signalized	0.820	D	-0.030	No
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.770	C	**0.989**	**E**	0.219	Yes	Signalized	**0.948**	**E**	0.178	Yes
6	Western / Carson	City of Torrance	HCM	Signalized	**56.9**	**E**	**75.7**	**E**	18.8	Yes	Signalized	52.9	D	-4.0	No
		City of Los Angeles	CMA	Signalized	**1.124**	**F**	**1.220**	**F**	0.096	Yes	Signalized	**1.120**	**F**	-0.004	No
		Caltrans	HCM	Signalized	**56.9**	**E**	**75.7**	**E**	18.8	No	Signalized	**52.9**	**D**	-4.0	No
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	**1.013**	**F**	**1.076**	**F**	0.063	Yes	Signalized	0.850	D	-0.163	No
		County of Los Angeles	ICU	Signalized	0.773	C	**0.924**	**E**	0.151	Yes	Signalized	0.776	C	0.003	No
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.427	A	0.795	C	0.368	Yes	Signalized	0.711	C	0.284	No
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.702	C	**1.050**	**F**	0.348	Yes	Signalized	**0.936**	**E**	0.234	Yes
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.665	B	**0.981**	**E**	0.316	Yes	Signalized	0.741	C	0.076	No
		Caltrans	HCM	Signalized	31.6	C	**92.4**	**F**	60.8	Yes	Signalized	28.8	C	-2.8	No
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	0.886	D	**1.337**	**F**	0.451	Yes	Signalized	0.886	D	0.000	No
		Caltrans	HCM	Signalized	**58.3**	**E**	**168.3**	**F**	110.0	Yes	Signalized	**69.7**	**E**	11.4	No
25	Western / 223rd	City of Torrance	HCM	Signalized	47.3	D	51.6	D	4.3	No	Signalized	35.4	D	-11.9	No
		City of Los Angeles	CMA	Signalized	**1.049**	**F**	**1.059**	**F**	0.010	Yes	Signalized	**0.959**	**E**	-0.090	No
		Caltrans	HCM	Signalized	**47.3**	**D**	**51.6**	**D**	4.3	No	Signalized	**35.4**	**D**	-11.9	No
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.787	C	0.812	D	0.025	No	Signalized	0.712	C	-0.075	No
		County of Los Angeles	ICU	Signalized	0.655	B	0.761	C	0.106	Yes	Signalized	0.627	B	-0.028	No
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.523	A	0.760	C	0.237	Yes	Signalized	0.674	B	0.151	No
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.769	C	**1.116**	**F**	0.347	Yes	Signalized	**0.979**	**E**	0.210	Yes
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.818	D	**1.130**	**F**	0.312	Yes	Signalized	0.826	D	0.008	No
		Caltrans	HCM	Signalized	**46.7**	**D**	**97.6**	**F**	50.9	Yes	Signalized	**39.7**	**D**	-7.0	No
30	Figueroa 223rd	City of Carson	ICU	Signalized	0.748	C	**0.901**	**E**	0.153	Yes	Signalized	0.846	D	0.098	No
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	**1.115**	**F**	**1.351**	**F**	0.236	Yes	Signalized	0.690	B	-0.425	-
		Caltrans	HCM	AWSC	**184.2**	**F**	**195.9**	**F**	11.7	Yes	Signalized	21.7	C	-162.5	-
36	Western / Torrance	City of Torrance	HCM	Signalized	43.9	D	48.1	D	4.2	No	Signalized	37.4	D	-6.5	No
		City of Los Angeles	CMA	Signalized	**0.927**	**E**	**0.940**	**E**	0.013	Yes	Signalized	0.840	D	-0.087	No
		Caltrans	HCM	Signalized	**43.9**	**D**	48.1	D	4.2	No	Signalized	**37.4**	**D**	-6.5	No
37	Western / 220th	City of Torrance	HCM	Signalized	20.3	C	22.0	C	1.7	No	Signalized	15.9	B	-4.4	No
		City of Los Angeles	CMA	Signalized	**0.909**	**E**	**0.951**	**E**	0.042	Yes	Signalized	0.851	D	-0.058	No
		Caltrans	HCM	Signalized	20.3	C	22.0	C	1.7	No	Signalized	15.9	B	-4.4	No

[a] = Existing Year (2016) No Project V/C and LOS are presented for County of Los Angeles intersections; County guidelines specify use of the Existing Year (2016) No Project V/C and LOS as the baseline for comparison to the Future Year (2035) With Project V/C and LOS. AWSC = All Way Stop Control. Bold and shaded = Intersection operates at an unacceptable LOS using the methodology listed.

TABLE 9.9: FUTURE YEAR (2035) WITH PROJECT + MITIGATION QUEUE ANALYSIS

ID	Ramp	Cross Street	Ramp Length (ft) [a]	85% Ramp Length (ft)	Ramp Turn Lanes at Intersection			AM Queue		PM Queue		Queue Exceeds 85% Storage?	
					Lanes	Movement	Length [a]	Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	AM	PM
11	I-110 Southbound Off-Ramp	Carson Street	980	840	2	Left	980	355	355	251	251	No	No
						Right	380	342		241			
29	I-110 Southbound Off-Ramp	223rd Street	935	800	2	Through/Left	935	679	679	517	517	No	No
						Right/Through	405	679		396			
32	I-110 Southbound Off-Ramp	Hamilton Avenue	890	760	3	Left	890	425	425	148	148	No	No
						Left	355	425		148			
						Right	40	148		23			

[a] = Length measured from scaled aerial images.

TABLE 9.10: FUTURE YEAR (2035) WITH PROJECT MITIGATION FAIR SHARE SUMMARY

ID	INTERSECTION	AM					PM					FAIR SHARE CONTRIBUTION
		EXISTING TRAFFIC	FUTURE TRAFFIC + PROJECT	PROJECT TRAFFIC	TOTAL NEW TRAFFIC	PROJECT % OF NEW TRAFFIC	EXISTING TRAFFIC	FUTURE TRAFFIC + PROJECT	PROJECT TRAFFIC	TOTAL NEW TRAFFIC	PROJECT % OF NEW TRAFFIC	
1	Normandie Avenue (N/S) & Torrance Boulevard (E/W)	4,224	4,789	31	565	5%	4,399	4,982	29	583	5%	**5%**
2	Vermont Avenue (N/S) & Torrance Boulevard (E/W)	4,451	5,552	540	1,101	49%	4,194	5,222	497	1,028	48%	**49%**
6	Western Avenue (N/S) & Carson Street (E/W)	4,427	5,440	454	1,013	45%	5,184	6,258	418	1,074	39%	**45%**
7	Normandie Avenue (N/S) & Carson Street (E/W)	3,898	4,692	301	794	38%	4,151	4,953	277	802	35%	**38%**
9	Berendo Avenue (N/S) & Carson Street (E/W)	2,334	3,533	904	1,199	75%	2,476	3,620	831	1,144	73%	**75%**
10	Vermont Avenue (N/S) & Carson Street (E/W)	4,423	6,511	1,530	2,088	73%	4,354	6,311	1,407	1,957	72%	**73%**
11	I-110 Southbound Ramps (N/S) & Carson Street (E/W)	2,818	4,252	1,078	1,434	75%	2,852	4,202	989	1,350	73%	**75%**
24	Figeroa Street (N/S) & 220th Street / I-110 Northbound Ramps (E/W)	2,873	3,846	609	973	63%	2,401	3,539	833	1,138	73%	**73%**
25	Western Avenue (N/S) & 223rd Street (E/W)	4,173	4,914	214	741	29%	4,714	5,507	197	793	25%	**29%**
26	Normandie Avenue (N/S) & 223rd Street (E/W)	3,696	4,316	152	620	25%	3,670	4,273	140	603	23%	**25%**
27	Meyler Street (N/S) & 223rd Street (E/W)	2,536	3,463	607	927	65%	2,444	3,276	524	832	63%	**65%**
28	Vermont Ave (N/S) & 223rd St (E/W)	4,265	5,705	901	1,440	63%	4,322	5,696	828	1,374	60%	**63%**
29	SB I-110 Ramps (N/S) & 223rd St (E/W)	3,109	4,310	809	1,201	67%	3,424	4,600	743	1,176	63%	**67%**
30	Figueroa Street (N/S) & 223rd Street (E/W)	3,889	4,811	429	922	47%	3,894	4,922	536	1,028	52%	**52%**
32	Hamilton Ave (N/S) & SB I-110 Ramps (E/W)	1,756	2,349	371	593	63%	1,674	2,027	141	353	40%	**63%**
36	Western Ave (N/S) & Torrance Blvd (E/W)	5,066	5,828	122	762	16%	5,440	6,239	112	799	14%	**16%**
37	Vermont Ave (N/S) & 22th St (E/W)	2,748	3,371	274	623	44%	3,109	3,753	251	644	39%	**44%**

Fair share taken to be the maximum of the peak hour Project % of New Traffic values for each intersection.

9.10 FREEWAY MAINLINE MITIGATION MEASURES

As shown in Table 9.1, significant impacts are expected to occur at one freeway mainline study location. The location and mitigation of the impacts falls outside of the jurisdiction of the lead agency; however, potential methods for impact mitigation are presented due to the project's contribution to the impact at said locations. Methods believed to be effective in alleviating the expected impacts are as follows:

- Implementation of more aggressive Traffic Demand Management (TDM) measures. Similar measures from the *Quantifying Greenhouse Gas Mitigation Measures* (California Air Pollution Control Officers Association (CAPCOA)) were implemented in Section 6.1 to provide a trip reduction based on project characteristics. The report provides additional, more specific measures that can be utilized to further reduce project trips. Implementation of a requirement for residential developments consisting of 50 or more units to provide annual Metro bus passes to residents, for example, could potentially serve to reduce project-generated vehicle trips; businesses with a certain number of employees may also be considered for such a requirement.
- Implement improvement projects at the impacted locations which provide additional mainline capacity, increase the incentive for ride-sharing, or allow for inter-city bus transit are recommended. Fair share calculations should be prepared in order to determine the contributions of projects within the region believed to add traffic to the locations of interest.

Measures listed above are intended to provide guidance in further reducing project trips as well as methods for implementing/funding such measures. Implementation of these measures is outside the control of the lead agency; coordination with and the approval of Caltrans is required.

10 CONCLUSIONS

This traffic analysis report has been prepared as part of the West Carson TOD Specific Plan Environmental Impact Report (EIR). The purpose of this traffic study is to document the forecast traffic conditions within the study area with development proposed in the Specific Plan in order to identify potential impacts to study area intersections, select freeway segments, and freeway off-ramps based on the various jurisdiction standards, and to formulate measures to mitigate those impacts. A summary of the study scenarios is provided below.

10.1 Existing Year (2016) No Project

Two of the ten links assessed were observed to operate at an unacceptable level of service (LOS E or worse). All but six of the thirty-seven study intersections currently operate at an acceptable level of service using their respective standards. An unacceptable level of service is observed at two of the six CMP monitoring stations and five of the seven freeway mainline study locations. The queue analysis for this scenario shows that at all freeway off-ramps are expected to provide sufficient queue storage such that 85% of the maximum capacity is not exceeded.

10.2 Existing Year (2016) With Project

Six of the ten links assessed in this study are projected to operate at an unacceptable level of service (LOS E or worse) with the addition of project traffic. A significant impact at fourteen of the thirty-seven intersections evaluated is anticipated as a result of the addition of project traffic. Mitigation measures were developed for all of the significantly impacted intersections. The measures were found to fully mitigate all impacts during both peak hours of this scenario for eleven of the fourteen intersections; impacts at the three remaining intersections are to be significant and unavoidable. Two of the six CMP monitoring are expected to perform at an unacceptable level of service; no impacts are anticipated. An unacceptable level of service is expected at five of the seven freeway mainline study locations; an impact is anticipated to occur at one of the study locations. Mitigation recommendations for freeway mainline impacts are provided in Section 9.8.The queue analysis for this scenario shows that at all freeway off-ramps are expected to provide sufficient queue storage such that 85% of the maximum capacity is not exceeded with the exception of two I-110 southbound off-ramp locations (at Carson Street and Hamilton Avenue). Upon implementation of the respective intersection mitigation measure outlined in Section 9.2, all freeway off-ramps are expected to provide sufficient queue storage such that 85% of the queue capacity is not exceeded by estimated queues.

10.3 Future Year (2035) No Project

Four of the ten links assessed are forecast to operate at an unacceptable level of service (LOS E or worse). Ten of the thirty-seven study intersections are projected to operate at an unacceptable level of service using their respective standards. An unacceptable level of service is observed at four of the six CMP monitoring stations and all seven freeway mainline study locations. The queue analysis for this scenario shows that at all freeway off-ramps are expected to provide sufficient queue storage such that 85% of the maximum capacity is not exceeded

10.4 Future Year (2035) With Project

Six of the ten links assessed are projected to begin operating at an unacceptable level of service (LOS E or worse) with the addition of project traffic. A significant impact at seventeen of the thirty-seven intersections evaluated is anticipated as a result of the addition of project traffic. Mitigation measures were developed for all of the significantly impacted intersections. The measures were found to fully mitigate all impacts during both peak hours of this scenario for fourteen of the seventeen intersections; impacts at the three remaining intersections are to be significant and

unavoidable. Four of the six CMP monitoring are expected to perform at an unacceptable level of service; no impacts are anticipated. An unacceptable level of service is expected at all seven freeway mainline study locations; an impact is anticipated to occur at one of the study locations. Mitigation recommendations for freeway mainline impacts are provided in Section 9.8.The queue analysis for this scenario shows that at all freeway off-ramps are expected to provide sufficient queue storage such that 85% of the maximum capacity is not exceeded with the exception of three I-110 southbound off-ramp locations (at Carson Street, 223rd Street, and Hamilton Avenue). Upon implementation of the respective intersection mitigation measure outlined in Section 9.6, all freeway off-ramps are expected to provide sufficient queue storage such that 85% of the queue capacity is not exceeded by estimated queues.

11 REFERENCES

Draft Traffic Impact Analysis Report Guidelines (Los Angeles County Department of Public Works, December 2013)

California Manual on Uniform Traffic Control Devices (California Department of Transportation, 2014); http://www.dot.ca.gov/trafficops/camutcd/docs/2014r2/CAMUTCD2014-Part4_rev2.pdf

Caltrans Performance Measurement System (California Department of Transportation, 2014); http://pems.dot.ca.gov/

Quantifying Greenhouse Gas Mitigation Measures (California Air Pollution Control Officers Association, 2010); http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

Carson General Plan Update (City of Carson, amended August 2013); http://ci.carson.ca.us/communitydevelopment/generalplan.aspx

Congestion Management Program (Los Angeles County Metropolitan Transportation Authority, 2010); http://media.metro.net/projects_studies/cmp/images/CMP_Final_2010.pdf

Guide for the Preparation of Traffic Impact Studies (California Department of Transportation, December 2002); http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf

Traffic Census Program (California Department of Transportation, 2015); http://www.dot.ca.gov/trafficops/census/

City of Torrance Citywide Traffic Analysis (RBF, 2013); http://www.torranceca.gov/pdf/traffic/4211_Trf_06-03-2008.pdf

City of Torrance General Plan Update Traffic Impact Analysis (RBF, 2009); http://www.torranceca.gov/pdf/gp_drafteir/Appendix%20J.pdf

Transportation Research Circular No. 212, Interim Materials on Highway Capacity (Transportation Research Board, 1980)

Trip Generation, 9th Edition (ITE, 2012)

12 APPENDICES

APPENDIX A – TRAFFIC COUNTS

APPENDIX B – LOS ANALYSIS (ICU METHODOLOGY)

APPENDIX C – LOS ANALYSIS W/ MITIGATION (ICU METHODOLOGY)

APPENDIX D – LOS/QUEUE ANALYSIS (HCM METHODOLOGY)

APPENDIX E – LOS/QUEUE ANALYSIS W/ MITIGATION (HCM METHODOLOGY)

APPENDIX F – LAND USE SUMMARY TABLE

APPENDIX G – MIXED USE INTERNAL TRIP CAPTURE CALCULATIONS

APPENDIX H – LINK VOLUMES

APPENDIX I – FREEWAY MAINLINE REPORTS (HCS 2010)

APPENDIX J – LOS ANALYSIS (CMA METHODOLOGY)

Appendix B. Updated Sewer Area Study

Appendix

This page intentionally left blank.

Report

West Carson TOD Sewer Area Study

West Carson TOD Specific Plan – PC 12386AS (ESTU2017000163)

IBI

Prepared
by IBI Group

April 25, 2018

1 Sewer System

1.1 Introduction

The sewer infrastructure study is an analysis of the existing and planned sewer utilities/infrastructure within the West Carson Transit Oriented Development (TOD) Specific Plan area. Analysis of the existing sewer infrastructure in comparison to a proposed buildout condition is intended to identify areas of concern where existing infrastructure has the potential to be inadequate based on a full “build-out” of the Specific Plan. The analysis of the existing sewer network is based on information compiled from existing data researched and retrieved from Los Angeles County Department of Public Works (LACDPW), Los Angeles County Sanitation District (LACSD), private utility purveyors, discussion with these agencies, as well as public information presented from each.

The existing area is developed with residential and commercial properties, two public schools, a hospital and associated offices, and an industrial zone. The available infrastructure has no constraints regarding redevelopment and property usage plans.

1.2 Site Description

West Carson is an unincorporated area of Los Angeles County located 2 miles west of the City of Carson. The TOD study area is centered on the Metro Silver Line bus station, located at the I-110/Carson Street interchange. The Harbor UCLA Medical Center is located adjacent to the Specific Plan area and within the station area. The medical center is expected to increase the square footage of its facilities as part of a separate master plan. This proposed increase in square footage is included in this analysis as part of growth without the Specific Plan. Two elementary schools are in the area, as well as nearly 140 acres of residential zones. Near the hospital are zones of mixed use – industry, retail, food, etc. The Specific Plan area is bounded on the North by the 208th Street Channel and Torrance Boulevard; bounded on the East by the California 110 Freeway; Bounded by the South by 223rd Street; and bounded by the West by Normandie Avenue.

1.3 Description of Existing Sewer System

The City of West Carson is currently serviced by two sanitary systems. The Los Angeles County Sewer Maintenance District services local collection lines, while trunk sewers and treatment facilities are serviced by Los Angeles County Sanitation Districts (LACSD). Local collection lines are primarily 8” in diameter and composed of Vitrified Clay Pipe (VCP). These are routinely assessed through CCTV inspection, and repaired and replaced as part of a continuous improvement plan maintained by the Department of Public Works. The 8” sanitary collection lines are sufficient size to collect sanitary waste from houses and shops in the area and transport them to the main collection trunks.

There are four main segments of LACSD trunk lines collecting the sewage from the Specific Plan area. The northeast corner of the Specific Plan area is served by a 12” VCP Trunk. Another trunk line runs east on Desford, south on Berendo, and east on Carson Street before connecting with the large trunk that runs south on Vermont Avenue. A third trunk line, 54” in diameter, runs east on Carson Street at the Specific Plan boundary, cutting south through the Harbor-UCLA Medical Center campus along the same center line as Meyler Street, continuing south past the Specific Plan boundary. The final trunk line runs east on 223rd Street, connecting with the second trunk and continuing south on Vermont Avenue. There are three segments of trunk line that are out of service – 1) 63” trunk running east along South Avenue connecting at Vermont Avenue, 2) 66” to 78” trunk running south along Vermont Avenue from Carson Street to 223rd Street, 3) The continuation of the first unused trunk running south from 220th Street to 223rd Street. The majority of these lines are reinforced concrete with linings.

The Specific Plan Area was delineated into 14 sewer main tributary areas which connect into the trunks of the Los Angeles County Sewer Maintenance Districts. These are detailed below and illustrated in Section 3 of the Appendix:

223rd Street West of Meyler (Tributary Area 1) – Existing 8" pipe on the west side of Meyler Street in the southwestern portion of the Specific Plan area. Collects from proposed zones: Residential 1, Residential 3, Public (as Meyler Street Elementary) and additional flow from Residential 1 zones south of the Specific Plan area. The zone connects to the trunk from manhole 232 into the trunk along 223rd Street.

223rd Street East of Meyler (Tributary Area 2) – Existing 8" pipe on the east side Meyler Street in the southern portion of the Specific Plan area. Collects from proposed zones: Residential 1, Unlimited Commercial, Industrial Flex, and additional flow from Residential 1, Residential Planned Development, and Industrial zones south of the Specific Plan area. The zone connects to the trunk from manhole 195 along 223rd Street.

Jay Street West of Meyler (Tributary Area 3) – Existing 8" pipe west of Meyler Street along Jay Street. Collects Residential 1 development. Connects to the No. 5 Main Trunk from manhole 973.

Jay Street East of Meyler (Tributary Area 4) – Existing 8" pipe east of Meyler Street along Jay Street. Collects Residential 1 development. Connects to the No. 5 Main Trunk from manhole 203.

220th Street (Tributary Area 5) – Existing 8" pipe on the east side of Meyler Street collecting. Collects Residential 1, Residential 3, and Residential Planned development. Connects to the Meyler Street Trunk at 223rd Street from manhole 395.

Vermont Avenue at 220th Street (Tributary Area 6) – Existing 8" pipe on the east side of Vermont Avenue in the southeastern portion of the Specific Plan area. Collects from proposed zones: Mixed Use Development 2, Industrial Flex, Residential 3, and Residential 4. Connects to Sanitation District Trunk from manhole 1082.

Medical Center (Tributary Area 7) – The Harbor-UCLA Medical Center is a collection of existing 8" to 15" pipes bound by Normandie Avenue, Vermont Avenue, 220th Street, and Carson Street. Manhole 1056 appears to connect some of this area to the trunk sewer. It is unknown the exact configuration of collection lines nor which trunk system they ultimately connect to because they are privately owned.

Vermont Avenue South of Carson (Tributary Area 8) – Existing 8" pipe on the south side of Carson Street that collects sewage in the eastern portion of the plan. Collects from Mixed Use Development 2. Connects to the Joint Outfall D sewer from manhole 130.

Vermont Avenue North of Carson (Tributary Area 9) – Existing 8" pipe on the north side of Carson Street that collects a small area north of Carson Street and west of Vermont Avenue. It collects sewage from Residential 4 and Mixed Use Development 1. Connects to the Joint Outfall D sewer from Manhole 132.

West Carson Street (Tributary Area 10) – Existing 8" pipe on Carson Street east of Berendo Avenue. Collects a small area of Mixed Use Development 1 zoning. Connects to the Joint Outfall D sewer from manhole 432.

Berendo and Broadwell Avenue (Tributary Area 11) – Existing 8" line collecting Residential 1 along Berendo Avenue and Broadwell, extending as far north as the back end of properties on Budlong and Meyler Courts. Collects from zones Mixed Use 1 and Residential 1. Connects to the Joint Outfall D sewer from manhole 271.

Desford Avenue (Tributary Area 12) – Existing 8" line collecting all sewage in the northwest portion of the plan through both a force main and gravity fed lines. Collects from zones: Residential 1, Mixed Use Development 1, and Residential 4. It also collects from zones outside of the plan area: Residential 1 north of the 208th Street Drain, and a collection line from the City of Los Angeles. Connects to the Joint Outfall D sewer from Manhole 436.

Van Deene Avenue (Tributary Area 13, 13A, 13A1, 13A2, 13A2) – Existing 10" line collecting all lines east of Vermont Avenue and north of Carson Street with exception to the Greenhedge cul-de-sac. This collection zone was delineated into 13A and 13B. 13A is further split into 8" collection areas, 13A1 and 13A2. 13A1 collects from Residential 1 East of Van Deene Avenue and South to 212th Street, as well as Van Deene Elementary. 13A2 collects from Mixed Use Development 1 and Mixed Use Development 2 east of Vermont and north of Carson, Residential 1 east of Vermont and West of Van Deene Elementary, and

Planned Development east of Vermont. 13A1 and 13A2 combine at manhole 94. 13B is an 8" line that collects Residential 1 from Doble Avenue and continues to the Torrance Avenue Trunk. It connects with 13A at manhole 96.

Once it combines 13A and 13B into a 10" sewer, it also collects the Neighborhood Commercial Zone on the North end of the Plan Area. Connects to the Torrance Boulevard Trunk from manhole 100.

Greenhedge Avenue (Tributary Area 14) – Existing 8" line collecting the Greenhedge cul-de-sacs of Residential 1. Connects with Torrance Boulevard Trunk at Conradi Avenue from manhole 101.

1.4 Methodology

The analysis conducted in this section for sewer systems assesses the potential impact of the proposed Specific Plan in terms of the system's physical capacity to transport wastewater through collection mains. There is an increase in land use density in the proposed build-out, with a corresponding increase in water and wastewater demand anticipated. While strictly single-family residential areas are minimally affected, the increases in other zones warrants analysis. Collection areas were delineated from collection line locations. Sewage effluent in each collection area was calculated using the Zoning Coefficient for runoff for a typical sewer area study developed by Los Angeles County Department of Public Works Land Development Division. Each planned development zone's acreage in collection zones was used with the Zoning Coefficient to determine total flow through the lines.

All existing sewer mains in the Specific Plan area are 8" or above in diameter. Using the minimum allowable slope of 0.24% for 8" mains and 0.20% for 10" mains, the half full capacity for the existing sewer pipes is 0.269 cfs for 8" mains and 0.455 cfs for 10" pipes. Design capacity for lines below 15" diameter, defined by LA County Sanitation District, is half of the diameter of the pipe to be filled.

One of the purposes of this study is to determine the deficiencies in existing utilities when using the future development of the Plan Area. Based on this analysis, five (5) of the existing tributary areas have the potential to exceed the existing sewage capacity defined by LA County. Tributary Areas 2, 6, 8, 12, and 13 have the potential to exceed the existing sewage capacity of their connecting sewer mains. Tributary Area 13, which has been further broken into subareas based on pipe sizes has two locations within it that identify as having the potential to exceed the existing sewage capacity of their mains. The remaining tributary areas, based on zoning coefficients from Los Angeles County, should remain below the designed sewage capacity.

- Tributary Area 2 has an estimated cumulative sewage flow of 0.550 cfs which is 204% of the design capacity of 0.269 cfs allowed by an 8" collection line. This area includes flow from Residential 1, Unlimited Commercial, Industrial Flex, and additional flow from outside the TOD Plan Area.
- Tributary Area 6 has an estimated cumulative sewage flow of 0.580 cfs which is 215% of the design capacity of 0.269 cfs allowed by an 8" collection line. This area includes flow from Mixed Use Development 2, Residential 4, Industrial Flex, and Residential 3.
- Tributary Area 8 has an estimated cumulative sewage flow of 0.378 cfs which is 140% of the design capacity of 0.269 cfs allowed by an 8" collection line. This area includes flow from Mixed use Development 2.
- Tributary Area 12 has an estimated cumulative sewage flow of 0.625 cfs which is 232% of the design capacity of 0.269 cfs allowed by an 8" collection line. This area includes flow from Residential 1, Mixed Use Development 1, and Residential 4 in the Plan Area. This area also includes flow from Residential 1 outside of the Plan Area, as well as additional flow from a City of Los Angeles sewer that connects to manhole 329. Communications with the City have indicated the peak flow from the most recent analysis performed in 2007 of the 8" sewer to be 0.097 cfs. This analysis is included in Appendix 7.
- Tributary Area 13 has an estimated cumulative flow of 0.551 cfs which is 120% of the design capacity of 0.455 cfs allowed by a 10" collection line. This area includes flow from two lines – 13A

and 13B in the Plan Area and collects from Residential 1, Mixed Use Development 1, Mixed Use Development 2, Residential Planned Development, Neighborhood Commercial, and a public elementary school.

- Area 13A has an estimated cumulative sewage flow of 0.464 cfs which is 102% of the design capacity of 0.455 cfs allowed by a 10" collection line. Area 13A was broken into two subareas based on 8" collection lines – 13A1 and 13A2.
    - The 8" collection pipe associated with Sub-Area 13A2 – as detailed in the map included with this report, has an estimated cumulative sewage flow of 0.369 cfs which is 137% of the design capacity of 0.269 cfs allowed by an 8" collection line.

Due to the preliminary nature of this analysis, final buildout, including building layout and schedule is unknown at this time. As such, exact flows cannot be determined. The purpose of this study is to identify locations where existing infrastructure could potentially be inadequate to service final buildout conditions.

1.5 Conclusion

A more detailed analysis of types of buildings and historical flows in areas where little to no build-out will occur can mitigate some of the issues in collection mains

Since the design identifies full "build out" condition, there is no immediate need for upgrades to the existing sewer mains. A detailed study – with projected building and consumer flows – around the existing tributary areas of potential will identify the required upgrades to the tributaries. In general, new or upgraded sewer laterals are required for new buildings. This is paid for by the developers. All new sewer infrastructure development and upgrades will have to be reviewed by the County's Department of Public Works.

The analysis identified five (5) subareas where existing sewer has the potential to exceed the sewer design capacity. These five subareas are: Tributary Area 2, Tributary Area 6, Tributary Area 8, Tributary Area 12, and Tributary Area 13.

1.6 Attachments and Exhibits

- Sewer Area Calculation
- Estimated Average Daily Sewage Flows
- Tributary Areas for Calculating Sewer Demand
- Collection Points for Sewer Tributary Areas (2 total)
- LA County Consolidated Sewer Maintenance District (CSMD) Index Maps (2 total)
- LA County Zoning Map
- LA City Pipe Flow 2007

Sewer Area Study Table

* Calculated using Kutter's Formula with n=0.013 (as in S-C4 graph in PC Procedural Manual)

** Based on current land use and coefficients per LA County, (Attach supporting calculations)

*** For pipes > 15" % Full should be calculated by taking the flow depth divided by 0.75 times the pipe diameter

Street Name	Segment		Pipe		*Capacity		Area (Acres)	Zoning Coeff.	Calculated Flow (cfs)	**Cumulative Calculated Flow (cfs)	PC orCI Construction Plan #	Comment	% Full
	M.H. #	M.H. #	Size (in.)	Slope (%)	1/2 Full(<15")	3/4 Full(>15")							Cumulative Flow / Capacity
Tributary Area 1 (223rd Street West of Meyler)	**232**	**Trunk**	**8**	**0.24**	**0.27**								**89.01%**
Residential 1							6.6	0.004	0.026	0.026			9.80%
Residential 3							2	0.012	0.024	0.050			18.71%
Public - Meyler Street Elementary - 1050 Students * 10 gallons/student/day*2.5 peak flow									0.041	0.091		1,050 student capacity	33.93%
Additional Area (Residential 1, as A1)							8.6	0.004	0.034	0.126			46.70%
Additional Area (Light Industrial, as M1)							7.6	0.015	0.114	0.240			89.01%
Tributary Area 2 (223rd Street East of Meyler)	**195**	**Trunk**	**8**	**0.24**	**0.27**								**204.27%**
Residential 1							4.1	0.004	0.016	0.016			6.09%
Unlimited Commercial							6.8	0.015	0.102	0.118		Higher zoning coefficient than estimated zion evangelical	43.95%
Industrial Flex							4.9	0.021	0.103	0.221			82.14%
Additional Area (Residential 1)							30.6	0.004	0.122	0.344			127.58%
Additional Area (RPD R-3-17U-DP)							1	0.017	0.017	0.361			133.89%
Additional Area (RPD R-3-24U-DP)							1	0.024	0.024	0.385			142.80%
Additional Area (RPD-5000-12U)							5.9	0.012	0.071	0.456			169.08%
Additional Area (Residential 3)							4.4	0.012	0.053	0.508			188.68%
Additional Area (Light Industrial, as M1)							2.8	0.015	0.042	0.550			204.27%
Tributary Area 3 (Jay Street West of Meyler)	**973**	**Trunk**	**8**	**0.24**	**0.27**								**9.21%**
Residential 1							6.2	0.004	0.025	0.025			9.21%
Tributary Area 4 (Jay Street East of Meyler)	**203**	**Trunk**	**8**	**0.24**	**0.27**								**6.53%**
Residential 1							4.4	0.004	0.018	0.018			6.53%
Tributary Area 5 (200 th Street)	**395**	**Trunk**	**8**	**0.24**	**0.27**								**48.11%**
Residential 1							20.4	0.004	0.082	0.082			30.29%
Residential 3							2.1	0.012	0.025	0.107			39.64%
Residential Planned Development							1.9	0.012	0.023	0.130			48.11%
Tributary Area 6 (Vermont Ave. at 220th Street)	**1082**	**Trunk**	**8**	**0.24**	**0.27**								**215.33%**
Mixed Use Development 2							3.1	0.015	0.047	0.047			17.26%
Residential 4							5.9	0.016	0.094	0.141			52.30%
Industrial Flex							18.8	0.021	0.395	0.536			198.85%
Residential 3							3.7	0.012	0.044	0.580			215.33%
Tributary Area 7 (Medical Center)	**1056**	**Trunk**											
Medical Center (NOT USED)													
Tributary Area 8 (Vermont Ave. South of Carson)	**130**	**Trunk**	**8**	**0.24**	**0.27**								**140.31%**
Mixed Use Development 2							25.2	0.015	0.378	0.378			140.31%
Tributary Area 9 (Vermont Ave. North of Carson)	**132**	**Trunk**	**8**	**0.24**	**0.27**								**53.60%**
Residential 4							4.9	0.016	0.078	0.078			29.10%
Mixed Use Development 1							4.4	0.015	0.066	0.144			53.60%

Sewer Area Study Table

* Calculated using Kutter's Formula with n=0.013 (as in S-C4 graph in PC Procedural Manual)

** Based on current land use and coefficients per LA County, (Attach supporting calculations)

*** For pipes > 15" % Full should be calculated by taking the flow depth divided by 0.75 times the pipe diameter

Street Name	Segment		Pipe		*Capacity		Area (Acres)	Zoning Coeff.	Calculated Flow (cfs)	**Cumulative Calculated Flow (cfs)	PC orCI Construction Plan #	Comment	% Full
	M.H. #	M.H. #	Size (in.)	Slope (%)	1/2 Full(<15")	3/4 Full(>15")							Cumulative Flow / Capacity
Tributary Area 10 (West Carson Street)	**433**	**Trunk**	**8**	**0.24**	**0.27**								**8.91%**
Mixed Use Development 1							1.6	0.015	0.024	0.024			8.91%
Tributary Area 11 (Berendo and Broadwell Ave.)	**271**	**Trunk**	**8**	**0.24**	**0.27**								**12.03%**
Residential 1							5.1	0.004	0.020	0.020			7.57%
Mixed Use Development 1							0.8	0.015	0.012	0.032			12.03%
Tributary Area 12 (Desford Ave.)	**436**	**Trunk**	**8**	**0.24**	**0.27**								**231.85%**
Residential 1							64.3	0.004	0.257	0.257			95.47%
Mixed Use Development 1							9	0.015	0.135	0.392			145.58%
Residential 4							3	0.016	0.048	0.440			163.40%
Additional Area (Residential 1)							21.8	0.004	0.087	0.527			195.77%
Additional Flow From City of LA - 25% full depth of pipe, 8" pipe							1	0.0972	0.097	0.625		Connects to Manhole 329	231.85%
Tributary Area 13A	**95**	**96**	**10**	**0.2**	**0.46**								**101.93%**
Residential 1							35.8	0.004	0.143	0.143			31.44%
Mixed Use Development 1							5.8	0.015	0.087	0.230			50.55%
Mixed Use Development 2							9.2	0.015	0.138	0.368			80.85%
Residential Planned Development							6	0.012	0.072	0.440			96.66%
Public - Van Deene Elementary - 625 students * 10 gallons/student/day * 2.5 peak flow									0.024	0.464		625 student capacity	101.93%
Tributary Area 13A1	**93**	**94**	**8**	**0.24**	**0.27**								**136.97%**
Residential 1							18	0.004	0.072	0.072			26.73%
Mixed Use Development 1							5.8	0.015	0.087	0.159			59.02%
Mixed Use Development 2							9.2	0.015	0.138	0.297			110.24%
Residential Planned Development							6	0.012	0.072	0.369			136.97%
Tributary Area 13A2	**109**	**94**	**8**	**0.24**	**0.27**								**35.34%**
Residential 1							17.8	0.004	0.071	0.071			26.43%
Public - Van Deene Elementary - 625 students * 10 gallons/student/day * 2.5 peak flow									0.024	0.095		625 student capacity	35.34%
Tributary Area 13B	**97**	**96**	**8**	**0.24**	**0.27**								**24.35%**
Residential 1							16.4	0.004	0.066	0.066			24.35%
Tributary Area 13 (Van Deene Ave.)	**99**	**100**	**10**	**0.2**	**0.46**								**120.94%**
Residential 1							52.2	0.004	0.209	0.209			45.85%
Mixed Use Development 1							5.8	0.015	0.087	0.296			64.95%
Mixed Use Development 2							9.2	0.015	0.138	0.434			95.25%
Residential Planned Development							6	0.012	0.072	0.506			111.06%
Public - Van Deene Elementary - 625 students * 10 gallons/student/day									0.024	0.530			116.33%
Neighborhood Commercial							1.4	0.015	0.021	0.551			120.94%
Tributary Area 14 (Greenhedge Ave.)	**101**	**Trunk**	**8**	**0.24**	**0.27**								**13.81%**
Residential 1							9.3	0.004	0.037	0.037			13.81%

Estimated Average Daily Sewage Flows for Various Occupancies

Occupancy	Abbreviation	*Average daily flow	
Apartment Buildings:			
Bachelor or Single dwelling units	Apt	~~100~~	gal/D.U. → 150
1 bedroom dwelling units	Apt	~~150~~	gal/D.U. → 200
2 bedroom dwelling units	Apt	~~200~~	gal/D.U. → 250
3 bedroom or more dwelling units	Apt	~~250~~	gal/D.U. → use 300 GPD per SMD
Auditoriums, churches, etc.	Aud	5	gal/seat
Automobile parking	P	25	gal/1000 sq ft gross floor area
Bars, cocktails lounges, etc.	Bar	20	gal/seat
Commercial Shops & Stores	CS	100	gal/1000 sq ft gross floor area
Hospitals (surgical)	HS	500	gal/bed
Hospitals (convalescent)	HC	85	gal/bed
Hotels	H	150	gal/room
Medical Buildings	MB	300	gal/1000 sq ft gross floor area
Motels	M	150	gal/unit
Office Buildings	Off	200	gal/1000 sq ft gross floor area
Restaurants, cafeterias, etc.	R	50	gal/seat
Schools:			
Elementary or Jr. High	S	10	gal/student
High Schools	HS	15	gal/student
Universities or Colleges	U	20	gal/student
College Dormitories	CD	85	gal/student

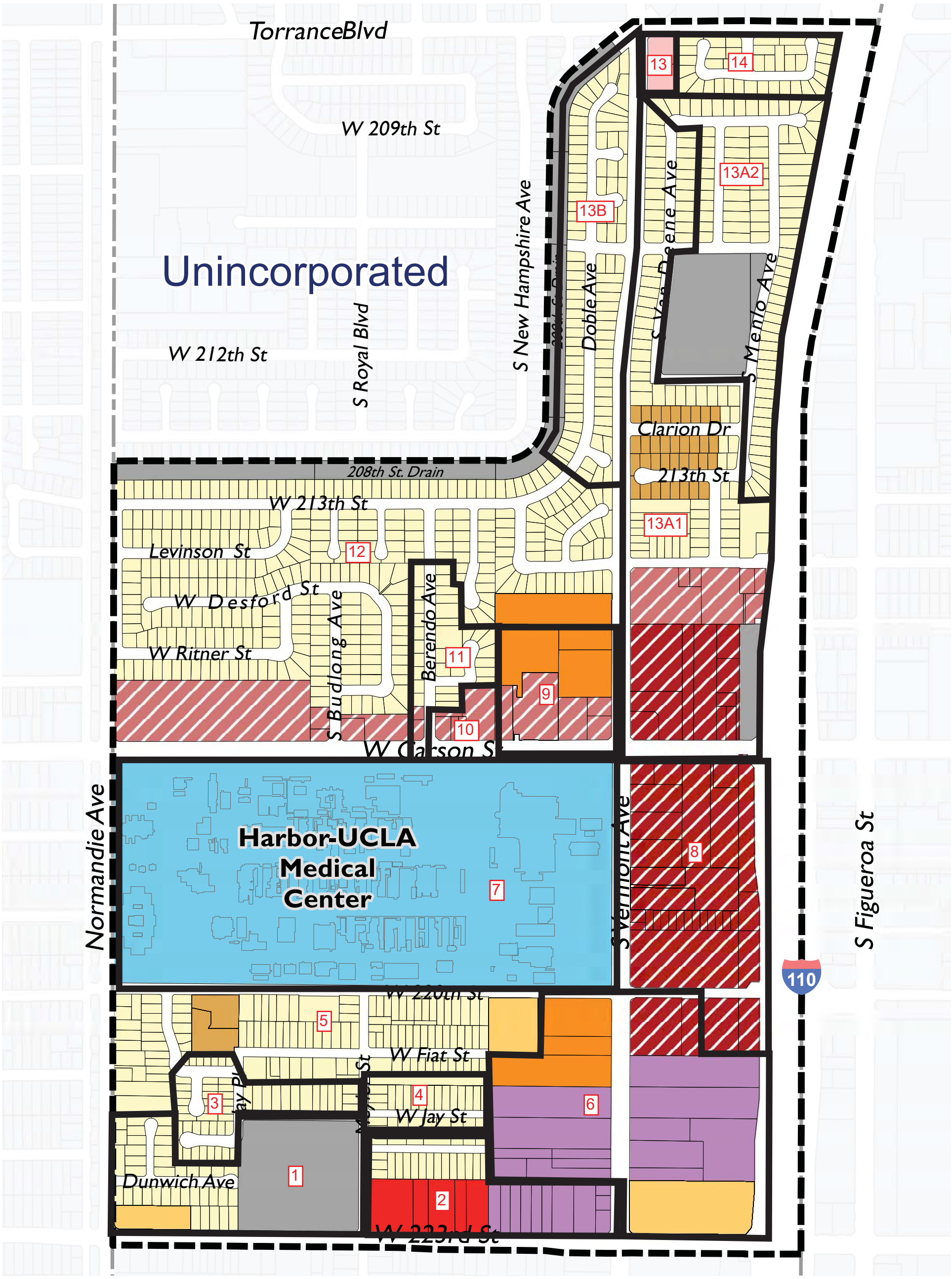
*Multiply the average daily flow by 2.5 to obtain the peak flow

Zoning Coefficients

Zone	Coefficient (cfs/Acre)
Agriculture	**0.001**
Residential+:	
R-1	**0.004**
R-2	**0.008**
R-3	**0.012**
R-4	**0.016***
Commercial:	
C-1 through C-4	**0.015***
Heavy Industrial:	
M1 through M-4	**0.021***

***Individual building, commercial or industrial plant capacities shall be the determining factor when they exceed the coefficients shown**

+ Use 0.001 (cfs/unit) for condominiums only



Proposed Zoning

- West Carson Residential 1
- West Carson Residential 3
- West Carson Residential 4
- Residential Planned Development
- Neighborhood Commercial
- Unlimited Commercial
- Industrial Flex
- Harbor UCLA Medical Zone
- Mixed Use Development 1
- Mixed Use Development 2
- Public
- Specific Plan Boundary
- City Boundary

0 500

Scale: 1 in = 500 Feet 4/18/2016

SEE SHT. NO. S-1703

C-37
C-38
C-43

SAN DIEGO F R W Y

CITY OF LOS ANGELES COUNTY

CITY OF CARSON

VICTORIA REGIONAL PARK

VICTORIA GOLF COURSE

LOS ANGELES COUNTY

ANGELES

HARBOR

CHANNEL

DOMINGUEZ

THIS MAP IS INTENDED FOR USE ONLY AS OPERATIONS MAP BY LOS ANGELES COUNTY SEWER MAINTENANCE DISTRICTS. LOS ANGELES COUNTY EXPRESSLY DISCLAIMS ANY LIABILITY FOR ANY INACCURACIES WHICH MAY BE PRESENT IN THIS MAP.

SEE SHT. NO. S-1759

AUTOMATED GRAPHICS

METERS
0 50 100 200 250
0 200 400 600 800
FEET

LEGEND

- CLAY SEWERS MAINTAINED BY SMD. 8" UNLESS OTHERWISE NOTED
- PLASTIC SEWERS
- CONCRETE SEWERS
- CLAY SEWERS, LINED
- CEMENT SEWERS, LINED
- FORCE MAINS
- SEWERS NOT MAINTAINED BY SMD
- TRUNK SEWERS
- CITY BOUNDARY
- STANDARD MANHOLE
- DROP MANHOLE
- SHALLOW MANHOLE
- TRAP MANHOLE
- WEIR MANHOLE
- C.O. CLEANOUT
- L.H. LAMP HOLE
- PUMP STATION

TOTAL MH'S THIS MAP: 259

SEE SHT. NO. S-1705

E 4,197,000
N 4,054,000

MAP REV
02-14-05

DATA BASE REV
01-30-86

CONSOLIDATED S.M.D.

T: 764 A-5

0519.0519.1704

SEE SHT. NO. S-1704

C-33
C-34
C-36
C-37

THIS MAP IS INTENDED FOR USE ONLY AS OPERATIONS MAP BY LOS ANGELES COUNTY SEWER MAINTENANCE DISTRICTS. LOS ANGELES COUNTY EXPRESSLY DISCLAIMS ANY LIABILITY FOR ANY INACCURACIES WHICH MAY BE PRESENT IN THIS MAP.

SEE SHT. NO. S-1650

SEE SHT. NO. S-1760

SEE SHT. NO. S-1706

AUTOMATED GRAPHICS

METERS
0 50 100 200 250
0 200 400 600 800
FEET

LEGEND

- CLAY SEWERS MAINTAINED BY SMD, 8" UNLESS OTHERWISE NOTED
- PLASTIC SEWERS
- CONCRETE SEWERS
- CLAY SEWERS, LINED
- CEMENT SEWERS, LINED
- FORCE MAINS
- SEWERS NOT MAINTAINED BY SMD
- TRUNK SEWERS
- CITY BOUNDARY
- STANDARD MANHOLE
- DROP MANHOLE
- SHALLOW MANHOLE
- TRAP MANHOLE
- WEIR MANHOLE
- C.O. CLEANOUT
- L.H. LAMP HOLE
- PUMP STATION

TOTAL MH'S THIS MAP: 1133

MAP REV
10-09-07

DATA BASE REV
06-10-86

B-11

CONSOLIDATED S.M.D.

T: 764 A-5

0219.0319.1705

SEE SHT. NO. S-1703

C-37
C-38
C-43

SAN DIEGO F R W Y

CITY OF LOS ANGELES COUNTY

CITY OF CARSON

LOS ANGELES COUNTY

VICTORIA REGIONAL PARK

VICTORIA GOLF COURSE

DOMINGUEZ CHANNEL

HARBOR F R W Y

THIS MAP IS INTENDED FOR USE ONLY AS OPERATIONS MAP BY LOS ANGELES COUNTY SEWER MAINTENANCE DISTRICTS. LOS ANGELES COUNTY EXPRESSLY DISCLAIMS ANY LIABILITY FOR ANY INACCURACIES WHICH MAY BE PRESENT IN THIS MAP.

SEE SHT. NO. S-1759

SEE SHT. NO. S-1705

AUTOMATED GRAPHICS

METERS
0 50 100 200 250
0 200 400 600 800
FEET

LEGEND

- CLAY SEWERS MAINTAINED BY SMD. 8" UNLESS OTHERWISE NOTED
- PLASTIC SEWERS
- CONCRETE SEWERS
- CLAY SEWERS, LINED
- CEMENT SEWERS, LINED
- FORCE MAINS
- SEWERS NOT MAINTAINED BY SMD
- TRUNK SEWERS
- CITY BOUNDARY
- STANDARD MANHOLE
- DROP MANHOLE
- SHALLOW MANHOLE
- TRAP MANHOLE
- WEIR MANHOLE
- C.O. CLEANOUT
- L.H. LAMP HOLE
- PUMP STATION

TOTAL MH'S THIS MAP: 259

MAP REV
02-14-05

DATA BASE REV
01-30-86

B-12

CONSOLIDATED S.M.D.

S-1704

T: 764 A-5

0519.0519.1704

SEE SHT. NO. S-1704

C-33
C-34
C-36
C-37

THIS MAP IS INTENDED FOR USE ONLY AS OPERATIONS MAP BY LOS ANGELES COUNTY SEWER MAINTENANCE DISTRICTS. LOS ANGELES COUNTY EXPRESSLY DISCLAIMS ANY LIABILITY FOR ANY INACCURACIES WHICH MAY BE PRESENT IN THIS MAP.

SEE SHT. NO. S-1650

SEE SHT. NO. S-1760

SEE SHT. NO. S-1706

E 4.197.000

N 4.046.500

AUTOMATED GRAPHICS

METERS
0 50 100 200 250
0 200 400 600 800
FEET

LEGEND

- CLAY SEWERS MAINTAINED BY SMD, 8" UNLESS OTHERWISE NOTED
- PLASTIC SEWERS
- CONCRETE SEWERS
- CLAY SEWERS, LINED
- CEMENT SEWERS, LINED
- FORCE MAINS
- SEWERS NOT MAINTAINED BY SMD
- TRUNK SEWERS
- CITY BOUNDARY
- STANDARD MANHOLE
- DROP MANHOLE
- SHALLOW MANHOLE
- TRAP MANHOLE
- WEIR MANHOLE
- C.O. CLEANOUT
- L.H. LAMP HOLE
- PUMP STATION

TOTAL MH'S THIS MAP: 1133

MAP REV
10-09-07

DATA BASE REV
06-10-86

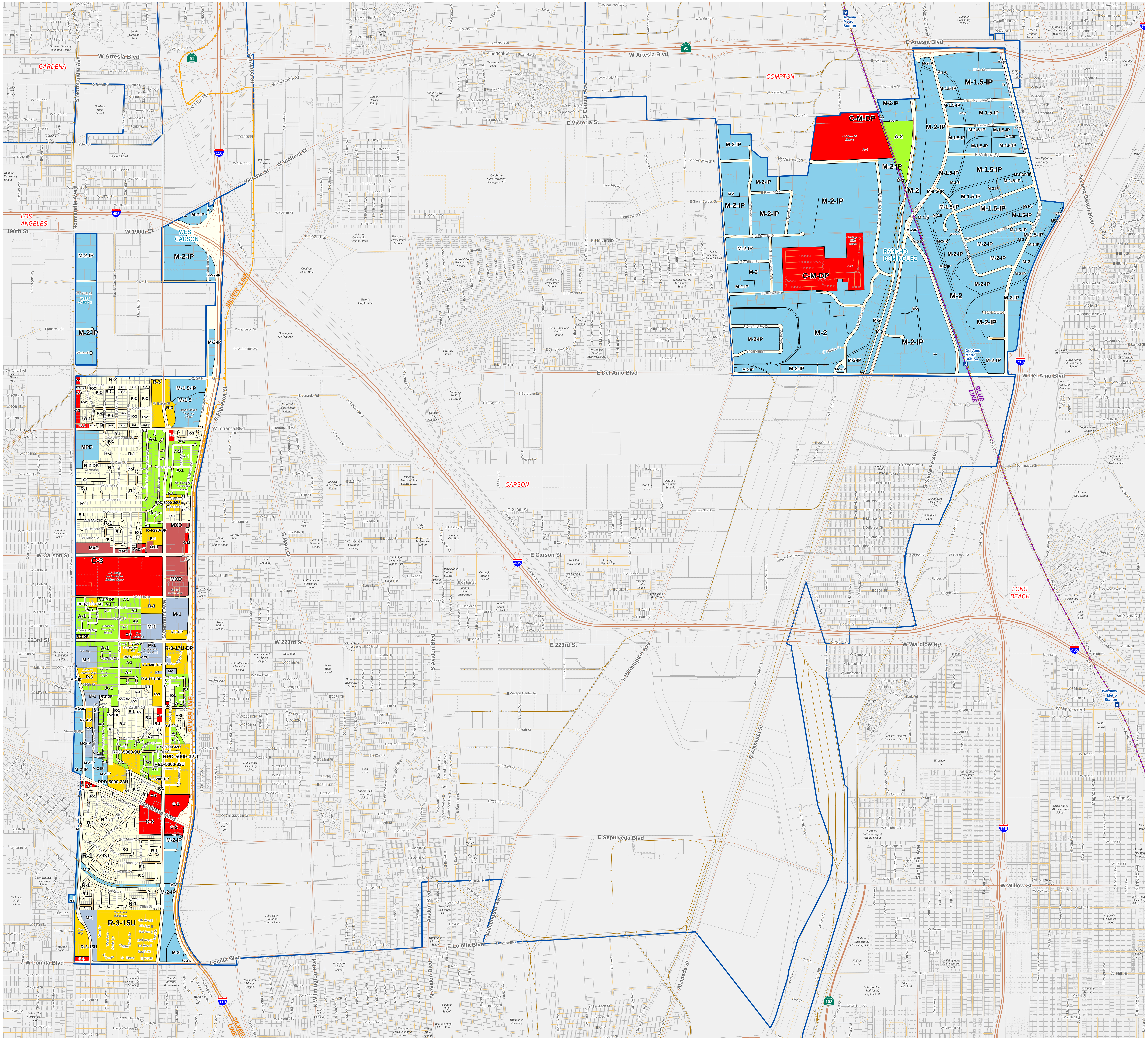
CONSOLIDATED S.M.D.

S-1705

B-13

T: 764 A-5

0219.0319.1705



Los Angeles County

Zoning

West Carson & Rancho Dominguez

LEGEND:

⬜	R-1 - Single-Family Residence	🟦	M-1 - Light Manufacturing
⬜	R-2 - Two-Family Residence	🟦	M-1.5 - Restricted Heavy Manufacturing
🟨	R-3-()U -Limited Density Multiple Residence	🟦	M-2 - Heavy Manufacturing
🟨	R-3-()U - Limited Multiple Residence (SMMCZ only)	🟦	M-2.5 - Aircraft and Heavy Manufacturing
🟨	R-4-()U - Medium Density Multiple Residence	🟦	M-3 - Unclassified
🟧	R-5-()U - High Density Multiple Residence	🟦	MPD - Manufacturing--Industrial Planned
⬜	R-A - Residential Agricultural	⬜	B-1 - Buffer Strip
🟫	R-C - Rural Coastal	⬜	B-2 - Corner Buffer
🟨	RPD - Residential Planned Development	🟫	D-2 - Desert-Mountain
🟩	A-1 - Light Agricultural	🟪	IT - Institutional
🟩	A-2 - Heavy Agricultural	🟩	R-R - Resort And Recreation
🟩	A-2-H - Heavy Agricultural Including Hog Ranches	⬜	P-R - Parking Restricted
🟥	C-1 - Restricted Business	▨	SP - Specific Plan
🟥	C-2 - Neighborhood Business	🟦	SR-D - Scientific Research and Development
🟥	C-3 - General Commercial	🟩	O-S - Open Space
🟥	C-H - Commercial Highway	🟩	O-S-P - Open Space - Parks
🟥	C-M - Commercial Manufacturing	🟩	O-S-DR - Open Space - Deed Restricted
🟥	C-MJ - Major Commercial	🟥	MXD - Mixed Use Development
🟥	C-R - Commercial Recreation	🟫	MXD-RU - Rural Mixed Use Development
🟥	C-RU - Rural Commercial	🟩	W - Watershed
🟥	CPD - Commercial Planned Development		

Base Layers

	Metrolink Stations	⬜	Parcels
	Metro Rail Stations	⬜	City / Unincorporated Community Boundary
	Metrolink	⬜	Incorporated City
	Transitways	⬜	Unincorporated Areas
	Light Rail - Existing		National Forest
	Light Rail - Proposed		
	Light Rail - Under Construction		
	Lot, Cut/Deed, Subdivision and Easement Line		

Latest Zone Change Ordinance: 2015-0043Z (10/6/2015)

NOTE:

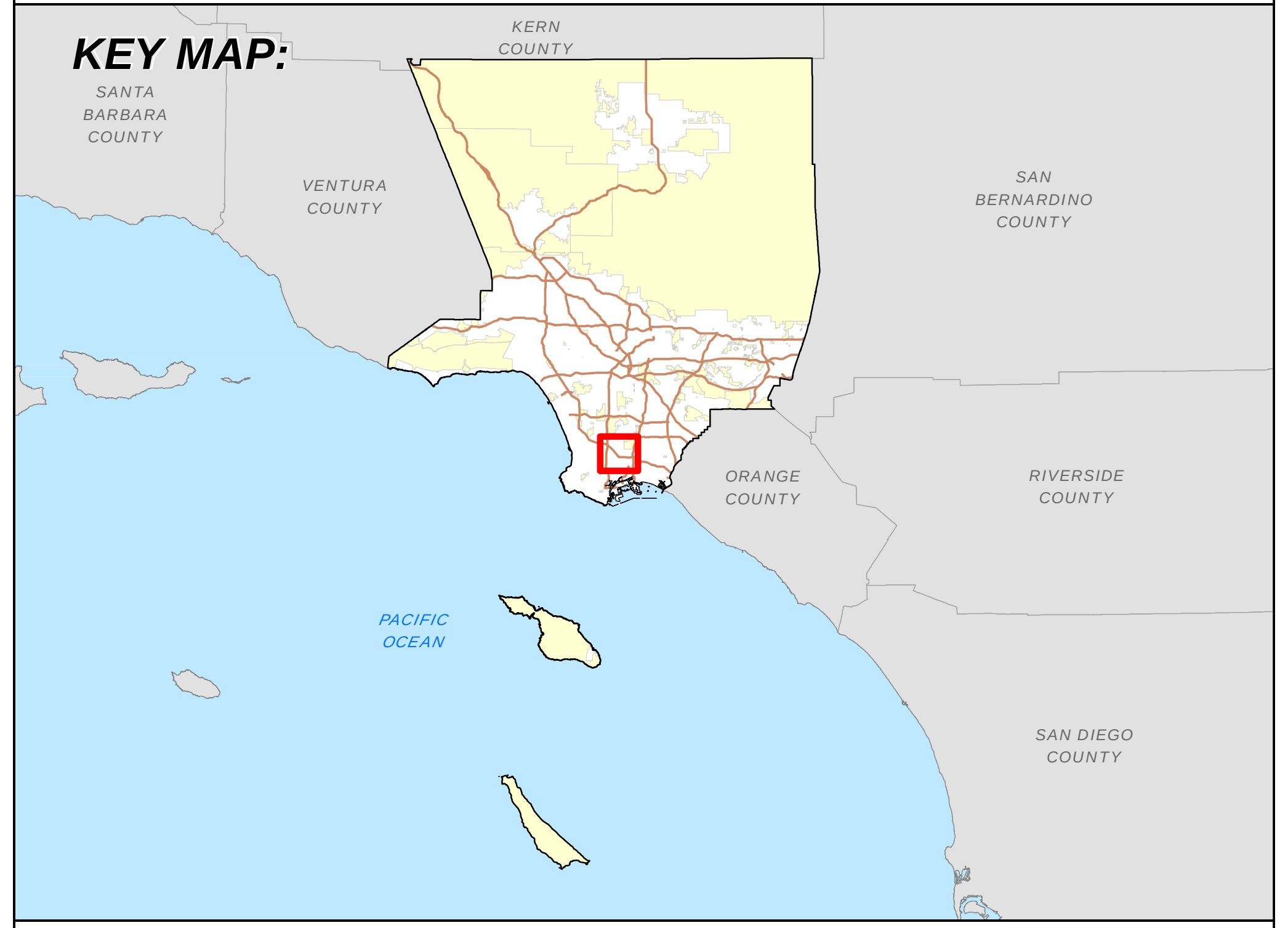
Zoning reflects the most current designation as of the date listed "Current as of" below. The most recent zone change ordinances have been incorporated by the GIS section as of their effective date, with the latest Zone Change Ordinance showing in the yellow box above.

The location of zoning boundaries is as accurate as can be portrayed at this scale. For more precise boundary locations, please use our interactive mapping application GIS-NET3, located at the following URL: http://gis.planning.lacounty.gov/GIS-NET3_Public/Viewer.html. Or, contact the Land Development coordinating Center (LDCC) at (213) 974-6411.

For more detailed information about the uses / densities allowed in these zoning categories, please see the Title 22 section of the Department of Regional Planning's webpage:

http://planning.lacounty.gov/luz

KEY MAP:



Current as of: 4/12/2016

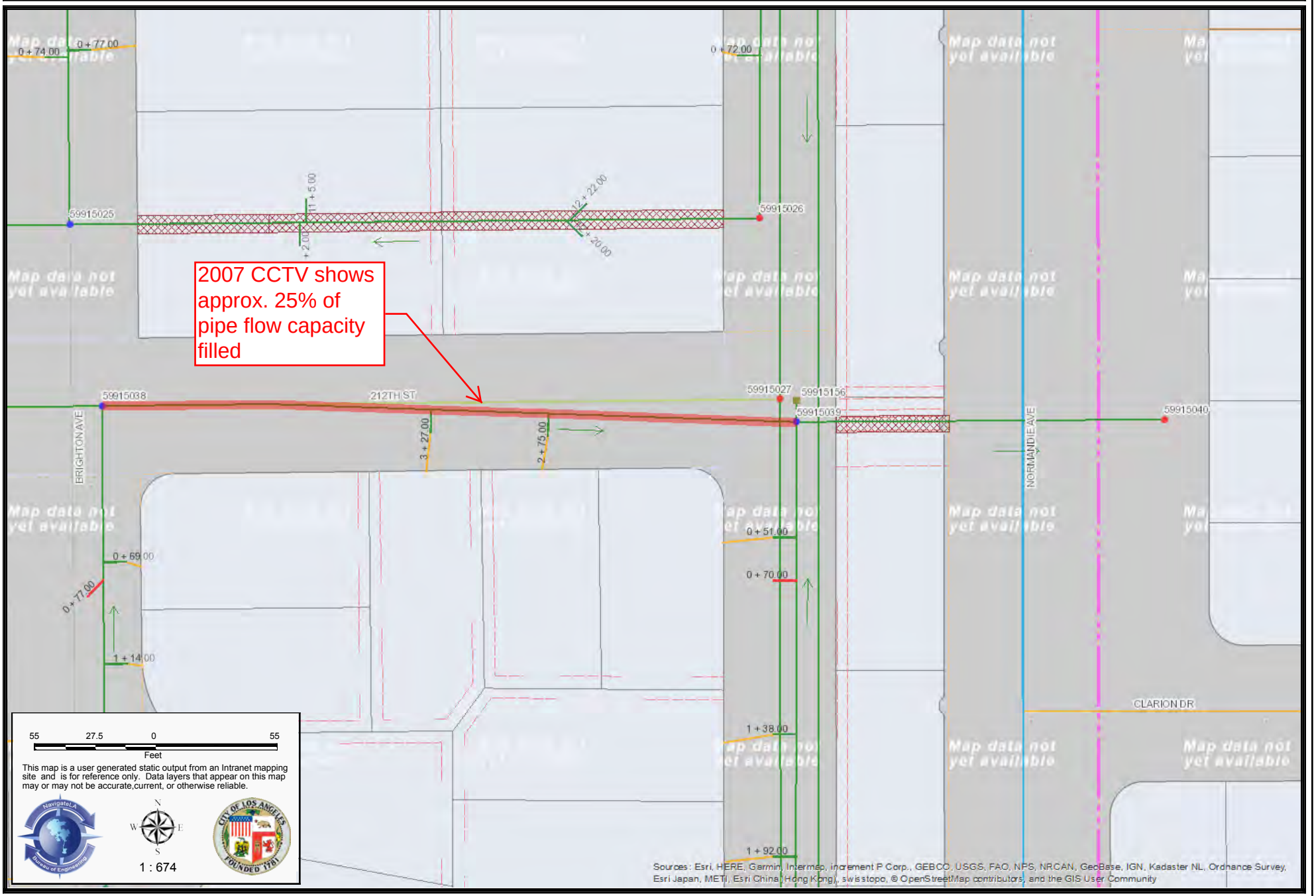
LOS ANGELES COUNTY
Department of Regional Planning
320 W. Temple St.
Los Angeles, CA 90012
http://planning.lacounty.gov/gis

Scale in Feet

0 400 800 1,600 2,400 3,200

..\other\MAP_SERIES\comm_zoning\map_documents\ZONING_DDP.mxd

599150385991503 9A



Sewer Pipes Report

Pipe ID	5991503859915039A
Basin	Z06
Upstream Invert	19.68
Downstream Invert	18.36
Length	309.0
Slope	0.0040
Size	8.0
Width	0
Material	VCP
Shape	CR
Street	212TH ST
Block	1300
Liner	
Upstream Stationing	4 + 74.03
Downstream Stationing	1 + 65.00
Month / Year Installed	07 / 1961
Number of Laterals	2
Gravity or Force Main	GR
Comments	
Number of Wyes	2
Plan Number	D-16181
Supp Plan Number	Undefined
Profile Number	D-16181
Pipe Status	Active
Pipe Ownership	Undefined
Wye Card Number	51193NE
Calculated Capacity	0.70968
Engineering District	Harbor
Rehabilitated	NO

Sewer Pipes Report

Pipe ID	5991503959915040A
Basin	Z06
Upstream Invert	18.36
Downstream Invert	17.12
Length	165.1
Slope	0.0040
Size	8.0
Width	0
Material	VCP
Shape	CR
Street	212TH ST
Block	1300
Liner	
Upstream Stationing	1 + 65.00
Downstream Stationing	0 + -0.09
Month / Year Installed	02 / 1961
Number of Laterals	0
Gravity or Force Main	GR
Comments	
Number of Wyes	0
Plan Number	D-16181
Supp Plan Number	Undefined
Profile Number	D-16181
Pipe Status	Active
Pipe Ownership	Undefined
Wye Card Number	51197SW
Calculated Capacity	0.70968
Engineering District	Harbor
Rehabilitated	NO

Kevin White

From: Albert Lew <albert.lew@lacity.org>
Sent: Monday, April 16, 2018 1:50 PM
To: Kevin White
Subject: Re: Sewer Flow

Yes. Same as other pipe.

Albert C. Lew, P.E.
Wastewater Engineering Services Division (WESD)
Bureau of Sanitation
Department of Public Works
City of Los Angeles
Phone: 323.342.6207
Fax: 323.342.6210

On Mon, Apr 16, 2018 at 10:37 AM, Kevin White <kevin.white@ibigroup.com> wrote:

> Thanks Albert,
>
> Did that pipe have 25% capacity as well?
>
> -Kevin
>
> **From:** Albert Lew [mailto:albert.lew@lacity.org]
> **Sent:** Monday, April 16, 2018 1:30 PM
>
> **To:** Kevin White <kevin.white@ibigroup.com>
> **Subject:** Re: Sewer Flow

Here is some information on the latter pipe.

Albert C. Lew, P.E.
Wastewater Engineering Services Division (WESD)
Bureau of Sanitation
Department of Public Works
City of Los Angeles
Phone: 323.342.6207
Fax: 323.342.6210

On Fri, Apr 13, 2018 at 10:21 AM, Kevin White <kevin.white@ibigroup.com> wrote:

> Albert,
>
> This looks great, thanks! Just following up on my phone call, do we have anything for the pipe between manhole ending in 039 and manhole ending 040?
>
> Thanks,
>
> -Kevin

From: Albert Lew [mailto:albert.lew@lacity.org]
Sent: Wednesday, April 11, 2018 8:07 PM

To: Kevin White <kevin.white@ibigroup.com>
Subject: Re: Sewer Flow

Hi Kevin,

Thanks for the follow-up call. Please find attached information for the pipe. Hope it helps.

Thanks,

Albert

Albert C. Lew, P.E.
Wastewater Engineering Services Division (WESD)
Bureau of Sanitation
Department of Public Works
City of Los Angeles
Phone: 323.342.6207
Fax: 323.342.6210

On Thu, Apr 5, 2018 at 5:57 AM, Kevin White <kevin.white@ibigroup.com> wrote:

Hi Albert,

The County is asking for the document showing this peak flow. Is there a printout or something you can send me about the flow found on this pipe?

From your previous email, the pipe ID is 5991503859915039A.

Thanks,

Kevin White

From: Albert Lew [mailto:albert.lew@lacity.org]
Sent: Thursday, January 18, 2018 9:52 PM
To: Kevin White <kevin.white@ibigroup.com>
Subject: Re: Sewer Flow

Hi Kevin,

I checked the sewer flowing east at the location you boxed red. The latest information of capacity is dated 2007, showing the flow at approximately 25% of the pipe.

Hope this helps.

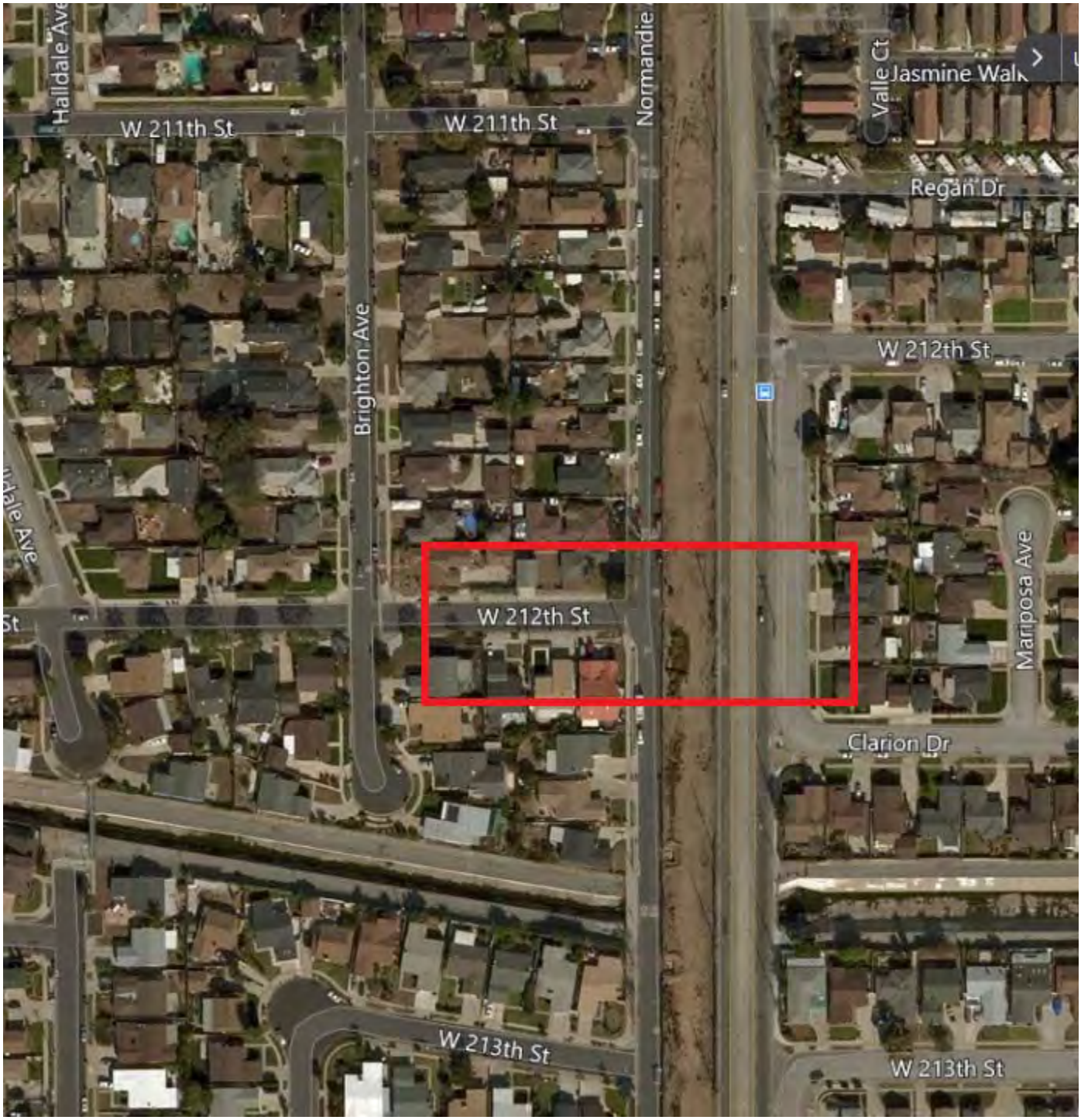
Thanks,

Albert

Albert C. Lew, P.E.
Wastewater Engineering Services Division (WESD)
Bureau of Sanitation
Department of Public Works
City of Los Angeles
Phone: 323.342.6207
Fax: 323.342.6210

On Wed, Jan 17, 2018 at 10:20 AM, Kevin White <kevin.white@ibigroup.com> wrote:

> Hi Albert,
>
> Thanks for taking my call today. I am looking for information for a capacity analysis I am performing for LA County in the West Carson Area. There is a sewer from the city which connects to the area I am looking at and I am in need of the historic peak flow for that sewer. I do not have the sewer name, but the area is shown here, highlighted in the red box.
>
> The sewer in question runs West to East along W 212th street, travels under Normandie avenue, and connects to the LA County sewer system at Clarion Drive, just south of 212th street.



Thank you for your help,

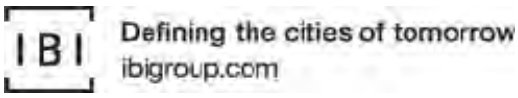
Kevin White

IBI GROUP

635 Brooksedge Boulevard

Westerville OH 43081 United States

tel +1 614 818 4900 ext 2050 fax +1 614 818 4901



February 2018 | Draft Environmental Impact Report
State Clearinghouse No. 2017011010

WEST CARSON TRANSIT ORIENTED DISTRICT SPECIFIC PLAN

Los Angeles County Department of Regional Planning

Prepared for:

Los Angeles County Department of Regional Planning
Leon Freeman
320 West Temple Street, 13th Floor
Los Angeles, California 90012
213.974.6406

Prepared by:

PlaceWorks
William Halligan, Esq., Principal, Environmental Services
3 MacArthur Place, Suite 1100
Santa Ana, California 92707
714.966.9220
info@placeworks.com
www.placeworks.com

PLACEWORKS

Table of Contents

Contents Page

Table of Contents

Contents Page

Table of Contents

Contents Page

Table of Contents

Contents Page

Table of Contents

Contents Page

Table of Contents

Contents Page

APPENDICES

Table of Contents

Figure Page

Table of Contents

Table | Page

Table of Contents

Table | Page

Table of Contents

Table | Page

Table of Contents

Table | Page

Abbreviations and Acronyms

ABBREVIATIONS AND ACRONYMS

AAQS	ambient air quality standards
AB	Assembly Bill
ACM	asbestos-containing materials
ADT	average daily traffic
amsl	above mean sea level
AQMP	air quality management plan
AST	aboveground storage tank
BAU	business as usual
bgs	below ground surface
BMP	best management practices
CAA	Clean Air Act
CAFE	corporate average fuel economy
CalARP	California Accidental Release Prevention Program
CalEMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cfs	cubic feet per second
CGS	California Geologic Survey
CMP	congestion management program

Abbreviations and Acronyms

CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
Corps	US Army Corps of Engineers
CSO	combined sewer overflows
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gases
GWP	global warming potential
HCM	Highway Capacity Manual
HQTA	high quality transit area
HVAC	heating, ventilating, and air conditioning system
IPCC	Intergovernmental Panel on Climate Change
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LBP	lead-based paint
LCFS	low-carbon fuel standard
LOS	level of service
LST	localized significance thresholds
M_W	moment magnitude
MCL	maximum contaminant level
MEP	maximum extent practicable

Abbreviations and Acronyms

mgd	million gallons per day
MMT	million metric tons
MPO	metropolitan planning organization
MT	metric ton
MWD	Metropolitan Water District of Southern California
NAHC	Native American Heritage Commission
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
OES	California Office of Emergency Services
PM	particulate matter
POTW	publicly owned treatment works
ppm	parts per million
PPV	peak particle velocity
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RMP	risk management plan
RMS	root mean square
RPS	renewable portfolio standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	state implementation plan
SLM	sound level meter
SoCAB	South Coast Air Basin
SO_X	sulfur oxides
SQMP	stormwater quality management plan
SRA	source receptor area [or state responsibility area]
SUSMP	standard urban stormwater mitigation plan
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board

Abbreviations and Acronyms

TAC	toxic air contaminants
TNM	transportation noise model
tpd	tons per day
TRI	toxic release inventory
TTCP	traditional tribal cultural places
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	urban water management plan
V/C	volume-to-capacity ratio
VdB	velocity decibels
VHFHSZ	very high fire hazard severity zone
VMT	vehicle miles traveled
VOC	volatile organic compound
WQMP	water quality management plan
WSA	water supply assessment

Abbreviations and Acronyms

This page intentionally left blank.

1. Executive Summary

1.1 INTRODUCTION

This Draft Environmental Impact Report (DEIR) addresses the environmental effects associated with the implementation of the proposed West Carson Transit Oriented District (TOD) Specific Plan. The California Environmental Quality Act (CEQA) requires that local government agencies consider the environmental consequences before taking action on projects over which they have discretionary approval authority. An environmental impact report (EIR) analyzes potential environmental consequences in order to inform the public and support informed decisions by local and state governmental agency decision makers. This document focuses on impacts determined to be potentially significant in the Initial Study completed for this project (see Appendix A).

This DEIR has been prepared pursuant to the requirements of CEQA and Los Angeles County's CEQA procedures. The County of Los Angeles, as the lead agency, has reviewed and revised all submitted drafts, technical studies, and reports as necessary to reflect its own independent judgment, including reliance on City technical personnel from other departments and review of all technical subconsultant reports.

Data for this DEIR derive from onsite field observations, discussions with affected agencies, analysis of adopted plans and policies, review of available studies, reports, data and similar literature, and specialized environmental assessments (aesthetics, air quality, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, public services, recreation, transportation and traffic, tribal cultural resources, and utilities and service systems).

1.2 ENVIRONMENTAL PROCEDURES

This DEIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the proposed project, as well as anticipated future discretionary actions and approvals. CEQA established six main objectives for an EIR:

1. Disclose to decision makers and the public the significant environmental effects of proposed activities.
2. Identify ways to avoid or reduce environmental damage.
3. Prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
4. Disclose to the public reasons for agency approval of projects with significant environmental effects.
5. Foster interagency coordination in the review of projects.
6. Enhance public participation in the planning process.

1. Executive Summary

An EIR is the most comprehensive form of environmental documentation in CEQA and the CEQA Guidelines; it is intended to provide an objective, factually supported analysis and full disclosure of the environmental consequences of a proposed project with the potential to result in significant, adverse environmental impacts.

An EIR is one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Before approving a proposed project, the lead agency must consider the information in the EIR; determine whether the EIR was prepared in accordance with CEQA and the CEQA Guidelines; determine that it reflects the independent judgment of the lead agency; adopt findings concerning the project's significant environmental impacts and alternatives; and adopt a statement of overriding considerations if significant impacts cannot be avoided.

1.2.1 EIR Format

Chapter 1. Executive Summary: Summarizes the background and description of the proposed project, the format of this EIR, project alternatives, any critical issues remaining to be resolved, and the potential environmental impacts and mitigation measures identified for the project.

Chapter 2. Introduction: Describes the purpose of this EIR, background on the project, the notice of preparation, the use of incorporation by reference, and Final EIR certification.

Chapter 3. Project Description: A detailed description of the project, including its objectives, its area and location, approvals anticipated to be required as part of the project, necessary environmental clearances, and the intended uses of this EIR.

Chapter 4. Environmental Setting: A description of the physical environmental conditions in the vicinity of the project as they existed at the time the notice of preparation was published, from local and regional perspectives. These provide the baseline physical conditions from which the lead agency determines the significance of the project's environmental impacts.

Chapter 5. Environmental Analysis: Each environmental topic is analyzed in a separate section that discusses: the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the project; the existing environmental setting; the potential adverse and beneficial effects of the project; the level of impact significance before mitigation; the mitigation measures for the proposed project; the level of significance after mitigation is incorporated; and the potential cumulative impacts of the proposed project and other existing, approved, and proposed development in the area.

Chapter 6. Significant Unavoidable Adverse Impacts: Describes the significant unavoidable adverse impacts of the proposed project.

Chapter 7. Alternatives to the Proposed Project: Describes the alternatives and compares their impacts to the impacts of the proposed project. Alternatives include the No Project/Existing General Plan Alternative, Reduced Intensity Alternative, and an Alternative Land Use Plan.

Chapter 8. Impacts Found Not to Be Significant: Briefly describes the potential impacts of the project that were determined not to be significant by the Initial Study and were therefore not discussed in detail in this EIR.

Chapter 9. Significant Irreversible Changes Due to the Proposed Project: Describes the significant irreversible environmental changes associated with the project.

Chapter 10. Growth-Inducing Impacts of the Project: Describes the ways in which the proposed project would cause increases in employment or population that could result in new physical or environmental impacts.

Chapter 11. Organizations and Persons Consulted: Lists the people and organizations that were contacted during the preparation of this EIR.

Chapter 12. Qualifications of Persons Preparing EIR: Lists the people who prepared this EIR for the proposed project.

Chapter 13. Bibliography: The technical reports and other sources used to prepare this EIR.

Appendices: The appendices for this document comprise these supporting documents:

- Appendix A: Initial Study/Notice of Preparation
- Appendix B: NOP Comments
- Appendix C: West Carson Transit Oriented District Specific Plan
- Appendix D: Air Quality/GHG Modeling
- Appendix E: Cultural Resources Study
- Appendix F: EDR Radius Map Report
- Appendix G: Storm Water Study
- Appendix H: Noise Modeling
- Appendix I: Service Provider Responses
- Appendix J: Traffic Study
- Appendix K: Sewer Area Study
- Appendix L: Water Area Study

1.2.2 Type and Purpose of This DEIR

This DEIR fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as for a Project EIR, Program EIRs are typically more conceptual than Project EIRs, with a more general discussion of impacts, alternatives, and mitigation measures. According to Section 15168 of the CEQA Guidelines, a Program EIR may be prepared on a series of actions that can be characterized as one large project. Use of a Program EIR gives the lead agency an opportunity to consider broad policy

alternatives and programwide mitigation measures, as well as greater flexibility to address project-specific and cumulative environmental impacts on a comprehensive scale.

Agencies prepare Program EIRs for programs or a series of related actions that are linked geographically; logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program; or individual activities carried out under the same authority and having generally similar environmental effects that can be mitigated in similar ways.

Once a Program EIR has been prepared, subsequent activities within the program must be evaluated to determine whether an additional CEQA document is necessary. However, if the Program EIR addresses the program's effects as specifically and comprehensively as possible, many subsequent activities may be within the Program EIR's scope, and additional environmental documents may not be required (Guidelines § 15168[c]). When a lead agency relies on a Program EIR for a subsequent activity, it must incorporate feasible mitigation measures and alternatives from the Program EIR into the subsequent activities (Guidelines § 15168[c][3]). If a subsequent activity would have effects outside the scope of the Program EIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or an EIR. Even in this case, the Program EIR still serves a valuable purpose as the first-tier environmental analysis. The CEQA Guidelines encourage the use of Program EIRs, citing five advantages:

- Provide a more exhaustive consideration of impacts and alternatives than would be practical in an individual EIR;
- Focus on cumulative impacts that might be slighted in a case-by-case analysis;
- Avoid continual reconsideration of recurring policy issues;
- Consider broad policy alternatives and programmatic mitigation measures at an early stage when the agency has greater flexibility to deal with them;
- Reduce paperwork by encouraging the reuse of data (through tiering). (Guidelines § 15168[h])

1.3 PROJECT LOCATION

Regional Location

The proposed project is in the Community of West Carson in unincorporated Los Angeles County. West Carson encompasses about 2.3 square miles between the cities of Torrance to the north, Harbor City (a neighborhood in the City of Los Angeles) to the south, Carson to the east, and Los Angeles and Torrance to the west. West Carson is in the southwest part of the Los Angeles Basin, a coastal plain extending from the Pacific Ocean on the south to the Santa Monica Mountains and Puente Hills on the north. Most of West Carson slopes slightly down toward the east; elevations range from about 68 feet above mean sea level on the community's southwestern boundary to about 30 feet above mean sea level on the eastern boundary.

Project Site

The West Carson TOD Specific Plan covers approximately 319.3 acres and is bounded generally by Normandie Avenue on the west, the 208th Street Drain and West Torrance Boulevard to the north, Interstate 110 (I-110; Harbor Freeway) on the east, and 223rd Street on the south. Major arterial roadways in and

alongside the project site are Normandie Avenue and Vermont Avenue (north-south) and Torrance Boulevard, Carson Street, and 223rd Street (east-west).

The project site encompasses land within a half-mile radius and to the west of the Carson Metro Station, a bus rapid transit stop along a designated bus lane adjacent to I-110. A large portion of the project area contains the Harbor-UCLA Medical Center campus, which includes the Los Angeles Biomedical Research Institute (LA BioMed); the campus is major employment center that draws people from across the entire Los Angeles region. The project area is also just south of the Harbor Gateway Transit Center, a regional transit hub that connects the South Bay area to Downtown Los Angeles and other locations throughout the county.

Regional access to the project site is from I-110 via ramps at Torrance Boulevard and Carson Street. The Carson Metro Station for the Metro Silver Line is on I-110 below the Carson Street overpass and provides bus rapid transit service from San Pedro to El Monte via downtown Los Angeles.

1.4 PROJECT SUMMARY

The West Carson TOD Specific Plan was prepared to guide future transit-oriented development throughout the project area in order to create a distinct identity; improve connections and access for all users; and improve the safety, economic vitality, and overall quality of life for the West Carson community.

The Specific Plan provides comprehensive direction for the development of the project area and facilitates implementation of the goals and policies of the County of Los Angeles 2035 General Plan (General Plan), including the vision for the TOD priority areas. It is intended to expand opportunities for compact, infill development that is compatible with and supports intensification while staying sensitive to the existing single-family neighborhoods.

The Specific Plan would be used in conjunction with the General Plan and Los Angeles County Code to provide more detailed design and development criteria for individual project proposals and public improvements in the project area. The plan defines the proposed land use plan, development standards, infrastructure improvements, design guidelines, and implementation programs for any proposed project in the Specific Plan area.

Proposed Specific Plan

The Specific Plan consists of eight sections:

1. **Introduction.** Covers the purpose and context for the Specific Plan, an overview of the planning process, and the plan's relationship to other relevant plans and programs.

2. **Vision and Goals.** Outlines the vision for the community and the overarching goals and policies for achieving that vision.

3. **Land Use and Urban Design Framework.** Identifies the land use and urban design framework, including permitted uses and regulations and development standards for each of the Specific Plan zones,

such as building height, density, parking, site configuration, building design, open space and landscaping requirements, and other design standards.

4. **Mobility.** Provides a summary of the proposed mobility plan, including the vehicular, pedestrian, bicycle, transit, and parking networks.

5. **Infrastructure.** Addresses the critical infrastructure requirements associated with future development in the Specific Plan area, including water, sewer, stormwater, solid waste, and public services.

6. **Economic Development.** Highlights opportunities for economic development in the plan area and associated community benefits.

7. **Capital Improvement Plan.** Details the capital improvement recommendations and phasing for the plan.

8. **Implementation and Administration.** Provides specific implementation and financial strategies for realizing the goals of the Specific Plan as well as describing project review and administrative procedures required for amendments and/or modifications to the plan.

Proposed Zoning Districts and Buildout Potential

The Specific Plan would designate the following zoning districts for the project site: West Carson Residential 1 Zone, West Carson Residential 3 Zone, West Carson Residential 4 Zone, Residential Planned Development, Neighborhood Commercial, Unlimited Commercial, Industrial Flex, Harbor-UCLA Medical Zone, Mixed Use 1 Zone, Mixed Use 2 Zone, and Public Zone.

Based on the development potential of each zoning district, buildout of the Specific Plan would allow up to 3,574 residential units and 2,661,321 square feet of nonresidential uses (see Table 3-1). Currently, the plan area holds 1,303 residential units and about 956,335 square feet of nonresidential land uses. The maximum buildout intensity would entail net increases of approximately 2,271 residential units (174 percent increase), and 1.7 million square feet of nonresidential land uses (178 percent increase).

Mobility and Parks

The Specific Plan chapter, "Mobility and Public Realm Strategy," describes the circulation improvements needed to support transit oriented development in the Specific Plan area. A key component of the Specific Plan is transforming the current circulation network, which largely supports vehicular travel, into a network that places a higher priority on the principles of complete streets and multimodal design. The strategies in this chapter of the Specific Plan provide a framework for establishing and maintaining a sustainable circulation network that integrates motorized and nonmotorized transportation.

Table 1-1 West Carson TOD Specific Plan Development Potential

Proposed Zoning District	Acres	Percentage of Total	Residential Units	Nonresidential Building Area, Square Feet
Proposed Project				
West Carson Residential 1	118	37.0	851	—
West Carson Residential 3	7	2.2	171	—
West Carson Residential 4	12	3.8	484	—
Residential Planned Development	5	1.7	88	—
Subtotal, Residential Zoning Districts	*142*	*44.7*	*1,594*	—
Neighborhood Commercial	1	0.4	—	14,787
Unlimited Commercial	4	1.3	30	50,620
Industrial Flex	22	6.8	486	1,133,779
Harbor-UCLA Medical	71	22.4	100	—
Mixed Use 1	20	6.2	143	483,460
Mixed Use 2	31	9.8	1,223	978,675
Public Zone	27	8.5	—	—
Subtotal, Nonresidential Districts	*176*	*55.4*	*1,882*	*2,661,321*
Total	319 acres	100%	3,574	2,661,321
Existing Conditions				
Existing Conditions	319	—	1,303	956,335
Net Increase/(Decrease)	0	—	2,271	1,704,985
Percent Net Increase	0%	—	174%	178%

Note: The total may not equal the sum of the components due to rounding.

Street Network

Much of the street network in the Specific Plan area would remain the same; however, streetscape improvements are proposed along key arterials. These improvements are intended to transform the auto-oriented streetscape into more sustainable, multimodal design. They include elements such as wider sidewalks, bicycle and transit facilities and amenities, landscaping and street trees, lighting, and landscaped medians.

Transit Circulation

The Specific Plan area encompasses a rich transit network of three local transit agencies—Metro, Torrance Transit, and Gardena Municipal. Eight local bus routes traverse the Specific Plan area on primary transit corridors that include Normandie Avenue, Vermont Avenue, Carson Street, and 220th Street.

To improve transit access and safety, the Specific Plan proposes to move the existing Carson Metro station from underneath the Carson Street overpass to a new location along I-110. This would make waiting transit patrons more visible and improve safety. Additional transit amenities proposed in the Specific Plan include shelters, improved plaza areas, benches, lighting, transit information, bicycle racks, and public art.

Parks

Half an acre of parkland in the Specific Plan area is available for recreational and public use at Learning Grove Park. This county park has green space but no amenities and is used as a joint-use facility with Meyler Street Elementary School. Another joint-use park in the Specific Plan area, at Van Deene Avenue Elementary School, has park amenities such as basketball courts and playground equipment, but no green or open space.

The Specific Plan designates several sites that could be redeveloped as pocket parks by converting cul-de-sacs, partially covering a drainage channel, and—ultimately—reclaiming property that will no longer be needed by Harbor-UCLA Medical Center.

Infrastructure Improvements

Water

The Specific Plan area is serviced by pipes that vary from 2-inch connectors to 33-inch main lines. The vast majority of pipe is composed of transite and PVC. Buildout of the Specific Plan would require the following water line upgrades:

- The 14-inch pipe in Vermont Avenue from Carson Street to 220th Street would require resizing to a minimum of a 20-inch pipe.
- The flow rate to the north from Carson Street to 214th Street is split between two lines: an 8-inch pipe along Vermont Avenue, and a 16-inch pipe along Menlo Avenue. One or both pipes would need to be resized. Without knowing the flow into each pipeline, exact sizing cannot be recommended at this time.

Sewer

Two sanitary systems exist in the Specific Plan area—local lines and trunk sewers. The local system is a series of primarily eight-inch gravity mains with laterals connecting to existing buildings. All of these sewers are composed of vitrified clay pipe. All local sewer lines are owned and operated by the County of Los Angeles Department of Public Works.

The trunk sewer lines are owned and operated by the Sanitation Districts of Los Angeles County, Carson District. Four main segments of these trunk lines collect sewage from the Specific Plan area. Sewer upgrades required to accommodate buildout of the Specific Plan include:

- The area north of Carson Street and east of Vermont Avenue would require connection to the existing trunk line south of Carson Street.
- The trunk line south of 220th Street past the Specific Plan area is undersized for flow in the area. Strategies that could address the flow need include:
  - Install a pumping station that could provide pressure to the line to allow more sewage flow through it;
  - Increase the size of the trunk
  - Increase the slope of the trunk

Stormwater

Stormwater services in the West Carson TOD Specific Plan area are connected to the large network of open channel drains that are tied to a larger collection basin. The Specific Plan recommends that all new development projects involving construction of new roadways conform to the Green Infrastructure Guidelines ("low-impact development") of the Los Angeles County Department of Public Works.

1.5 SUMMARY OF PROJECT ALTERNATIVES

The following three alternatives have been determined to represent a reasonable range of alternatives which have the potential to feasibly attain most of the basic objectives of the project but which may avoid or substantially lessen any of the significant effects of the project.

- No Project/Existing General Plan Alternative
- Reduced Intensity Alternative
- Alternative Land Use Plan

The following statistical analysis provides a summary of general socioeconomic build-out projections determined by the four land use alternatives, including the proposed project.

Table 1-2 Proposed Project and Alternatives Buildout Statistical Summary

	Proposed Project	No Project/Existing General Plan Alternative	Reduced Intensity Alternative	Alternative Land Use Plan
Dwelling Units	3,574 (938 SFR and 2,636 MFR)	1,369 (1,188 SFR and 181 MFR)	2,502 (657 SFR and 1,845 MFR)	4,646 (1,219 SFR and 3,427 MFR)
Nonresidential SF	2,661,321	1,703,005 SF[1]	1,862,925[2]	1,862,925[2]
Population[3]	9,840	4,073	6,598	12,252
Employment[4]	4,195	1,858	2,365	2,365
Jobs-to-Housing Ratio	1.17	1.36	0.95	0.51

Notes: SFR = single family residential; MFR =multifamily residential

[1] Population projections are based on an occupancy rate of 99.0% and 3.08 persons per household (PPH) for SFR and an occupancy rate of 94.7% and 2.63 PPH for MFR. Average occupancy rates and PPH are used for alternatives with undistinguished SFR and MFR units (96.9% occupancy and 2.86 PPH).

[2] Total nonresidential SF for the Reduced Intensity Alternative and Alternative Land Use Plan consists of 45,785 SF commercial; 793,645 SF industrial; and 1,023,495 SF mixed use.

[3] Total nonresidential SF for the existing General Plan consists of 255,902 SF commercial; 146,510 SF office; and 1,300,593 SF industrial.

[3] Employment generation rates were based on those detailed in Table 5.10-9 of Section 5.10, *Population and Housing*, of this DEIR. The average of commercial and office employment generation rates were used to calculate jobs for Mixed Use development.

1.5.1 No Project/Existing General Plan Alternative

The No Project/Existing General Plan Alternative assumes the West Carson TOD Specific Plan would not be adopted and the current General Plan designations of the project area would remain. Pursuant to CEQA Guidelines Section 15126.6(e)(3)(A), where a project is the revision of an existing regulatory plan, the "no project" alternative assumes continuation of the existing plan, policy or operation into the future. Therefore, this alternative assumes that new development and redevelopment would continue to occur in the project area

consistent with the provisions of the project site's General Plan designations, including Residential 9, 18, 30, and 50; General Commercial, Mixed Use, Light Industrial, and Public and Semi-Public uses.

As shown in Table 1-2, this alternative would allow substantially fewer dwelling units and nonresidential building square footage compared to the proposed project. Overall, development of the project site under the No Project/Existing General Plan Alternative would allow up to 1,369 dwelling units, 1,703,005 square feet of nonresidential development, which would generate approximately 4,073 residents and 1,858 jobs.

Ability to Reduce Environmental Impact

As detailed above, the No Project/Existing General Plan Alternative would reduce impacts to air quality, geology and soils, GHG emissions, hazards and hazardous materials, noise, population and housing, public services, recreation, and utilities and service systems. Impacts to transportation and traffic would be greater, and impacts to aesthetics, cultural resources, hydrology and water quality, land use and planning, and tribal cultural resources would be similar.

This alternative would be able to eliminate one significant and unavoidable air quality impact related to consistency with the SCAQMD's AQMP, but significant and unavoidable impacts to construction and operational air quality, GHG emissions, construction noise, and traffic would remain.

Ability to Achieve Project Objectives

The No Project/Existing General Plan Alternative would not be able to achieve as many of the project objectives as the West Carson TOD Specific Plan. Development in accordance with the Count's General Plan would not include the urban design standards, development standards, and public realm strategies of the proposed Specific Plan that would help create a distinct identity to the West Carson community, encourage a diverse mix of land uses and transit oriented development, and improvements to the public realm (Objective No's 1, 5 and 6). This alternative also would not include the proposed project's multimodal transportation amenities and relocation of the Carson Metro Station that can improve connections within the community and increase access to transit (Objective No. 2). Development in accordance with the existing General Plan also would not include implementation of sustainable development guidelines detailed in the proposed Specific Plan (Objective No. 7).

Buildout of this alternative would be able to provide health and safety to residents, visitors and employees and ensure economic vitality of the project area (Objective No's 3 and 4); however, it would achieve these objectives to a lesser degree than the proposed project. The West Carson TOD Specific Plan includes complete streets strategies, including implementation of pedestrian, bicyclist, transit users, and motorist amenities that would help increase safety and connectivity within the community. Public realm strategies (i.e., pedestrian crossings, streetscape enhancements, multiuse trails, and pocket parks) would also encourage the health and safety of residents, visitors and employees. The proposed project would also allow a mix of transit oriented land use types that would bolster the economic vitality of West Carson more so than the existing General Plan.

1.5.2 Reduced Intensity Alternative

The Reduced Density Alternative was evaluated for its potential to reduce the proposed project's significant and unavoidable impacts related to construction and operational air quality, GHG emissions, and construction noise. This alternative would include adopting the West Carson TOD Specific Plan and implementing its goals and policies, but would reduce proposed residential and nonresidential development by 30 percent.

As shown in Table 1-2, buildout of the Reduced Intensity Alternative would allow up to 2,502 dwelling units (657 single-family residences and 1,845 multifamily residences) and 1,862,925 square feet of nonresidential development. This alternative would introduce approximately 6,598 residents and generate 2,365 jobs, creating a jobs-housing ratio of 0.95.

Ability to Reduce Environmental Impact

The Reduced Intensity Alternative would reduce impacts to aesthetics, air quality, geology and soils, GHG emissions, hazards and hazardous materials, noise, public services, recreation, transportation and traffic, and utilities and service systems. Impacts to cultural resources, hydrology and water quality, land use and planning, population and housing, and tribal cultural resources would be similar.

While this alternative would reduce impacts to many topical sections, significant and unavoidable impacts to air quality (construction, operations, and AQMP consistency), GHG emissions, and construction noise would remain.

Ability to Achieve Project Objectives

This alternative would reduce development intensity but would still adopt and implement the West Carson TOD Specific Plan. Therefore, it would be able to create a distinct identity in the West Carson community (Objective No. 1); ensure the health and safety of residents, visitors and employees (Objective No. 3); ensure economic vitality of the project area (Objective No. 4); and maximize the use of sustainable development practices (Objective No. 7). The mobility and public realm improvements in the Specific Plan would also allow improvements to connections within the community and increase access to transit (Objective No. 2) and improve the quality of life for existing residents with improvements to the public realm (Objective No. 6).

However, a transit oriented community is recognized as an area well suited for higher density housing and mixed uses surrounding existing major commercial, employment, and civic activity nodes. Therefore, this alternative's 30-percent reduction in residential and nonresidential development may not achieve the project's objective to encourage a diverse mix of land uses and transit oriented development to the same degree as the proposed project (Objective No. 5).

1.5.3 Alternative Land Use Plan

The Alternative Land Use Plan was evaluated for its potential to assist the County in providing more housing at higher densities in the subregion with the potential for affordable housing development. This would help

the County meet its share of the regional housing need through Program 6 (Transit Oriented Districts Program) of the County of Los Angeles Housing Element.

This alternative would involve adopting the West Carson TOD Specific Plan and implementing its goals and policies, but would increase residential development by 30 percent and decrease nonresidential development by 30 percent. As detailed in Table 1-2, buildout of the Alternative Land Use Plan would allow up to 4,646 dwelling units (1,219 single-family residences and 3,427 multifamily residences) and 1,862,925 square feet of nonresidential development. This alternative would introduce approximately 12,252 residents and generate 2,365 jobs, creating a jobs-housing ratio of 0.50.

Ability to Reduce Environmental Impact

The Alternative Land Use Plan would have similar impacts to aesthetics, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, transportation and traffic, and tribal cultural resources. Impacts to air quality, GHG emissions, population and housing, recreation, and utilities and service systems would be greater than the proposed project.

Significant and unavoidable impacts to air quality (construction, operation, and AQMP consistency), GHG emissions, and construction noise would remain.

Ability to Achieve Project Objectives

The West Carson TOD Specific Plan would still be adopted and implemented under the Alternative Land Use Plan. Therefore, this alternative would be able to create a distinct identity in the West Carson community (Objective No. 1); improve connections within the community and increase access to transit through implementation of the Specific Plan's mobility strategies (Objective No. 2); ensure the health and safety of residents, visitors and employees (Objective No. 3); improve the quality of life for existing residents with improvements to the public realm as detailed in the Mobility and Public Realm section of the Specific Plan (Objective No. 6); and maximize the use of sustainable development practices (Objective No. 7).

However, since nonresidential development would decrease by 30 percent from 2,661,321 to 1,862,925 square feet, ensuring the economic vitality of the project area may not be achieved as well as under the proposed project (Objective No. 4), and the alternative land use mix with more residential development may not encourage as diverse a mix of land uses and transit oriented development (Objective No. 5).

1.6 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the lead agency as to:

1. Whether this DEIR adequately describes the environmental impacts of the project.

2. Whether the benefits of the project override those environmental impacts which cannot be feasibly avoided or mitigated to a level of insignificance.

3. Whether the proposed land use changes are compatible with the character of the existing area.

4. Whether the identified goals, policies, or mitigation measures should be adopted or modified.

5. Whether there are other mitigation measures that should be applied to the project besides the Mitigation Measures identified in the DEIR.

6. Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic project objectives.

1.7 AREAS OF CONTROVERSY

In accordance with Section 15123(b)(2) of the CEQA Guidelines, the EIR summary must identify areas of controversy known to the lead agency, including issues raised by agencies and the public. Prior to preparation of the DEIR, the Notice of Preparation (NOP) was distributed for comment from January 17, 2017, through February 17, 2017. A public scoping meeting was held on February 1, 2017 at the Harbor-UCLA Medical Center, A.F. Parlow Library Auditorium at 1000 W. Carson Street, Torrance, CA 90502. A summary of the NOP comment letters received during the public review period and testimony at the public scoping meeting are summarized in Tables 2-1 and 2-2 in Chapter 2, *Introduction*.

1.8 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 1-3 summarizes the conclusions of the environmental analysis contained in this EIR. Impacts are identified as significant or less than significant, and mitigation measures are identified for all significant impacts. The level of significance after imposition of the mitigation measures is also presented.

1. Executive Summary

This page intentionally left blank.

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 AESTHETICS			
Impact 5.1-1: Buildout of the proposed project would not substantially degrade the existing visual character or quality of the project area.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.1-2: The West Carson TOD Specific Plan would generate additional light and glare.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.2 AIR QUALITY			
Impact 5.2-1: Criteria air pollutant emissions associated with population and employment growth in the West Carson TOD Specific Plan have the potential to affect the assumptions of SCAQMD Air Quality Management Plan.	Potentially Significant	Mitigation Measures AQ-1 through AQ-5 (for Impacts 5.2-2 and 5.2-3) would reduce the proposed project's regional construction-related and operational-phase criteria air pollutant emissions to the extent feasible to minimize potential conflicts with the South Coast Air Quality Management District's Air Quality Management Plan (AQMP). However, no mitigation measures are available that would reduce impacts associated with inconsistency with the AQMPs due to the magnitude of growth and associated emissions that would be generated by the buildout of West Carson TOD Specific Plan.	Significant and Unavoidable
Impact 5.2-2: Construction activities associated with buildout of the West Carson TOD Specific Plan could exceed SCAQMD's regional significance thresholds.	Potentially Significant	AQ-1 Applicants for new development projects within the West Carson TOD Specific Plan shall require the construction contractor to use equipment that meets the US Environmental Protection Agency (EPA) Tier 4 emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower, unless it can be demonstrated to the County of Los Angeles that such equipment is not available. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by the California Air Resources Board's regulations. Prior to construction, the project engineer shall ensure that all demolition and grading plans clearly show the requirement for EPA Tier 4 or higher emissions standards for construction equipment over 50 horsepower. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the County of Los Angeles. The construction equipment list shall state the makes, models, and	Significant and Unavoidable

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			numbers of construction equipment onsite. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449.	
		AQ-2	Applicants for new development projects within the West Carson TOD Specific Plan shall require the construction contractor to prepare a dust control plan and implement the following measures during ground-disturbing activities—in addition to the existing requirements for fugitive dust control under South Coast Air Quality Management District (SCAQMD) Rule 403—to further reduce PM_{10} and $PM_{2.5}$ emissions. The County of Los Angeles shall verify that these measures have been implemented during normal construction site inspections. ■ Following all grading activities, the construction contractor shall reestablish ground cover on the construction site through seeding and watering. ■ During all construction activities, the construction contractor shall sweep streets with SCAQMD Rule 1186–compliant, PM_{10}-efficient vacuum units on a daily basis if silt is carried over to adjacent public thoroughfares or occurs as a result of hauling. ■ During all construction activities, the construction contractor shall maintain a minimum 24-inch freeboard on trucks hauling dirt, sand, soil, or other loose materials and shall tarp materials with a fabric cover or other cover that achieves the same amount of protection. ■ During all construction activities, the construction contractor shall water exposed ground surfaces and disturbed areas a minimum of every three hours on the construction site and a minimum of three times per day.	

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			During all construction activities, the construction contractor shall limit onsite vehicle speeds on unpaved roads to no more than 15 miles per hour.	
Impact 5.2-3: Long-term operation of the West Carson TOD Specific Plan would generate emissions that would exceed SCAQMD's regional significance thresholds.	Potentially Significant	AQ-3	Prior to issuance of a building permit for new development projects within the West Carson TOD Specific Plan, the property owner/developer shall show on the building plans that all major appliances (dishwashers, refrigerators, clothes washers, and dryers) to be provided/installed are Energy Star appliances. Installation of Energy Star appliances shall be verified by the County of Los Angeles prior to issuance of a certificate of occupancy.	Significant and Unavoidable
		AQ-4	Prior to issuance of building permits for residential development projects within the West Carson TOD Specific Plan, 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 County of Los Angeles 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.	
		AQ-5	Prior to issuance of building permits for nonresidential development projects within the West Carson TOD Specific Plan, 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 County of Los Angeles 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.	

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			■ 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 nonresidential building with 30 or more parking spaces. Installation shall be consistent with Section A5.106.5.3 (Nonresidential Voluntary Measures) of the CALGreen Code.	
Impact 5.2-4: Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations.	Potentially Significant	Mitigation Measures AQ-1 and AQ-2 would also reduce the proposed project's localized construction-related criteria air pollutant emissions to the extent feasible.		Significant and Unavoidable
Impact 5.2-5: Operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations.	Less Than Significant	No mitigation measures are required.		Less Than Significant
Impact 5.2-6: The proposed project would not create objectionable odors.	Less Than Significant	No mitigation measures are required.		Less Than Significant
5.3 CULTURAL RESOURCES				
Impact 5.3-1: Development of the project could impact an identified historic resource.	Potentially Significant	CUL-1	As a condition of approval, future development or redevelopment projects on any of the properties listed in Table 5.3-1, *Potentially Historic Properties in the Specific Plan Area*, of the West Carson TOD Specific Plan EIR (SCH No. 2017011010) that may involve a substantial adverse change as defined by Public Resources Code 5020.1 shall require the following of the property owner or project applicant/developer: ■ Preparation of an intensive-level historical evaluation of the subject property. The evaluation shall be conducted in accordance with all applicable federal, state, and local guidelines for evaluating historical resources. Recommendations for preservation should be considered, if applicable. The historical evaluation shall be submitted to the County of	Less Than Significant

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			Los Angeles Department of Regional Planning for review and approval. ■ Preparation of a Phase I cultural resources investigation that complies with current standards and guidelines for any properties not previously improved (e.g., open space or native soils).	
Impact 5.3-2: Development of the project could impact archaeological resources.	Potentially Significant	CUL-2	As a condition of approval for projects involving subterranean levels and/or parking, future project applicants/developers shall provide written evidence to the County of Los Angles that a County-certified archaeologist has been retained to observe grading activities greater than six feet in depth and salvage and catalogue archaeological resources as necessary. The archaeologist shall be present at the pregrade conference; shall establish procedures for archaeological resource surveillance; and shall establish, in cooperation with the applicant, procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts as appropriate. If the archaeological resources are found to be significant, the archaeological *monitor* shall determine appropriate actions, in cooperation with the project applicant/developer, for exploration and/or salvage. The archaeologist shall prepare a comprehensive report including appropriate records for the California Department of Parks and Recreation (Building, Structure, and Object Record; Archaeological Site Record; or District Record, as applicable). If any resources are excavated, the project applicant/developer shall prepare excavated material to the point of identification. Future applicants/developers shall offer excavated finds for curatorial purposes to the County of Los Angeles, or its designee, on a first refusal basis. These actions, as well as final mitigation and disposition of the resources, shall be subject to the approval of the County. The project applicant/developer shall pay curatorial fees if an applicable fee program has	Less Than Significant

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			been adopted by the Board of Supervisors, and such fee program is in effect at the time of presentation of the materials to the County or its designee, all in a manner meeting the approval of the County.	
Impact 5.3-3: The proposed project could adversely impact paleontological resources or unique geologic features.	Potentially Significant	CUL-3	As a condition of approval for projects involving subterranean levels and/or parking, the future project applicant/developer shall retain a qualified paleontologist to monitor grading activities greater than six feet in depth. Deep excavations may impact undisturbed deposits in older Quaternary alluvium, which is typically associated with fossils. The qualified paleontologist shall be present during the pre-grading meeting to discuss paleontological sensitivity and to assess whether scientifically important fossils have the potential to be encountered. The paleontologist shall determine, based on consultation with the County, when monitoring of grading activities is needed based on the onsite soils and final grading plans. All paleontological work to assess and/or recover a potential resource at the project site shall be conducted under the direction of the qualified paleontologist and follow the standard protocols of the Natural History Museum of Los Angeles County. If any fossil remains are uncovered during earth-moving activities, all heavy equipment shall be diverted at least 50 feet from the fossil site until the monitor has had an opportunity to examine the remains and determines that earth-moving can resume. The extent of land area that is prohibited from disturbance shall be at the discretion of the paleontological monitor. Samples of older Quaternary alluvium shall be collected as necessary for processing and shall be examined for very small vertebrate fossils. The paleontologist shall prepare a report of the results of any findings following accepted professional practice and submit the report for review by the County of Los Angeles Department of Regional Planning.	Less Than Significant

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.4 GEOLOGY AND SOILS			
Impact 5.4-1: Implementation of the Specific Plan would not substantially exacerbate liquefaction or lateral spreading hazards onsite.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.4-2: Specific Plan buildout could cause soil erosion or loss of topsoil.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.4-3: Specific Plan buildout would not substantially aggravate hazards from subsidence or collapsible soils.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.4-4: Specific Plan buildout would not substantially exacerbate hazards from expansive soils.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.5 GREENHOUSE GAS EMISSIONS			
Impact 5.5-1: Development of the proposed project would result in a substantial increase of GHG emissions.	Potentially Significant	Mitigation Measures AQ-3 through AQ-5 would also reduce the proposed project's GHG emissions to the extent feasible.	Significant and Unavoidable
Impact 5.5-2: The proposed project would not conflict with the plans adopted for the purpose of reducing GHG emissions.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.6 HAZARDS AND HAZARDOUS MATERIALS			
Impact 5.6-1: Project construction and operations would involve the transport, use, and/or disposal of hazardous materials.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.6-2: Demolition of existing buildings could expose people to asbestos-containing materials and/or lead-based paint.	Potentially Significant	HAZ-1 In the event that building materials are encountered during demolition activities that are suspected of being asbestos-containing materials (ACMs), these materials shall be assumed to contain asbestos and shall be handled, removed, transported, and/or disposed of in accordance with applicable ACM regulations. Any required removal of asbestos shall be made under the	Less Than Significant

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			direction of a Cal/OSHA-certified asbestos consultant.	
Impact 5.6-3: Several properties within the Specific Plan area are listed on hazardous materials databases.	Potentially Significant	HAZ-2	As a condition of approval for individual development projects on former or existing commercial or industrial sites , the project applicant shall prepare and submit a Phase I Environmental Site Assessment (ESA) to the County of Los Angeles to identify environmental conditions of the development site and determine whether contamination is present. The Phase I ESA shall be prepared by an Environmental Professional in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527.13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." If recognized environmental conditions related to soils or groundwater are identified in the Phase I ESA, the project applicant shall have soil and soil gas sampling performed, as required, as a part of a Phase II ESA. If contamination is found at significant levels, the project applicant shall remediate all contaminated soils in accordance with state and local agency requirements and with the oversight of the California Department of Toxic Substances Control, Regional Water Quality Control Board, Los Angeles County Fire Department, etc. All contaminated soils and/or material encountered shall be disposed of at a regulated site and in accordance with applicable laws and regulations prior to the completion of grading. Each Phase I ESA conducted for projects that involve demolition activities shall include an inspection for lead-based paint conducted by a licensed or certified lead inspector/assessor and a survey for asbestos-containing materials conducted by a California Certified Asbestos Consultant. Prior to the issuance of building permits, a report documenting the completion, results, and follow-up remediation on the recommendations, if any, shall be provided to the Los Angeles County Department of Regional Planning evidencing that all site remediation activities have been completed.	Less Than Significant

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.6-4: One heliport is in the Specific Plan area in the Harbor-UCLA Medical Center campus.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.6-5: Project development could affect the implementation of an emergency responder or evacuation plan.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.7 HYDROLOGY AND WATER QUALITY			
Impact 5.7-1: Development pursuant to the proposed project would be subject to the County's Low Impact Development (LID) Ordinance and would therefore minimize or reduce surface water flows into drainage systems in the watershed.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.7-2: Development pursuant to the proposed project is not expected to substantially increase the amount of impervious surfaces on the site and therefore would not substantially reduce groundwater recharge.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.7-3: Construction and operation of projects in accordance with the Specific Plan would not adversely impact water quality and contribute pollutant sources to the stormwater drainage system.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.8 LAND USE AND PLANNING			
Impact 5.8-1: The West Carson TOD Specific Plan would not conflict with any applicable land use plans.	Less Than Significant	No mitigation measures are required.	Less Than Significant

1. Executive Summary

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
5.9 NOISE				
Impact 5.9-1: Construction activities would result in temporary noise increases in the vicinity of the proposed project.	Potentially Significant	N-1	As required by the Los Angeles County Code Section 12.08.430, construction activities are prohibited between the hours of 7 PM and 7 AM on weekdays and Saturdays, or at any time on Sundays or holidays. Construction is also required to comply with the maximum noise levels from mobile equipment specified in Section 12.08.430 (also shown in Table 5.9-6 and Table 5.9-7 of this analysis).	Significant and Unavoidable
		N-2	Prior to the issuance of demolition, grading and/or construction permits, applicants for individual development projects within 500 feet of noise-sensitive receptors (e.g., residences, hospitals, schools) shall conduct a project-level construction noise analysis to evaluate potential impacts on sensitive receptors. The analysis shall be conducted once the final construction equipment list that will be used for demolition and grading activities is determined. The project-level noise analysis shall be prepared, reviewed, and approved by the County of Los Angeles, City of Los Angeles, and/or City of Carson, as applicable. If the analysis determines that demolition and construction activities would result in an impact to identified noise-sensitive receptors, then specific measures to attenuate the noise impact shall be outlined in the analysis and reviewed and approved by the County. Specific measures may include, but are not limited to, the following best management practices: ■ Post a construction site notice near the construction site access point or in an area that is clearly visible to the public. The notice shall include the following: job site address; permit number, name, and phone number of the contractor and owner; dates and duration of construction activities; construction hours allowed; and the County of Los Angeles and construction contractor phone numbers where noise complaints can be reported and logged.	

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		■ Consider the installation of temporary sound barriers for construction activities immediately adjacent to occupied noise-sensitive structures. ■ Restrict haul routes and construction-related traffic to the least noise-sensitive times of the day. ■ Reduce nonessential idling of construction equipment to no more than five minutes. ■ Ensure that all construction equipment is monitored and properly maintained in accordance with the manufacturer's recommendations to minimize noise. ■ Fit all construction equipment with properly-operating mufflers, air intake silencers, and engine shrouds, no less effective than as originally equipped by the manufacturer, to minimize noise emissions. ■ If construction equipment is equipped with back-up alarm shut offs, switch off back-up alarms and replace with human spotters, as feasible. ■ Stationary equipment (such as generators and air compressors) and equipment maintenance and staging areas shall be located as far from existing noise-sensitive land uses, as feasible. ■ To the extent feasible, use acoustic enclosures, shields, or shrouds for stationary equipment such as compressors and pumps. ■ Shut off generators when they are not needed. ■ Coordinate deliveries to reduce the potential of trucks waiting to unload and idling for long periods of time. ■ Grade surface irregularities on construction sites to prevent potholes	

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
			from causing vehicular noise. ■ Minimize the use of impact devices such as jackhammers, pavement breakers, and hoe rams. Where possible, use concrete crushers or pavement saws rather than hoe rams for tasks such as concrete or asphalt demolition and removal. The final noise-reduction measures to be implemented shall be determined by the construction-level noise analysis. The final noise-reduction measures shall be included on all construction and building documents and/or construction management plans and submitted for verification to the County of Los Angeles; implemented by the construction contractor through the duration of the construction phase; and discussed at the predemolition, pregrade, and/or preconstruction meetings.	
Impact 5.9-2: Project implementation would result in long-term operation-related noise that would not exceed local standards.	Less Than Significant	No mitigation measures are required.		Less Than Significant
Impact 5.9-3: The project would create short-term and long-term groundborne vibration and groundborne noise.	Potentially Significant	N-3	Prior to issuance of grading and construction permits, applicants for individual development projects that involve vibration-intensive construction activities—such as pile drivers, jack hammers, and vibratory rollers—within 100 feet of off-site, vibration-sensitive receptors and/or structures,1 shall prepare and submit to the County of Los Angeles an acoustical study to evaluate potential construction-related vibration damage impacts. The vibration assessment shall be prepared by a qualified acoustical engineer and be based on the Federal Transit Administration (FTA) vibration-induced architectural damage criterion AND vibration annoyance effects. If the acoustical study determines a potential exceedance of the FTA thresholds, measures shall be identified that	Less Than Significant

[1] Vibration-sensitive receptors would include, for example, residences, schools, medical facilities, and houses of worship. Vibration-sensitive structures would include, for example, historical buildings, audio/video recording studios,

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			ensure vibration levels are reduced to below the thresholds. Measures to reduce vibration levels can include use of less-vibration-intensive equipment (e.g., drilled piles and static rollers) and/or construction techniques (e.g., nonexplosive rock blasting and use of hand tools) and preparation of a preconstruction survey report to assess the preconstruction, existing conditions of the potentially affected sensitive receptor or structure. Identified measures shall be included on all construction and building documents and submitted for verification to the County.	
5.10 POPULATION AND HOUSING				
Impact 5.10-1: The proposed project would directly result in population growth in the project area.	Less Than Significant	No mitigation measures are required.		Less Than Significant
5.11 PUBLIC SERVICES				
FIRE PROTECTION AND EMERGENCY SERVICES				
Impact 5.11-1: The proposed project would introduce approximately 2,271 additional homes, 5,961 additional residents, and 1.7 million additional square feet of nonresidential uses into the Los Angeles County Fire Department's service boundaries, thereby increasing the requirement for fire protection facilities and personnel.	Potentially Significant	PS-1	On-going throughout implementation of the Specific Plan, the County shall coordinate with LACoFD to ensure that LACoFD facilities are adequate to maintain satisfactory response times within the Specific Plan area.	Less Than Significant
		PS-2	Each subdivision map shall comply with the applicable County Fire Code requirements for fire apparatus access roads, fire flows, and fire hydrants. Final fire flows shall be determined by LACoFD in accordance with Appendix B of the County Fire Code. The required fire apparatus road and water requirements shall be in place prior to construction.	

1. Executive Summary

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
POLICE PROTECTION			
Impact 5.11-2: The proposed project would introduce approximately 2,270 additional homes, 5,961 additional residents, and 1.7 million additional square feet of nonresidential uses into the Los Angeles County Sheriff Department's service boundaries, thereby increasing the requirement for police protection facilities and personnel.	Less Than Significant	No mitigation measures are required.	Less Than Significant
SCHOOL SERVICES			
Impact 5.11-3: The proposed project would generate new students who would impact the school enrollment capacities of area schools.	Less Than Significant	No mitigation measures are required.	Less Than Significant
LIBRARY SERVICES			
Impact 5.11-4: The proposed project would introduce up to 5,961 additional residents in West Carson and would increase demand on local libraries.	Less Than Significant	No mitigation measures are required.	Less Than Significant
5.12 RECREATION			
Impact 5.12-1: The proposed project would generate additional residents that would increase the use of existing park and recreational facilities.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.12-2: Project implementation would result in environmental impacts to provide new and/or expanded recreational facilities.	Less Than Significant	No mitigation measures are required.	Less Than Significant

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
5.13 TRANSPORTATION/TRAFFIC				
Impact 5.13-1: Project would not result in a significant increase in Intersection and Roadway Level of Service.	Potentially Significant	T-1	Prior to issuance of building permits for any project forecast to generate 100 or more peak hour trips, the property owner/developer shall submit to the County a traffic study to identify when the improvements identified in the West Carson Transit Oriented District Specific Plan EIR Traffic Impact Study, IBI Group, June 2017 (Appendix J of this DEIR) shall be designed and constructed. Each traffic study shall comply with the traffic study guidelines from the affected agencies in effect at that time. a. The traffic study will specify the timing, funding, construction and fair-share responsibilities for all traffic improvements necessary to maintain satisfactory levels of service within the specific plan area and surrounding jurisdictions, as defined by the County's General Plan, based on thresholds of significance, performance standards and methodologies utilized in this DEIR, Metro's CMP Program and established in the adopted traffic impact analysis guidelines for the affected agencies. b. Prior to issuance of occupancy permit, the property owner/developer shall construct, bond for or enter into a funding agreement for necessary circulation system improvements, as determined by the affected agency. At minimum, fair-share calculations shall include intersection improvements, rights-of-way, and construction costs, unless alternative funding sources have been identified to help pay for the improvement.	Significant and Unavoidable
Impact 5.13-2: Project would result in a significant increase in freeway mainline level of service.	Potentially Significant	T-2	The County of Los Angeles shall continue to secure the funding needed to implement the future planned improvements within the specific plan area. A variety of funding sources shall be explored, such as Metro's CMP Fee Program, Metro Call for Project funds, and federal and state grant opportunities. If the CMP fee program is not adopted by Metro and the County	Significant and Unavoidable

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		of Los Angeles, other funding sources for regional transportation needs in the specific plan area, including Caltrans facilities, shall be pursued such as a potential West Carson Development Impact Fee Program, development agreements for large projects, and/or mitigation agreements between future applicants and Caltrans for projects that impact Caltrans facilities.	
		T-3 The County shall work with Caltrans as they prepare plans to add additional lanes or complete other improvements to various freeways within and adjacent to unincorporated areas. This includes adding or extending mixed flow general purpose lanes, adding or extending existing HOV lanes, adding Express Lanes (high occupancy toll lanes), incorporating truck climbing lanes, improving interchanges and other freeway related improvements.	
		T-4 The County shall require traffic engineering firms retained to prepare traffic impact studies for future development projects to consult with Caltrans, when a development proposal meets the requirements of statewide, regional, or areawide significance per CEQA Guidelines §15206(b). When preparing traffic impact studies, the most up to date Guide for the Preparation of Traffic Impact Studies from Caltrans shall be followed. Proposed developments meeting the criteria of statewide, regional or areawide include: ■ Proposed residential developments of more than 500 dwelling units ■ Proposed shopping centers or business establishments employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space. ■ Proposed commercial office buildings employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space ■ Proposed hotel/motel developments of more than 500 rooms	

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		When the CEQA criteria of regional significance are not met, Caltrans recommends that Project Applicants consult with Caltrans when a proposed development includes the following characteristics: ■ All proposed developments that have the potential to cause a significant impact to state facilities (right-of-way, intersections, interchanges, etc.) and when required mitigation improvements are proposed in the initial study. Mitigation concurrence should be obtained from Caltrans as early as possible. ■ Any development that assigns 50 or more trips (passenger car equivalent trips) during peak hours to a state highway/freeway. ■ Any development that assigns 10 or more trips (passenger car equivalent trips) during peak hours to an off-ramp. On/off-ramps that are very close to each other in which the project trips may cause congestion on the left-turn lane storage to the on-ramp. ■ Any development located adjacent to or within 100 feet of a state highway facility and may require a Caltrans Encroachment Permit. (Exceptions: additions to single family homes or 10 residential units or less). ■ When the County cannot determine whether or not Caltrans will expect a traffic impact analysis pursuant to CEQA.	
Impact 5.13-3: Project-related trip generation in combination with existing and proposed cumulative development would exceed the capacity at freeway off-ramps.	Potentially Significant	Mitigation Measures T-2 through T-4 would also reduce the proposed project's impacts to freeway off-ramps to the extent feasible.	Significant and Unavoidable

1. Executive Summary

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
Impact 5.13-4: Project-related trip generation in combination with existing and proposed cumulative development would result in designated road and/or highways exceeding county congestion management agency service standards.	Less Than Significant	No mitigation measures are required.		Less Than Significant
Impact 5.13-5: The project would increase total VMT, but would result in a decrease in VMT per capita.	Less Than Significant	No mitigation measures are required.		Less Than Significant
Impact 5.13-6: The project would not affect air travel or result in substantial safety risks.	Less Than Significant	No mitigation measures are required.		Less Than Significant
5.14 TRIBAL CULTURAL RESOURCES				
Impact 5.14-1: The proposed project may cause a substantial adverse change in the significance of a tribal cultural resource.	Potentially Significant	TCR-1	If human remains are encountered, the County or its contractor shall halt work in the vicinity (within 100 feet) of the find and contact the Los Angeles County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98. The NAHC will designate an MLD for the remains per PRC Section 5097.98. Until the landowner has conferred with the MLD, County shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.	Less Than Significant

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation		Mitigation Measures	Level of Significance After Mitigation
5.15 UTILITIES AND SERVICE SYSTEMS				
Impact 5.15-1: Project-generated wastewater would be adequately treated by the Sanitation Districts of Los Angeles County's Joint Water Pollution Control Plant, but may require infrastructure improvements.	Potentially Significant	USS-1	Prior to the issuance of grading permits for individual development projects in the West Carson TOD Specific Plan area, the Los Angeles County Department of Public Works shall review the recommended sewer line replacement and upsizing improvements outlined in the "West Carson TOD Sewer Area Study" prepared by IBI Group, Inc. (dated February 2, 2018) and determine whether sewer improvements would be required as part of the proposed projects. To assist in the determination, the Department of Public Works may require the project applicant/developer to submit a site-specific sewer flow monitoring study to provide a more detailed analysis of the true sewer flow depths over time and to determine if the potential for surcharge conditions would occur due to project development. The sewer flow monitoring study shall be submitted to the Department of Public Works for review and approval.	Less Than Significant
Impact 5.15-2: Water supply and delivery systems are adequate to meet project requirements.	Potentially Significant	USS-2	Prior to the issuance of grading permits for individual development projects in the West Carson TOD Specific Plan area that would be served by the trunk line south of 220th Street, the Los Angeles County Department of Public Works shall review the recommended water conveyance system improvements outlined in the "West Carson Water Area Study" prepared by IBI Group, Inc. (dated August 13, 2017) and determine whether recommended improvements would be required as part of the proposed projects. To assist in the determination, the Department of Public Works may require the project applicant/developer to submit a site-specific water flow monitoring study to provide a more detailed analysis of the true water flow depths over time to determine if the potential surcharge conditions would occur due to project development. The water flow monitoring study shall be submitted to the Department of Public Works for review and approval.	Less Than Significant

1. Executive Summary

Table 1-3 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.15-3: Existing storm drainage systems in the Specific Plan area are adequate to serve the drainage requirements of the proposed project.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.15-4: Existing solid waste facilities would be able to accommodate project-generated solid waste and comply with related solid waste regulations.	Less Than Significant	No mitigation measures are required.	Less Than Significant
Impact 5.15-5: Southern California Edison and the Southern California Gas Company could supply project electricity and natural gas demands, respectively, from their forecast energy supplies, and Specific Plan energy demands would not require either provider to obtain new or expanded energy supplies.	Less Than Significant	No mitigation measures are required.	Less Than Significant

2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) requires that all state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. This Draft Environmental Impact Report (DEIR) has been prepared to satisfy CEQA and the CEQA Guidelines. An Environmental Impact Report (EIR) is the public document designed to provide decision makers and the public with an analysis of the environmental effects of the proposed project, to indicate possible ways to reduce or avoid environmental damage, and to identify alternatives to the project. The EIR must also disclose significant environmental impacts that cannot be avoided; growth inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present, and reasonably foreseeable future projects.

The lead agency means "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment" (CEQA Guidelines § 21067). The County of Los Angeles has the principal responsibility for approval of the West Carson Transit Oriented District (TOD) Specific Plan project and therefore is the CEQA lead agency for this project.

The intent of the DEIR is to provide sufficient information on the potential environmental impacts of the proposed West Carson TOD Specific Plan to allow the County of Los Angeles to make an informed decision regarding approval of the project. Specific discretionary actions to be reviewed by the County are described in Section 3.6, *Intended Uses of the EIR*.

This DEIR has been prepared in accordance with requirements of the:

- California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code §§ 21000 et seq.)
- State Guidelines for the Implementation of the CEQA of 1970 (CEQA Guidelines), as amended (California Code of Regulations, §§ 15000 et seq.)

The overall purpose of this DEIR is to inform the lead agency, responsible agencies, decision makers, and the general public about the environmental effects of the development and operation of the proposed West Carson TOD Specific Plan project. This DEIR addresses effects that may be significant and adverse, evaluates alternatives to the project, and identifies mitigation measures to reduce or avoid adverse effects.

2.2 NOTICE OF PREPARATION AND INITIAL STUDY

The County of Los Angeles determined that an EIR would be required for this project and issued a Notice of Preparation (NOP) and Initial Study on January 5, 2017 (see Appendix A). A scoping meeting was held on February 1, 2017, at the Harbor-UCLA Medical Center to elicit comments on the scope of the DEIR. Table 2-1 summarizes the comments received during the scoping meeting; if a comment involves an environmental topic of concern under CEQA, the table identifies the section(s) of this DEIR where the issue is addressed.

Table 2-1 Scoping Meeting Comments Summary

Summary of Comments and Questions	Response/Issue Addressed In:
Commenter questioned whether the EIR would address environmental issues in the neighborhoods or only along Carson Street and Vermont Avenue.	The Specific Plan mainly proposes changes along the major roadways—no changes are proposed to the existing single-family residential areas. However, the EIR will analyze any potential impacts to the neighborhoods as a result of the proposed project. These are analyzed throughout Chapter 5, *Environmental Analysis*.
Commenter questioned what would happen to the existing mobile home parks	The Specific Plan does propose land use changes to the mobile homes sites but does not include any specific development projects. The mobile home properties may be redeveloped over time, but no specific development is proposed at this time as part of the West Carson TOD Specific Plan.
There is concern regarding availability of parking due to hospital employee spillover into surrounding neighborhoods.	There will be many changes and improvements to the current parking situation as part of the Harbor-UCLA Medical Center Master Plan expansion and short-term efforts. However, parking is not considered an environmental topic of concern under CEQA and will not be analyzed in the DEIR.
The EIR should analyze pedestrian safety for schools in the Specific Plan area. Designated parking and drop-off/pick-up locations need to be provided for safety.	The Specific Plan considers ways to improve pedestrian and bicycle connections and safety as part of making safer routes to school, but onsite school parking and drop-off/pick-up locations are not a part of the proposed project. Nevertheless, as a specific plan for a transit-oriented district, the project proposes improvements to the street network, including striped (Class II) bicycle lanes and wider sidewalks on several arterial roadways onsite to improve pedestrian and bicyclist safety.
Traffic along Budlong Avenue is congested and should be analyzed in the EIR.	Traffic impacts of the proposed project are analyzed in Section 5.13, *Transportation and Traffic*.
Crosswalks need flashing lights.	This is not an environmental concern related to CEQA. No further analysis is required.
Concern was expressed that parking will be severely impacted by any new apartments built as part of the Specific Plan.	Parking is not considered an environmental topic of concern under CEQA and will not be analyzed in the DEIR.
Commenter asked whether the project would include traffic-calming improvements, especially along Carson Street and Vermont Avenue.	The Specific Plan proposes streetscape improvements along Carson Street, Vermont Avenue, and other major roadways. Some of those improvements are aimed to improve safety and may potentially slow traffic.
Commenter suggested that the Specific Plan and EIR should address preventing cut-through traffic through residential neighborhoods.	This is not considered an environmental topic of concern under CEQA. However, traffic impacts of the proposed project, including impacts on major roadways and intersections, are analyzed in Section 5.13, *Transportation and Traffic*.
Due to signalization, there is a major traffic queueing issue on Vermont Avenue near 213th Street and Javelin Street.	Section 5.13, *Transportation and Traffic*, identifies level of service deficiencies in existing roadways and intersections and evaluates whether the project would exacerbate or cause new potentially significant traffic impacts.

Table 2-1 Scoping Meeting Comments Summary

Summary of Comments and Questions	Response/Issue Addressed In:
Concern was expressed regarding the increase in population within the Specific Plan area as a result of the proposed project.	Section 5.10, *Population and Housing*, evaluates the project's impact on population based on regional population forecasts.
Safety concerns were expressed regarding poor sidewalk conditions.	The Specific Plan proposes a number of sidewalk improvements to create a more pedestrian-friendly environment. Refer to the Specific Plan for additional details regarding proposed pedestrian improvements (see Appendix C).
Many questions were asked regarding the Harbor-UCLA Medical Center Master Plan related to parking improvements, public safety, proposed expansions, etc.	Azar Kattan, Chief Operating Officer, Harbor-UCLA Medical Center, gave significant detail on parking improvements proposed as part of the Harbor-UCLA Medical Center Master Plan; current efforts to improve the impact of employee parking; efforts to improve the homeless situation and overall safety around the hospital; and proposed biotech expansion and types of research. These questions were unrelated to the West Carson TOD Specific Plan and are not further addressed in the DEIR.
Commenter asked whether a dog park would be built as part of the Harbor-UCLA Medical Center Master Plan.	A dog park may be considered at one of the potential park opportunity sites identified in the West Carson TOD Specific Plan and located on Carson Street across from the hospital entrance. This is not an environmental topic of concern and is not addressed in the DEIR.

In addition to the scoping meeting, the public was provided with a 30-day public review period to comment on the Initial Study and NOP—from January 17, 2017, to February 17, 2017. Table 2-2 compiles the comments received from commenting agencies/persons during the NOP process and identifies the section(s) of this DEIR where the issues are addressed. All NOP comments received during the public review period are in Appendix B.

Table 2-2 NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Issue Addressed In:
Agencies			
California Public Utilities Commission, Rail Crossings and Engineering Branch Ken Chiang, P.E. Utilities Engineer	1/9/2017	• Specific Plan area includes active railroad tracks regulated by the Commission's Rail Crossings and Engineering Branch (RCEB). • RCEB recommends the County add language to the Specific Plan so that any future development adjacent to or near the rail right-of-way (ROW) is planned with the safety of the rail corridor in mind. • The project should consider pedestrian circulation patterns or destinations with respect to railroad ROW and compliance with the Americans with Disabilities Act. • Mitigation measures to consider include planning for grade separations for major thoroughfares, improving existing at-grade crossings, and vandal-resistant fencing or other barriers to prevent trespassers on the railroad ROW.	• Section 5.13, *Transportation and Traffic*
Native American Heritage Commission Gayle Totton, MA, PhD, Associate Governmental Program Analyst	1/10/2017	• Summarizes Senate Bill 18 and Assembly Bill 52 requirements applicable to the proposed project.	• Section 5.3, *Cultural Resources* • Section 5.14, *Tribal Cultural Resources*

2. Introduction

Table 2-2 NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Issue Addressed In:
South Coast Air Quality Management District Jillian Wong, PhD Planning and Rules Manager	1/20/2017	• Requests a copy of the Draft EIR and all appendices or technical documents related to air quality and greenhouse gas analyses upon completion. • Provides links and recommendations on CalEEMod software analysis for up-to-date methodology. • States that the EIR should identify all potentially adverse air quality impacts from all phases of the project (i.e., construction and operations) and all air pollutant sources related to the project. • Air quality impacts from indirect sources (e.g., generated or attracted vehicular traffic) should also be analyzed. • Recommends quantifying criteria pollutant emissions and comparing the results to the regional significance thresholds. • Recommends calculating localized air quality impacts and comparing the results to localized significance thresholds. • Recommends performing a mobile source health risk assessment if the project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles. • Provides guidance on siting incompatible land uses and resources to identify all possible mitigation measures for air quality impacts. • Notes that a permit may be required should the proposed project include equipment that generates or controls air contaminants. • Recommends a health risk assessment be conducted to determine whether future sensitive receptors would be exposed to adverse health impacts from carcinogenic emissions (i.e., SCAQMD permitted sources or warehouse sites). • Consider the limitations of enhanced filtration (i.e., MERV filters for HVAC units) when used as mitigation for sensitive receptors near freeways and high volume urban roads.	• Section 5.2, *Air Quality* • Section 5.5, *Greenhouse Gas Emissions*
Los Angeles County Fire Department (LACoFD) Frank Vidales, Chief Forestry Division Prevention Services Bureau	2/1/2017	• The proposed project would create a significant impact on existing LACoFD resources already burdened by incremental growth. An additional fire station is needed in the west side of the City of Carson. • Provides list of regulatory requirements applicable to the proposed project, including codes and ordinances for construction, access, water mains, fire flows, and fire hydrants. • The Health Hazardous Materials Division of the LACoFD observed several environmentally impacted sites within the project area currently under the jurisdiction of the Department of Toxic Substance Control and the Los Angeles Regional	• Section 5.6, *Hazards and Hazardous Materials* • Section 5.11, *Public Services*

Table 2-2 NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Issue Addressed In:
		Water Quality Control Board, which would be involved in the assessment/cleanup of the sites during project development.	
Sanitation Districts of Los Angeles County (LACSD) Adriana Raza, Customer Services Specialist Facilities Planning Division	2/9/2017	• Notes the proposed project is within the jurisdictional boundary of LACSD District No. 8. • Presently, no deficiencies exist in the Districts' facilities that serve the proposed project. • LACSD should review individual developments in accordance with the proposed project to determine whether sufficient trunk sewer capacity exists to serve each project. • Wastewater generated by the project would be treated at the Joint Water Pollution Control Plant in the City of Carson, which has a capacity of 400 million gallons per day (mgd) and currently processes an average flow of 254.1 mgd. • Expected increase in average wastewater flow from buildout of up to 3,575 residential units and 4.6 million square feet of nonresidential use is approximately 2,192,125 gallons per day. • Requests a copy of the proposed project's buildout schedule to ensure the project is considered when planning future sewerage system relief and replacements projects. • LACSD charges a connection fee to construct incremental expansions of the existing sewer system. • LACSD's wastewater treatment facilities' capacities are based on regional growth forecasts adopted by SCAG.	• Section 5.15, *Utilities and Service Systems*
California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, District 1 Grace P. Brandt, Associate Oil and Gas Engineer	2/13/17	• The Specific Plan area is not within an administrative oil and gas field boundary. Division records indicate there are no known oil, gas, or geothermal wells within the project boundary. • The possibility for future problems from oil and gas wells that have been plugged or abandoned are remote. • Provides an informational packet for construction site plan review related to known wells.	Not Applicable
California Department of Transportation (Caltrans), District 7 Dianna Watson, IGR/CEQA Branch Chief	2/15/17	• Caltrans agrees that a formal scoping meeting to discuss preparation of the traffic analysis, potential traffic impacts, and proposed mitigation on state facilities is necessary. • Senate Bill (SB) 743 requires review of transportation impacts by using vehicle miles traveled, but County may use level of service (LOS) methodology until SB 743 guidelines are formally adopted. • With limited room to expand vehicular capacity, the proposed project should incorporate multimodal and complete streets elements to promote alternatives to vehicular travel and better manage parking assets.	• Section 5.13, *Transportation and Traffic* • Traffic Impact Analysis (see Appendix I)

2. Introduction

Table 2-2 NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Issue Addressed In:
		• Caltrans is concerned that project-generated traffic and cumulative traffic will adversely impact main-line freeway and off-ramp capacities. • Provides list of freeway on-ramps and off-ramps to be analyzed in the traffic study. • On- and off-ramp queuing analysis should be conducted, and mitigation should be provided as needed. • Project travel modeling should be consistent with other regional and local modeling forecasts and travel data. • Trip generation rates should be based on the ITE manual. • Traffic study should analyze average daily trips and AM and PM peak hour volumes for existing and future conditions with and without the project. • Traffic analysis should include existing traffic, project- generated traffic, cumulative traffic from other developments in the area, and general traffic growth. • A discussion of mitigation measures appropriate to relieve anticipated traffic impacts should be included. All mitigation involving transportation demand management should be justified. • Fair-share contribution toward preestablished or future improvements on state facilities is considered acceptable mitigation. • Caltrans encourages the County to work with neighboring cities (i.e., cities of Los Angeles, Carson, Torrance) to resolve cumulative traffic impacts on state facilities (i.e., Interstates 405 and 110 and State Routes 1 and 213).	
Los Angeles County Metropolitan Transportation Authority (Metro) Elizabeth Carvajal, Sr. Manager Transportation Planning	2/16/17	• Metro bus lines 205 and 550 operate in the Specific Plan area. Metro recommends that the Specific Plan include language of Metro's notification procedures and considerations for projects in close proximity to a Metro facility that may impact Metro bus operations. • Metro should be contacted at least 30 days in advance of initiating any construction activities that may impact a bus stop zone or service. Other municipal bus operators may be impacted and should be included in construction outreach efforts. • The Specific Plan should include language that clearly states that efforts to relocate the Carson station will require close coordination with Metro. Since the station and right-of-way are not owned by Metro, Caltrans should also be notified and included in future relocation discussions. • Metro supports policies encouraging transit-supportive public realm improvements.	• Section 5.13, *Transportation and Traffic* • West Carson TOD Specific Plan (see Appendix C)

Table 2-2 NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Issue Addressed In:
		• Metro recommends the Specific Plan incorporate language that promotes bicycle use through adequate short-term bicycle parking (e.g., bicycle racks, curbside bicycle corrals, long-term bicycle parking). • The Specific Plan should address first/last mile connections by encouraging development that is transit accessible and with bicycle and pedestrian-oriented street design connecting stations with housing and employment concentrations.	
County of Los Angeles Public Health Department Michelle Tsiebos, REHS, DPA, MPA Environmental Health Division	2/17/17	• The Department of Public Health has no comments on the Initial Study and NOP at this time.	Not Applicable
Southern California Association of Governments (SCAG) Ping Chang, Acting Manager Compliance and Performance Monitoring	2/17/17	• SCAG requests a copy of the DEIR when available. • States SCAG's 2016 Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) goals. • Provides SCAG's 2016 RTP/SCS strategies, demographics, and growth forecasts for both the region and County of Los Angeles. • Notes SCAG's list of performance-standards-based mitigation measures that may be considered for adoption.	• Section 5.8, *Land Use and Planning* • Section 5.11, *Population and Housing*
Individuals			
Thomas Winfrey	2/16/17	• Project-generated traffic and parking impacts should be analyzed in the EIR and presented to the public. • There is heavy traffic congestion during morning and evening rush hours that spill over into the residential neighborhoods, particularly from Carson Street. • Drivers speed through the residential areas that have posted speed limits of 25 miles per hour. Concern about children's safety near Javelin Elementary School and senior citizens' safety for those exercising in the morning/evenings on residential streets.	• Section 5.13, *Transportation and Traffic*

All comments are listed in the order they were received.

The NOP process helps determine the scope of the environmental issues to be addressed in the DEIR. Based on this process and the Initial Study for the project, certain environmental categories were identified as having the potential to result in significant impacts. Issues considered Potentially Significant are addressed in

this DEIR, but issues identified as Less Than Significant or No Impact are not. Refer to the Initial Study in Appendix A for discussion of how these initial determinations were made.

2.3 SCOPE OF THIS DEIR

The scope of the DEIR was determined based on the County's Initial Study, comments received in response to the NOP, and comments received at the scoping meeting conducted by the County. Pursuant to Sections 15126.2 and 15126.4 of the CEQA Guidelines, the DEIR should identify any potentially significant adverse impacts and recommend mitigation that would reduce or eliminate these impacts to levels of insignificance.

The information in Chapter 3, *Project Description*, establishes the basis for analyzing future, project-related environmental impacts. However, further environmental review by the County may be required as more detailed information and plans are submitted on a project-by-project basis.

2.3.1 Impacts Considered Less Than Significant

During preparation of the Initial Study, the County of Los Angeles determined that four environmental impact categories were not significantly affected by or did not affect the proposed West Carson TOD Specific Plan project. These categories are not discussed in detail in this DEIR.

- Agriculture and Forestry Resources
- Biological Resources
- Mineral Resources
- Energy

2.3.2 Potentially Significant Adverse Impacts

The County of Los Angeles determined that the following 15 environmental factors have potentially significant impacts if the proposed project is implemented.

- Aesthetics
- Air Quality
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services

- Recreation
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems

2.3.3 Unavoidable Significant Adverse Impacts

This DEIR identifies four environmental topical sections with significant and unavoidable adverse impacts, as defined by CEQA, that would result from implementation of the proposed project. Unavoidable adverse impacts may be considered significant on a project-specific basis, cumulatively significant, and/or potentially significant. The County must prepare a "statement of overriding considerations" before it can approve the project, attesting that the decision-making body has balanced the benefits of the proposed project against its unavoidable significant environmental effects and has determined that the benefits outweigh the adverse effects, and therefore the adverse effects are considered acceptable. The impacts that were found in the DEIR to be significant and unavoidable are:

- Air Quality
- Greenhouse Gas Emissions
- Noise
- Transportation and Traffic

2.4 INCORPORATION BY REFERENCE

Some documents are incorporated by reference into this DEIR, consistent with Section 15150 of the CEQA Guidelines, and they are available for review at the County of Los Angeles Department of Regional Planning, 320 W. Temple Street, Los Angeles, CA 90012.

- **Los Angeles County General Plan (2035):** The 2035 General Plan serves as the major blueprint for directing growth in Los Angeles County and regulates the existing land uses on the proposed project site. The General Plan divides the County into several planning areas, and the community of West Carson is in the South Bay Planning Area. The General Plan analyzes existing conditions in the South Bay Planning Area, including physical, social, cultural, and environmental resources and opportunities. The General Plan also looks at trends, issues, and concerns that affect the region; includes County goals and objectives; and provides policies to guide development and change.

- **County of Los Angeles Code of Ordinances:** The Los Angeles County Code of Ordinances is a set of laws governing the County of Los Angeles and covering all aspects of County regulations, including zoning, permitted uses and standards, and various development requirements. Zoning district standards are also included in the code. Where applicable, code sections are referenced throughout the DEIR.

In each instance where a document is incorporated by reference for purposes of this report, the DEIR shall briefly summarize the incorporated document or the incorporated data if the document cannot be summarized. Chapter 13, *Bibliography*, provides a complete list of references used in preparing this DEIR.

2.5 FINAL EIR CERTIFICATION

This DEIR is being circulated for public review for 45 days. Interested agencies and members of the public are invited to provide written comments on the DEIR to the County address shown on the title page of this document. Upon completion of the 45-day review period, the County of Los Angeles will review all written comments received and prepare written responses for each. A Final EIR (FEIR) will incorporate the received comments, responses to the comments, and any changes to the DEIR that result from comments. The FEIR will be presented to the County of Los Angeles for potential certification as the environmental document for the project. All persons who comment on the DEIR will be notified of the availability of the FEIR and the date of the public hearing before the County.

The DEIR is available to the general public for review at the following locations:

- County of Los Angeles Department of Regional Planning. 320 W. Temple Street, Los Angeles, CA 90012
- Carson Library. 151 E. Carson Street, Carson, CA 90745
- County of Los Angeles Department of Regional Planning website. http://planning.lacounty.gov/westcarson

2.6 MITIGATION MONITORING

Public Resources Code, Section 21081.6, requires that an agency adopt a monitoring or reporting program for any project for which it has made findings pursuant to Public Resources Code 21081 or adopted a Negative Declaration pursuant to 21080(c). Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR or Negative Declaration.

The Mitigation Monitoring Program for the West Carson TOD Specific Plan will be completed in conjunction with the Final EIR, prior to consideration of the project by the County of Los Angeles Board of Supervisors.

3. Project Description

3.1 PROJECT LOCATION

3.1.1 Regional Location

The proposed project is in the Community of West Carson in unincorporated Los Angeles County. West Carson encompasses about 2.3 square miles between the cities of Torrance to the north, Harbor City (a neighborhood in the City of Los Angeles) to the south, Carson to the east, and Los Angeles and Torrance to the west (see Figure 3-1, *Regional Location*). West Carson is in the southwest part of the Los Angeles Basin, a coastal plain extending from the Pacific Ocean on the south to the Santa Monica Mountains and Puente Hills on the north. Most of West Carson slopes slightly down toward the east; elevations range from about 68 feet above mean sea level on the community's southwestern boundary to about 30 feet above mean sea level on the eastern boundary.

3.1.2 Project Site

The West Carson TOD Specific Plan covers approximately 319.3 acres and is bounded generally by Normandie Avenue on the west, the 208th Street Drain and West Torrance Boulevard to the north, Interstate 110 (I-110; Harbor Freeway) on the east, and 223rd Street on the south. Major arterial roadways in and alongside the project site are Normandie Avenue and Vermont Avenue (north-south) and Torrance Boulevard, Carson Street, and 223rd Street (east-west) (see Figure 3-2, *Local Vicinity*).

The project site encompasses land within a half-mile radius and to the west of the Carson Metro Station, a bus rapid transit stop along a designated bus lane adjacent to I-110. A large portion of the project area contains the Harbor-UCLA Medical Center campus, which includes the Los Angeles Biomedical Research Institute (LA BioMed); the campus is major employment center that draws people from across the entire Los Angeles region. The project area is also just south of the Harbor Gateway Transit Center, a regional transit hub that connects the South Bay area to Downtown Los Angeles and other locations throughout the county.

Regional access to the project site is from I-110 via ramps at Torrance Boulevard and Carson Street. The Carson Metro Station for the Metro Silver Line is on I-110 below the Carson Street overpass and provides bus rapid transit service from San Pedro to El Monte via downtown Los Angeles.

3.2 STATEMENT OF OBJECTIVES

The following goals for the West Carson Transit Oriented District Specific Plan were developed based on input from the community members, stakeholders, County Task Force, and County staff. The project goals will aid decision makers in their review of the project and associated environmental impacts.

1. Adopt a specific plan for the project site consistent with the goals and policies of the County of Los Angeles 2035 General Plan.
2. Provide additional housing opportunities near transit consistent with the County's adopted Housing Element.
3. Create a distinct identity in the West Carson community.
4. Improve connections within the community and increase access to transit.
5. Ensure the health and safety of residents, visitors, and employees.
6. Ensure economic vitality of the project area.
7. Encourage a diverse mix of land use and transit oriented development.
8. Improve the quality of life for existing residents with improvements to the public realm.
9. Maximize the use of sustainable development practices.

3.3 PROJECT CHARACTERISTICS

"Project," as defined by the CEQA Guidelines, means "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1)…enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100-65700" (14 Cal. Code of Reg. § 15378[a]).

3.3.1 Description of the Project

The West Carson TOD Specific Plan was prepared to guide future transit-oriented development throughout the project area in order to create a distinct identity; improve connections and access for all users; and improve the safety, economic vitality, and overall quality of life for the West Carson community.

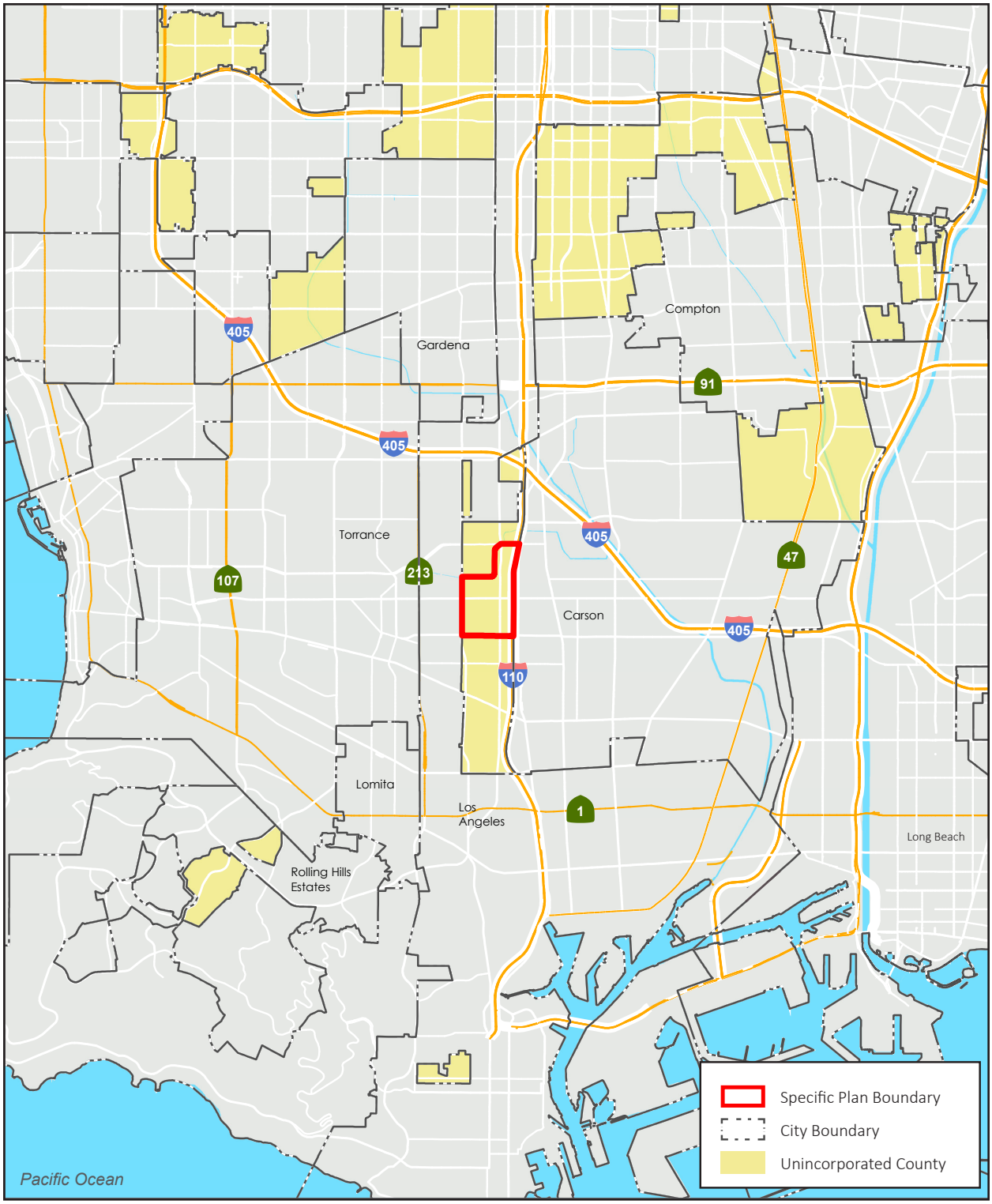
The Specific Plan provides comprehensive direction for the development of the project area and facilitates implementation of the goals and policies of the County of Los Angeles 2035 General Plan (General Plan), including the vision for the TOD priority areas. It is intended to expand opportunities for compact, infill development that is compatible with and supports intensification while staying sensitive to the existing single-family neighborhoods.

The Specific Plan would be used in conjunction with the General Plan and Los Angeles County Code to provide more detailed design and development criteria for individual project proposals and public improvements in the project area. The plan defines the proposed land use plan, development standards, infrastructure improvements, design guidelines, and implementation programs for any proposed project in the Specific Plan area.

The full Specific Plan is in Appendix C of this DEIR.

Figure 3-1 - Regional Location

3. Project Description



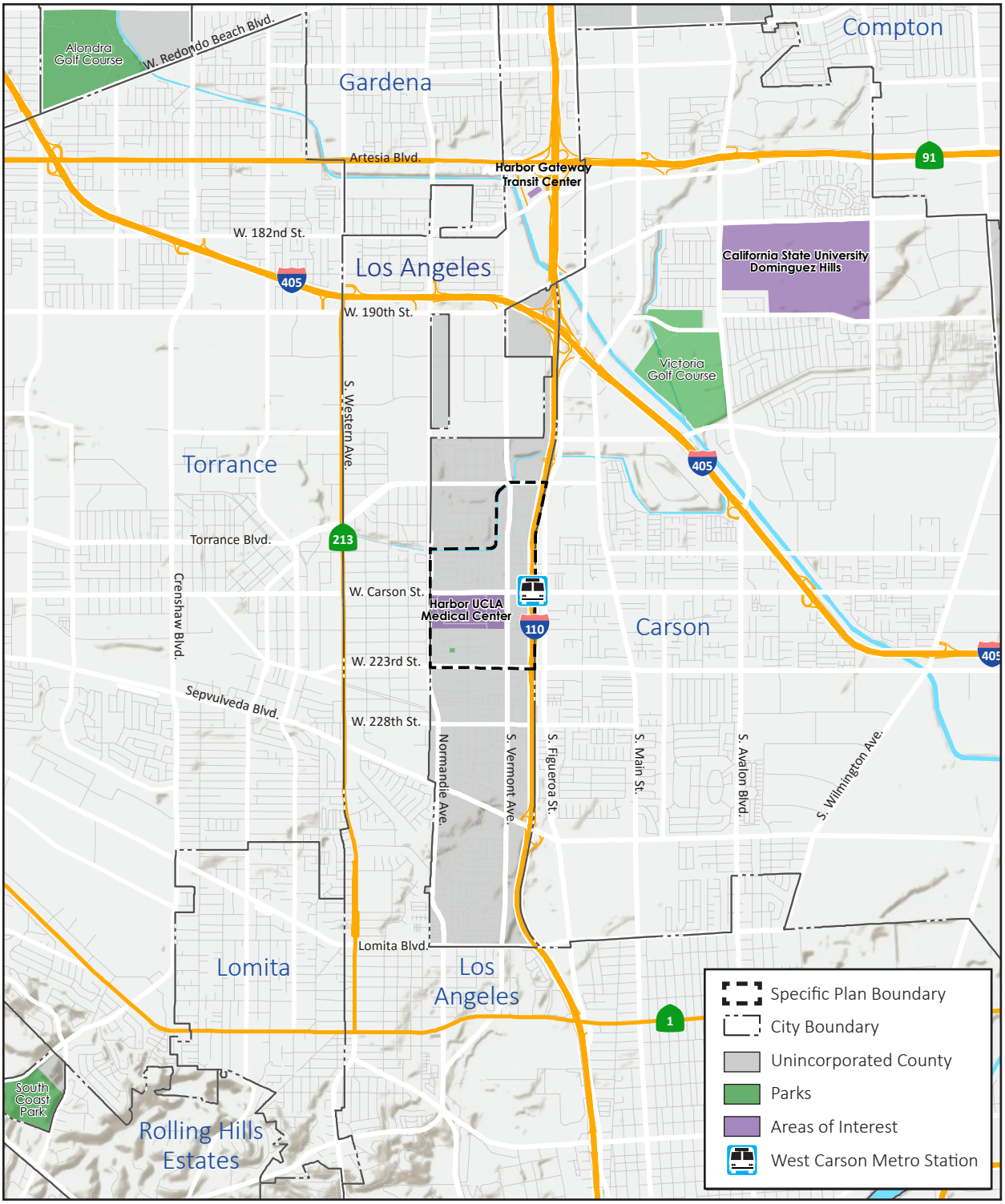
0 2
Scale (Miles)

Source: West Carson Transit Oriented District Specific Plan, 2017

3. Project Description

This page intentionally left blank.

Figure 3-2 - Local Vicinity
3. Project Description



0 1
Scale (Miles)

Source: West Carson Transit Oriented District Specific Plan, 2017

3. Project Description

This page intentionally left blank.

3.3.1.1 COMPONENTS OF THE PROPOSED SPECIFIC PLAN

The Specific Plan consists of eight sections:

1. **Introduction.** Covers the purpose and context for the Specific Plan, an overview of the planning process, and the plan's relationship to other relevant plans and programs.

2. **Vision and Goals.** Outlines the vision for the community and the overarching goals and policies for achieving that vision.

3. **Land Use and Urban Design Framework.** Identifies the land use and urban design framework, including permitted uses and regulations and development standards for each of the Specific Plan zones, such as building height, density, parking, site configuration, building design, open space and landscaping requirements, and other design standards.

4. **Mobility.** Provides a summary of the proposed mobility plan, including the vehicular, pedestrian, bicycle, transit, and parking networks.

5. **Infrastructure.** Addresses the critical infrastructure requirements associated with future development in the Specific Plan area, including water, sewer, stormwater, solid waste, and public services.

6. **Economic Development.** Highlights opportunities for economic development in the plan area and associated community benefits.

7. **Capital Improvement Plan.** Details the capital improvement recommendations and phasing for the plan.

8. **Implementation and Administration.** Provides specific implementation and financial strategies for realizing the goals of the Specific Plan as well as describing project review and administrative procedures required for amendments and/or modifications to the plan.

3.3.1.2 PROPOSED ZONING DISTRICTS

As shown on Figure 3-3, *Proposed Zoning Districts*, the Specific Plan would designate the following zoning districts for the project site.

West Carson Residential 1 Zone (R-1)

The West Carson Residential 1 zone covers approximately 118 acres and is intended to preserve the scale and form of the area's existing single-family residential neighborhoods. The R-1 zone provides primarily for single-family detached homes, up to nine units per acre. This designation also permits living suites under specific conditions and locations in the Specific Plan area. Within this designation are larger lots that may be suitable for second units as an accessory use.

West Carson Residential 3 Zone (R-3)

The West Carson Residential 3 zone encompasses seven acres and is intended to provide opportunities for medium density developments containing multiple units, such as townhomes and stacked flats, up to 30 dwelling units per acre. The development standards for this designation promote a variety of attached products types, including courtyard housing, row homes, garden apartments, and podium developments.

West Carson Residential 4 Zone (R-4)

The West Carson Residential 4 zone encompasses 12 acres and provides opportunities for developing high density multiple units, as either apartments or condominiums, up to 50 dwelling units per acre. The intent is to promote desirable high density projects close to transit and other services. Given the range of lot sizes and configurations, development standards for this designation promote a variety of product types to encourage the development of affordable and workforce housing that serves the needs of the West Carson community, especially those associated with Harbor-UCLA Medical Center.

Residential Planned Development

The Residential Planned Development zone encompasses five acres. Its purposes are to: promote residential amenities beyond those expected under conventional single-family development, achieve greater flexibility in design, encourage well-planned neighborhoods through creative and imaginative planning as a unit, and provide for appropriate use of land that is sufficiently unique to warrant special methods of development.

Neighborhood Commercial (NC)

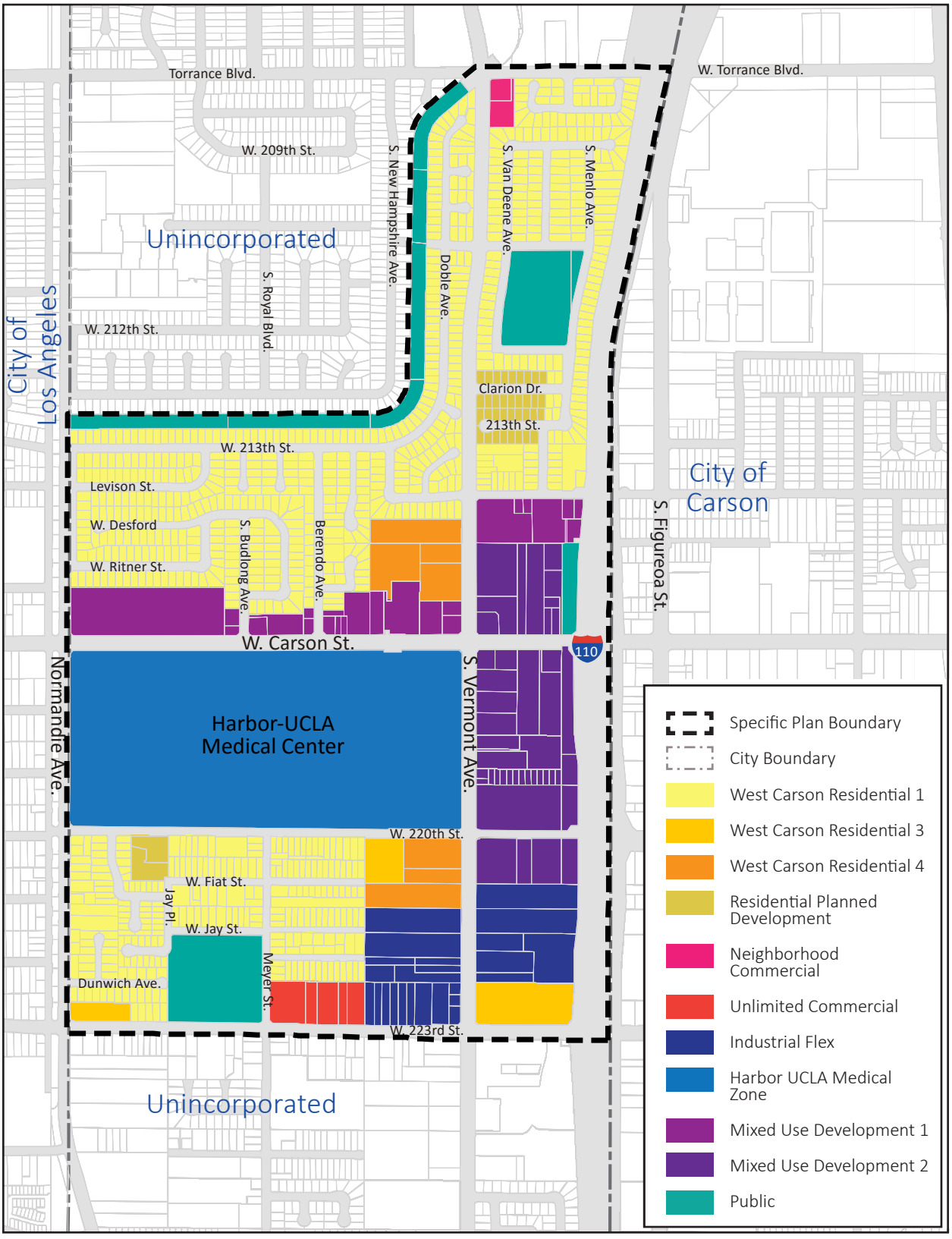
The Neighborhood Commercial zone covers one acre and is established to serve the local retail and service needs of West Carson residents. This zone is suited for a two- to five-acre shopping center, possibly anchored by a grocery store, with ancillary goods, services, and restaurants that serve the daily needs of nearby residents. The intent is to preserve the neighborhood-service commercial center on Vermont Avenue at the northern edge of the Specific Plan area.

Unlimited Commercial (UC)

The Unlimited Commercial zone is approximately four acres and is established to meet the commerce and service needs of the residents and business community of West Carson, while ensuring compatibility with adjacent land uses. Given its proximity to the elementary school and single-family neighborhoods, this zone also allows stand-alone or mixed-use multifamily residential, up to 30 dwelling units per acre. The intent is to encourage a range of retail, personal, and professional services—as well as multifamily residential—in a well-designed, walkable environment.

Figure 3-3 - Proposed Zoning Districts

3. Project Description



Source: West Carson Transit Oriented District Specific Plan, 2017

3. Project Description

This page intentionally left blank.

Industrial Flex (IF)

The Industrial Flex District covers 22 acres and allows opportunities for nonindustrial uses—including commercial, office, and multifamily residential uses, where appropriate—in the light industrial areas south of West 220th Street. The IF District recognizes that the West Carson area is transitioning from traditional, small-scale, light-industrial uses to a broader range of uses to serve the community, including service commercial uses, professional and medical office, and multifamily residential.

Harbor-UCLA Medical Zone

The Harbor-UCLA Medical zone encompasses 71 acres to support the existing and future needs of the Harbor-UCLA Medical Center campus while ensuring compatibility with adjacent land uses. This zone accommodates the Harbor-UCLA Master Plan, whose goal is to maintain, improve, and expand the hospital and other medical facilities, community-serving uses, and associated supportive uses—such as transitional housing, incidental retail, parking, and public open space. The zone also encourages expanded pedestrian walkways to improve connectivity between the Harbor-UCLA Medical Center, LA BioMed facility, Carson Street uses, Carson Metro Station, and the West Carson community.

Mixed Use 1 (MU1) Zone

The Mixed Use 1 zone encompasses 20 acres, primarily along Carson Street, and promotes development of a mix of commercial, office, and residential uses, with an emphasis on neighborhood- and medical-campus-serving retail, restaurant, and services uses. Uses can be developed in either a stand-alone or a vertical mixed-use configuration. The MU1 zone provides for a range of small to large retail or mixed-use centers, multifamily residential uses up to 30 dwelling units per acre, and private/public open space components. It also promotes strong bicycle and pedestrian connections to the Carson Metro Station, medical campus to the south, and broader West Carson community.

Mixed Use 2 (MU2) Zone

The Mixed Use 2 zone is approximately 31 acres and is intended to be developed over time as a transit-supportive environment providing a higher-intensity mix of retail, office, restaurant uses, and residential development in a compact, walkable setting. This designation encourages a range of multifamily residential uses in either a stand-alone or mixed-use configuration, up to 70 dwelling units per acre. The MU2 zone is intended to promote community redevelopment through higher intensity, transit-supporting infill development

Public Zone (P)

The West Carson Public zone is 27 acres to provide for established public uses such as schools, parks, the 208th Street Drain Channel, and the Carson Metro Station park-and-ride as well as other public uses. This designation is intended to promote the use of publicly owned land for the purposes of community open space, connection, and activity.

3. Project Description

Zoning Districts and Development Potential Summary

Based on the development potential of each zoning district, buildout of the Specific Plan would allow up to 3,574 residential units and 2,661,321 square feet of nonresidential uses (see Table 3-1). Currently, the plan area holds 1,303 residential units and about 956,335 square feet of nonresidential land uses. The maximum buildout intensity would entail net increases of approximately 2,271 residential units (174 percent increase), and 1.7 million square feet of nonresidential land uses (178 percent increase).

Table 3-1 West Carson TOD Specific Plan Development Potential

Proposed Zoning District	Acres	Percentage of Total	Residential Units	Nonresidential Building Area, Square Feet
Proposed Project				
West Carson Residential 1	118	37.0	851	—
West Carson Residential 3	7	2.2	171	—
West Carson Residential 4	12	3.8	484	—
Residential Planned Development	5	1.7	88	—
Subtotal, Residential Zoning Districts	*142*	*44.7*	*1,594*	—
Neighborhood Commercial	1	0.4	—	14,787
Unlimited Commercial	4	1.3	30	50,620
Industrial Flex	22	6.8	486	1,133,779
Harbor-UCLA Medical	71	22.4	100	—
Mixed Use 1	20	6.2	143	483,460
Mixed Use 2	31	9.8	1,223	978,675
Public Zone	27	8.5	—	—
Subtotal, Nonresidential Districts	*176*	*55.4*	*1,882*	*2,661,321*
Total	319 acres	100%	3,574	2,661,321
Existing Conditions				
Existing Conditions	319	—	1,303	956,335
Net Increase/(Decrease)	0	—	2,271	1,704,985
Percent Net Increase	0%	—	174%	178%

Note: The total may not equal the sum of the components due to rounding.

3.4.1.1 MOBILITY AND PARKS

The Specific Plan chapter, "Mobility and Public Realm Strategy," describes the circulation improvements needed to support transit oriented development in the Specific Plan area. A key component of the Specific Plan is transforming the current circulation network, which largely supports vehicular travel, into a network that places a higher priority on the principles of complete streets and multimodal design. The strategies in this chapter of the Specific Plan provide a framework for establishing and maintaining a sustainable circulation network that integrates motorized and nonmotorized transportation.

Street Network

Figure 3-4, *Proposed Street Network,* shows the proposed street network within the Specific Plan area. Much of the street network in the Specific Plan area would remain the same; however, streetscape improvements are proposed along key arterials. These improvements are intended to transform the auto-oriented streetscape into more sustainable, multimodal design. They include elements such as wider sidewalks, bicycle and transit facilities and amenities, landscaping and street trees, lighting, and landscaped medians.

Transit Circulation

The Specific Plan area encompasses a rich transit network of three local transit agencies—Metro, Torrance Transit, and Gardena Municipal. Eight local bus routes traverse the Specific Plan area on primary transit corridors that include Normandie Avenue, Vermont Avenue, Carson Street, and 220th Street.

To improve transit access and safety, the Specific Plan proposes to move the existing Carson Metro station from underneath the Carson Street overpass to a new location along I-110. This would make waiting transit patrons more visible and improve safety. Additional transit amenities proposed in the Specific Plan include shelters, improved plaza areas, benches, lighting, transit information, bicycle racks, and public art.

Parks

Half an acre of parkland in the Specific Plan area is available for recreational and public use at Learning Grove Park. This county park has green space but no amenities and is used as a joint-use facility with Meyler Street Elementary School. Another joint-use park in the Specific Plan area, at Van Deene Avenue Elementary School, has park amenities such as basketball courts and playground equipment, but no green or open space.

The Specific Plan designates several sites that could be redeveloped as pocket parks by converting cul-de-sacs, partially covering a drainage channel, and—ultimately—reclaiming property that will no longer be needed by Harbor-UCLA Medical Center (see Figure 3-5, *New Park Opportunities*).

3.4.1.2 INFRASTRUCTURE

Water

The Specific Plan area is serviced by pipes that vary from 2-inch connectors to 33-inch main lines. The vast majority of pipe is composed of transite and PVC. Buildout of the Specific Plan would require the following water line upgrades:

- The 14-inch pipe in Vermont Avenue from Carson Street to 220th Street would require resizing to a minimum of a 20-inch pipe.

- The flow rate to the north from Carson Street to 214th Street is split between two lines: an 8-inch pipe along Vermont Avenue, and a 16-inch pipe along Menlo Avenue. One or both pipes would need to be resized. Without knowing the flow into each pipeline, exact sizing cannot be recommended at this time.

Sewer

Two sanitary systems exist in the Specific Plan area—local lines and trunk sewers. The local system is a series of primarily eight-inch gravity mains with laterals connecting to existing buildings. All of these sewers are composed of vitrified clay pipe. All local sewer lines are owned and operated by the County of Los Angeles Department of Public Works.

The trunk sewer lines are owned and operated by the Sanitation Districts of Los Angeles County, Carson District. Four main segments of these trunk lines collect sewage from the Specific Plan area. Sewer upgrades required to accommodate buildout of the Specific Plan include:

- The area north of Carson Street and east of Vermont Avenue would require connection to the existing trunk line south of Carson Street.

- The trunk line south of 220th Street past the Specific Plan area is undersized for flow in the area. Strategies that could address the flow need include:
  - Install a pumping station that could provide pressure to the line to allow more sewage flow through it;
  - Increase the size of the trunk
  - Increase the slope of the trunk

Stormwater

Stormwater services in the West Carson TOD Specific Plan area are connected to the large network of open channel drains that are tied to a larger collection basin. The Specific Plan recommends that all new development projects involving construction of new roadways conform to the Green Infrastructure Guidelines ("low-impact development") of the Los Angeles County Department of Public Works.

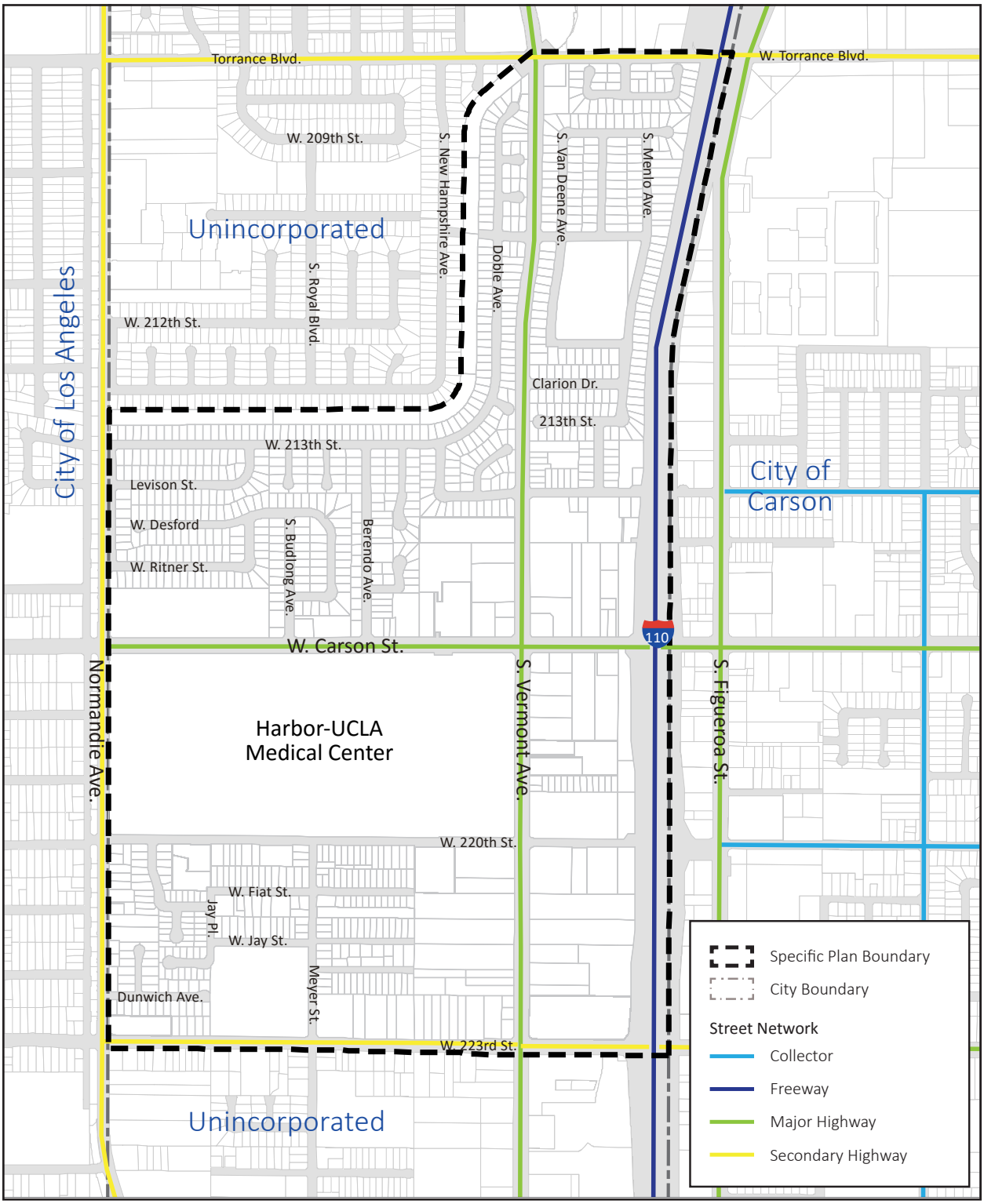
3.5 INTENDED USES OF THE EIR

This Draft EIR (DEIR) examines the environmental impacts of the proposed project and addresses various actions by the County and others to adopt and implement the proposed project, thereby enabling the County of Los Angeles, other responsible agencies, and interested parties to make informed decisions with respect to the requested entitlements. The anticipated approvals required for this project are:

Lead Agency	Action
County of Los Angeles	• Certify the Environmental Impact Report for the proposed project • Adopt the West Carson Transit Oriented Development Specific Plan
Los Angeles Regional Water Quality Control Board	• Issuance of a National Pollution Discharge Elimination System Permit for future construction activities
California Department of Transportation (Caltrans)	• Approval of an encroachment permit for roadway improvements, if necessary

Figure 3-4 - Proposed Street Network

3. Project Description

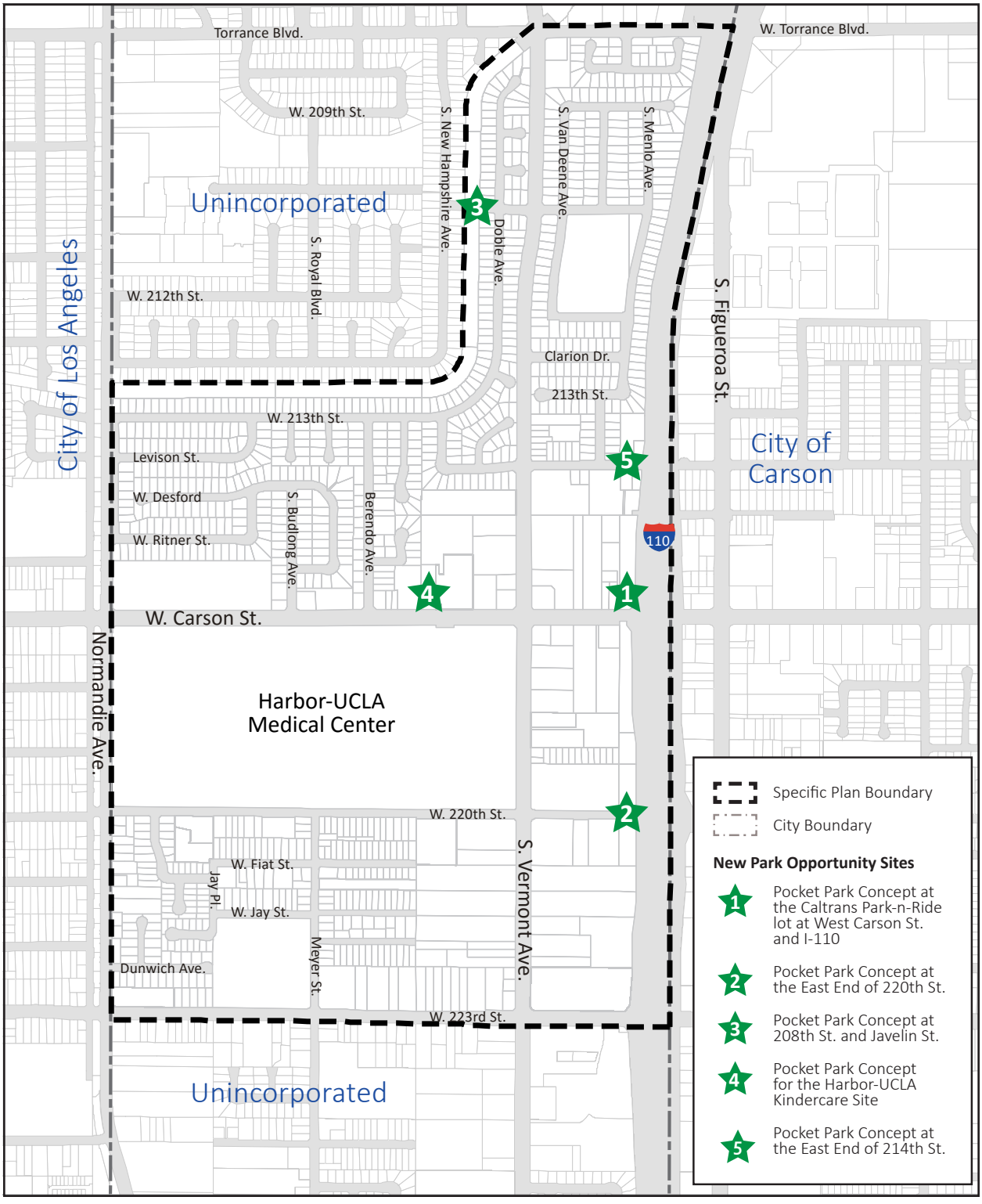


Source: West Carson Transit Oriented District Specific Plan, 2017

3. Project Description

This page intentionally left blank.

Figure 3-5 - New Park Opportunities
3. Project Description



Source: West Carson Transit Oriented District Specific Plan, 2017

3. Project Description

This page intentionally left blank.

4. Environmental Setting

4.1 INTRODUCTION

This section provides a "description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, ... from both a local and a regional perspective" (Guidelines § 15125[a]), pursuant to provisions of the California Environmental Quality Act (CEQA) and the CEQA Guidelines. The environmental setting provides the baseline physical conditions from which the lead agency will determine the significance of environmental impacts resulting from the proposed project.

4.2 REGIONAL ENVIRONMENTAL SETTING

4.2.1 Regional Location

The project site is in the unincorporated community of West Carson in southern Los Angeles County. The site is in the Los Angeles Basin, a coastal plain extending from the Pacific Ocean on the south to the Santa Monica Mountains and Puente Hills on the north. Regional access to the project site is from Interstate 110 (I-110, or the Harbor Freeway) via ramps at Torrance Boulevard and Carson Street (see Figure 3-1, *Regional Location*).

4.2.2 Regional Planning Considerations

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a federally recognized metropolitan planning organization (MPO) that represents the counties of Los Angeles, Orange, Ventura, Imperial, San Bernardino, and Riverside and 190 cities, and encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. As the Southern California region's MPO, SCAG cooperates with the South Coast Air Quality Management District, the California Department of Transportation, and other agencies in preparing regional planning documents.

Regional Transportation Plan/Sustainable Communities Strategy

On April 7, 2016, SCAG adopted the 2016-2040 RTP/SCS: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life, which places a greater emphasis than ever on sustainability and integrated planning. The 2016-2040 RTP/SCS has a strong commitment to reduce emissions from transportation sources to comply with Senate Bill 375, improve public health, and meet the National Ambient Air Quality

Standards set by the federal Clean Air Act. The 2016-2040 RTP/SCS provides a blueprint for improving residents' quality of life by providing more choices for where they will live, work, and play and how they will move around (SCAG 2016). The project's consistency with the applicable 2016-2040 RTP/SCS policies is analyzed in detail in Section 5.8, *Land Use and Planning*, of this DEIR.

High Quality Transit Areas

Starting with the adoption of the 2012 RTP/SCS, the areas previously known as 2% Strategy Opportunity Areas were updated by SCAG and renamed "high quality transit areas" (HQTAs), which are a part of and integrated into the SCS portion of the 2016-2040 RTP/SCS. An HQTA is generally a walkable transit village or corridor that is within a half mile of a well-serviced transit stop or a transit corridor with a service frequency of 15 minutes or less during peak commute hours. The overall land use pattern of the 2016-2040 RTP/SCS focuses jobs and housing in the region's designated HQTAs. The project site is in an HQTA.

South Coast Air Quality Management District

The SCAQMD is responsible for monitoring air quality as well as planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the region. The majority of Los Angeles County is in the South Coast Air Basin, which is managed SCAQMD. The SCAQMD jurisdiction is approximately 10,743 square miles and includes the entire county except for the Antelope Valley. The SCAQMD implements a wide range of programs and regulations that address point-source pollution and mobile-source emissions, and it enforces air quality through inspections, fines, and educational training.

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. These regulated air pollutants are known as criteria air pollutants; they are carbon monoxide, volatile organic compounds (VOC), nitrogen oxides (NO_X), sulfur dioxide, coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead. VOC and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants, such as ozone (O_3), through chemical and photochemical reactions in the atmosphere. Air basins are classified as attainment/nonattainment areas for particular pollutants, depending on whether they meet ambient air quality standards (AAQS) for that pollutant. The levels of ozone, particulate matter, and carbon monoxide in Los Angeles County continually exceed federal and state AAQS.

South Coast Air Basin Air Quality Management Plan

SCAQMD recently updated its 2012 Air Quality Management Plan (AQMP) with the 2016 AQMP. The purpose of the 2016 AQMP is to set forth a comprehensive and integrated program that will lead the air basin into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, and to provide an update to the air basin's commitments to meeting the federal 8-hour ozone standards.

Greenhouse Gas Emissions Reduction Legislation

Current State of California guidance and goals for reductions in greenhouse gas (GHG) emissions are generally embodied in Executive Order S-03-05; Assembly Bill 32 (AB 32), the Global Warming Solutions Act (2008); and Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act.

Executive Order S-3-05, signed June 1, 2005, set the following GHG reduction targets for the state:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-3-05. Based on the GHG emissions inventory conducted for its 2008 Scoping Plan, the California Air Resources Board (CARB) approved a 2020 emissions limit of 427 million metric tons of carbon dioxide-equivalent ($MMTCO_2e$) for the state (CARB 2008). CARB is required to update the Scoping Plan every five years and completed the last update in 2014. In 2015, the governor signed Executive Order B-30-15 into law, establishing a GHG reduction target for year 2030, which was later codified under SB 32 (2016). The 2016-2017 update to the Scoping Plan will address the 2030 target of 40 percent below 1990 levels.

In 2008, SB 375 was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 17 regions in California managed by an MPO. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). SB 375 requires CARB to periodically update the targets, no later than every 8 years. CARB plans to propose updated targets for consideration in 2016, with the intent to make them effective in 2018. For the SCAG region, the 2016-2040 RTP/SCS, adopted on April 7, 2016, projects that the SCAG region will meet or exceed the passenger per capita targets set in 2010 by CARB (SCAG 2016).

Regional Water Quality Control Board

Under the Porter-Cologne Water Quality Act, California's water quality control law, the State Water Resources Control Board (SWRCB) has ultimate control over water quality policy and allocation of state water resources. The SWRCB, through its nine Regional Water Quality Control Boards (RWQCBs), carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan. The water quality control plan for the Los Angeles RWQCB, Region 4, was adopted in 1994. It gives direction on the beneficial uses of state waters in the region; describes

the water quality that must be maintained to support such uses; and provides programs, projects, and other actions necessary to achieve the standards in the water quality control plan. Requirements for waste discharges to municipal storm drain systems in Region 4 are in Order No. R4-2012-0175 (MS4 Permit) issued by the Los Angeles RWQCB in 2012.

4.3 LOCAL ENVIRONMENTAL SETTING

4.3.1 Location and Land Use

Location

The project site is in the community of West Carson, which encompasses about 2.3 square miles between the cities of Torrance to the north, Harbor City (a neighborhood in the City of Los Angeles) to the south, Carson to the east, and Los Angeles and Torrance to the west.

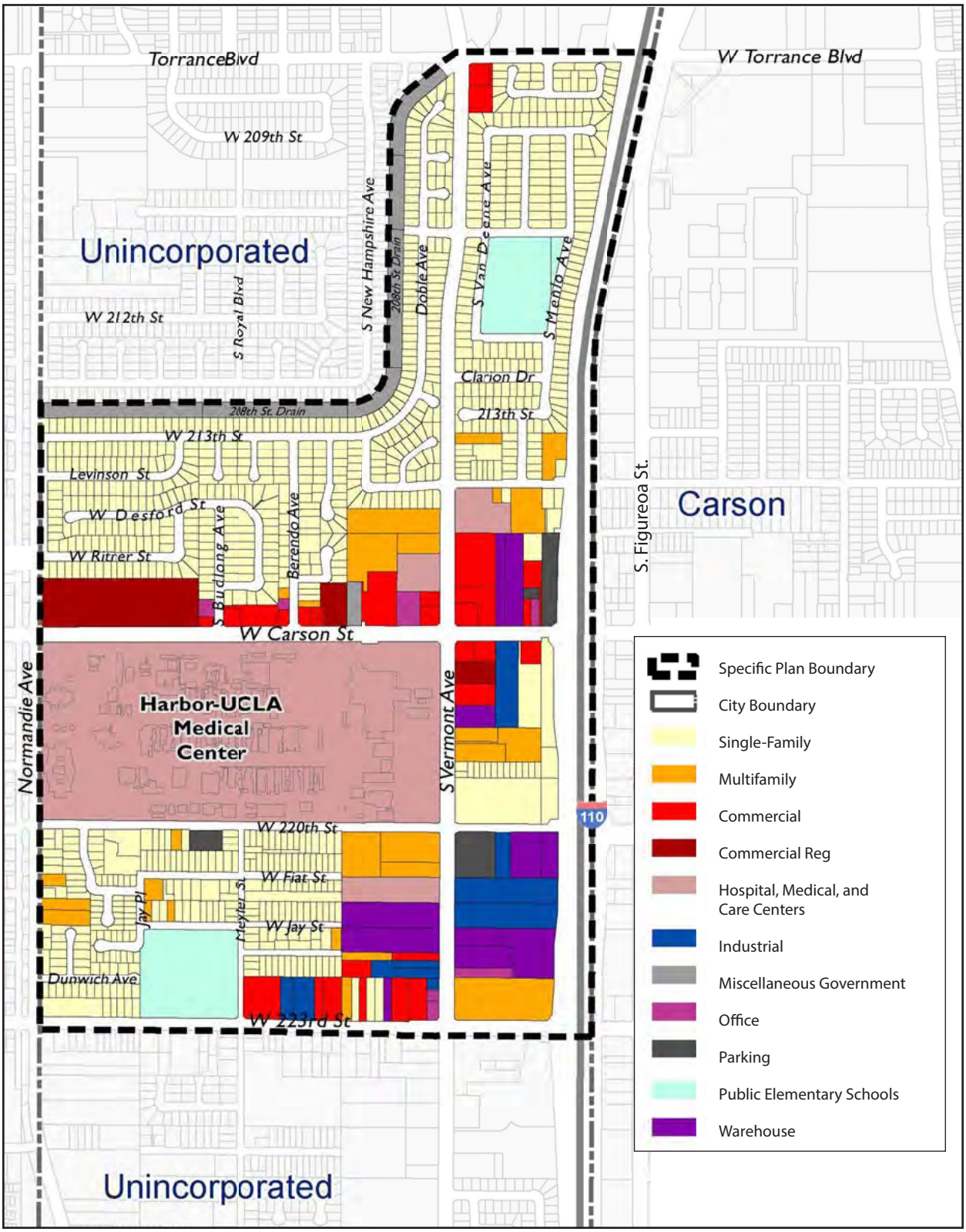
The West Carson TOD Specific Plan covers approximately 318 acres and generally consists of property east of Normandie Avenue and southeast of the 208th Street Drain Flood Control Channel, west of I-110, south of Torrance Boulevard, and north of 223rd Street (see Figure 3-2, *Local Vicinity*).

Land Uses

The Harbor-UCLA Medical Center campus is central to the Specific Plan area and an activity hub in the West Carson community. Most of the commercial development in the project area is north of the campus along West Carson Street. Commercial land uses along this corridor are mainly low-density strip malls and auto-centric businesses—such as fast-food chains, supermarkets, pharmacies, gas stations, and health-care-related offices. Vermont Avenue, which runs parallel to I-110, is also lined with smaller strip commercial centers, multifamily housing units, a mobile home park, and light industrial properties to the south. Industrial uses include warehousing, distribution and storage, and small equipment-manufacturing facilities.

Beyond the commercial core, residential development constitutes the northern and southern portions of the Specific Plan area, including two public elementary schools. There are approximately 1,822 residential units—82 percent single-family units and 18 percent multifamily units. Pockets of single-family residences, including a mobile home park, are located between Vermont Avenue and I-110. Most of the Specific Plan area is built out, and only three parcels are vacant in the project area. Existing land uses are illustrated on Figure 4-1, *Existing Land Uses*.

Figure 4-1 - Existing Land Uses
4. Environmental Setting



Source: West Carson Transit Oriented District Specific Plan, 2017

4. Environmental Setting

This page intentionally left blank.

4.3.2 Climate and Air Quality

The Los Angeles area has a Mediterranean-type climate, with dry, warm summers and mild, somewhat wet winters. Breezes from the Pacific Ocean tend to keep the coastal communities of the Los Angeles area cooler in summer and warmer in winter than those further inland. The Los Angeles Basin climate contributes to increased levels of ambient air pollutant concentrations. The average wind speed for Los Angeles is the lowest of the nation's 10 largest urban areas. The summertime maximum mixing height also averages the lowest in the United States, resulting in poor dispersal of pollutants vertically in the atmosphere.

The South Coast Air Quality Management District is responsible for ensuring that the district's areas meet the attainment criteria of each pollutant. The South Coast Air Basin is designated nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead (Los Angeles County only) under the California and National AAQS and nonattainment for NO_2 under the California AAQS. An air quality analysis was performed for the project, and the results are discussed in Section 5.2, *Air Quality*. Additionally, project-related impacts from GHG emissions are discussed in Section 5.5, *Greenhouse Gas Emissions*.

4.3.3 Geology and Landform

The project area is in the southwest portion of the Los Angeles Basin, which is part of the Peninsular Range Geomorphic Province of California. The Los Angeles Basin is a coastal plain extending from the Pacific Ocean on the south to the Santa Monica Mountains and Puente Hills on the north. The project site is nearly flat; much of the site is about 40 to 45 feet amsl, declining to about 27 feet amsl at the north end of the site.

Active faults in the region include the Newport-Inglewood Fault about 2.8 miles to the northeast; the Palos Verdes Fault about 4.4 miles to the south; the Cabrillo Fault immediately offshore about 8.1 miles to the south; and the Redondo Canyon Fault offshore approximately three miles to the west. The nearest Alquist-Priolo Earthquake Fault Zone is along the Newport-Inglewood Fault about 2.7 miles to the northeast (CGS 1986). No active faults are mapped within the project site (CGS 2016).

Refer to Section 5.4, *Geology and Soils*, for additional information regarding geologic conditions and an analysis of project impacts on geology and soils.

4.3.4 Hydrology

The project site is in the Dominguez Watershed, which spans 133 square miles in the southwestern Los Angeles Basin. The primary drainage channel in the watershed is Dominguez Channel, which extends for about 16 miles and discharges into San Pedro Bay. The Dominguez Channel passes about 0.9 mile northeast of the project site.

Closer to the project area, the 208th Street Drain Flood Control Channel forms much of the northern site boundary, continues eastward from the site, and discharges into the Dominguez Channel about 1.3 miles east of the project site. Storm drains conveying runoff from approximately the northern two-thirds of the project site are tributary to the 208th Street Drain Flood Control Channel. Storm drains in the south end of the site

are part of a network of drains tributary to the Wilmington Drain Channel, which begins about 1.2 miles south of the site and continues south to Machado Lake in Harbor City.

Refer to Section 5.7, *Hydrology and Water Quality*, for additional information regarding hydrological conditions and an analysis of project impacts on hydrology and water quality.

4.3.5 Noise

Community noise levels are measured in terms of the "A-weighted decibel" (dBA), a frequency correction that correlates overall sound pressure levels to the frequency response of the human ear. The noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level, a time-weighted, 24-hour average noise level based on the A-weighted decibel. Noise levels in the project area are influenced primarily by motor vehicle traffic along highways (i.e., I-110, I-405, and State Routes 1 and 213) and major arterial roadways (i.e., Torrance Boulevard, Carson Street, 220th Street, Vermont Avenue, and Normandie Avenue). Additional noise from the existing operations (HVAC systems, truck deliveries, landscaping, maintenance, etc.) of the Harbor-UCLA Medical Center and commercial uses along Carson Street and Vermont Avenue also add to the noise levels in the project area.

Refer to Section 5.9, *Noise*, for additional information regarding existing noise conditions and an analysis of project noise impacts.

4.3.6 Public Services and Utilities

The Specific Plan area is in the jurisdictional boundaries of the following public service and utility providers:

- **Police Protection:** Los Angeles County Sheriff's Department (the City of Los Angeles surrounding the site is served by the Los Angeles Police Department)
- **Fire Protection**: Los Angeles County Fire Department
- **Schools**: Los Angeles Unified School District
- **Libraries**: County of Los Angeles Public Library
- **Parks**: Los Angeles County Department of Parks and Recreation
- **Water**: California Water Service Company, Rancho Dominguez District
- **Sewers**: Los Angeles County Department of Public Works (sewer lines)
- **Wastewater Treatment**: Sanitation Districts of Los Angeles County, Carson District
- **Storm Drainage**: Los Angeles County Department of Public Works
- **Solid Waste Collection**: CalMet Services (under exclusive contract with LA County Public Works)
- **Landfills**: Sanitation Districts of Los Angeles County

- **Electricity**: Southern California Edison
- **Natural Gas**: Southern California Gas Company

Refer to Sections 5.11, *Public Services*, and 5.15, *Utilities and Service Systems*, for additional information regarding public services and utilities service systems and an analysis of project impacts on public services and utilities.

4.3.7 Scenic Features

The project area is almost entirely built out and is characterized by a commercial corridor along Carson Street, the Harbor-UCLA Medical Center campus in the center of the site, residential neighborhoods to the south of the medical campus, and additional residential neighborhoods north of the medical center and Carson Street. The commercial corridor along Carson Street is characterized by large-space retailers and supermarkets interspersed with smaller, auto-oriented local businesses. The majority of the commercial centers and strip malls are separated from the street by large surface parking lots and landscaped buffers. The Harbor-UCLA Medical Center campus is an institutional superblock with massive buildings and hospital entrance signs all around. The residential neighborhoods and north and south of Carson Street are mostly single-lane local roads with several cul-de-sacs. Overall, the visual character of the West Carson TOD Specific Plan area is an urban environment, similar to many built-out cities in Los Angeles County.

Refer to Section 5.1, *Aesthetics*, for additional information regarding visual character and quality and an analysis of the project's aesthetic impacts.

4.3.8 Transportation and Traffic

The existing street network in the project area includes major highways: Vermont Avenue, Carson Street, and Figueroa Street (offsite); secondary highways: Torrance Boulevard, Normandie Avenue, and 223rd Street; and the I-110 freeway, which forms the eastern boundary of the project site.

The West Carson TOD Specific Plan area is serviced by a number of bus routes operated by the Los Angeles Metropolitan Transit Authority (Metro), Torrance Transit, and Gardena Municipal. Eight bus routes traverse the project area. The Specific Plan area encompasses land within a half-mile radius to the west of the Carson Metro Station, which is a bus rapid transit stop along a designated bus lane adjacent to I-110. The Harbor Gateway Transit Center is approximately two miles north of the project area and is a major transit hub for the South Bay region of the county.

Refer to Section 5.13, *Transportation and Traffic*, for additional information regarding transportation and mobility conditions and an analysis of project impacts on transportation and traffic.

4.3.9 General Plan and Zoning

General Plan

The County of Los Angeles 2035 General Plan designates the West Carson TOD Specific Plan area with the following land use designations (see Figure 4-2, *Existing General Plan Land Use Designations)*:

- Residential 9 (H9, single-family residential), 124 acres
- Residential 18 (H18, single-family and two-family residences), 4 acres
- Residential 30 (H30, single-family and multifamily residences), 8 acres
- Residential 50 (H50, single-family and multifamily residences), 7 acres
- General Commercial (CG), 5 acres
- Mixed Use (MU, commercial and commercial/residential mixed), 45 acres
- Light Industrial (IL), 26 acres
- Public and Semi-Public (P), 89 acres
- Water (W), 10 acres

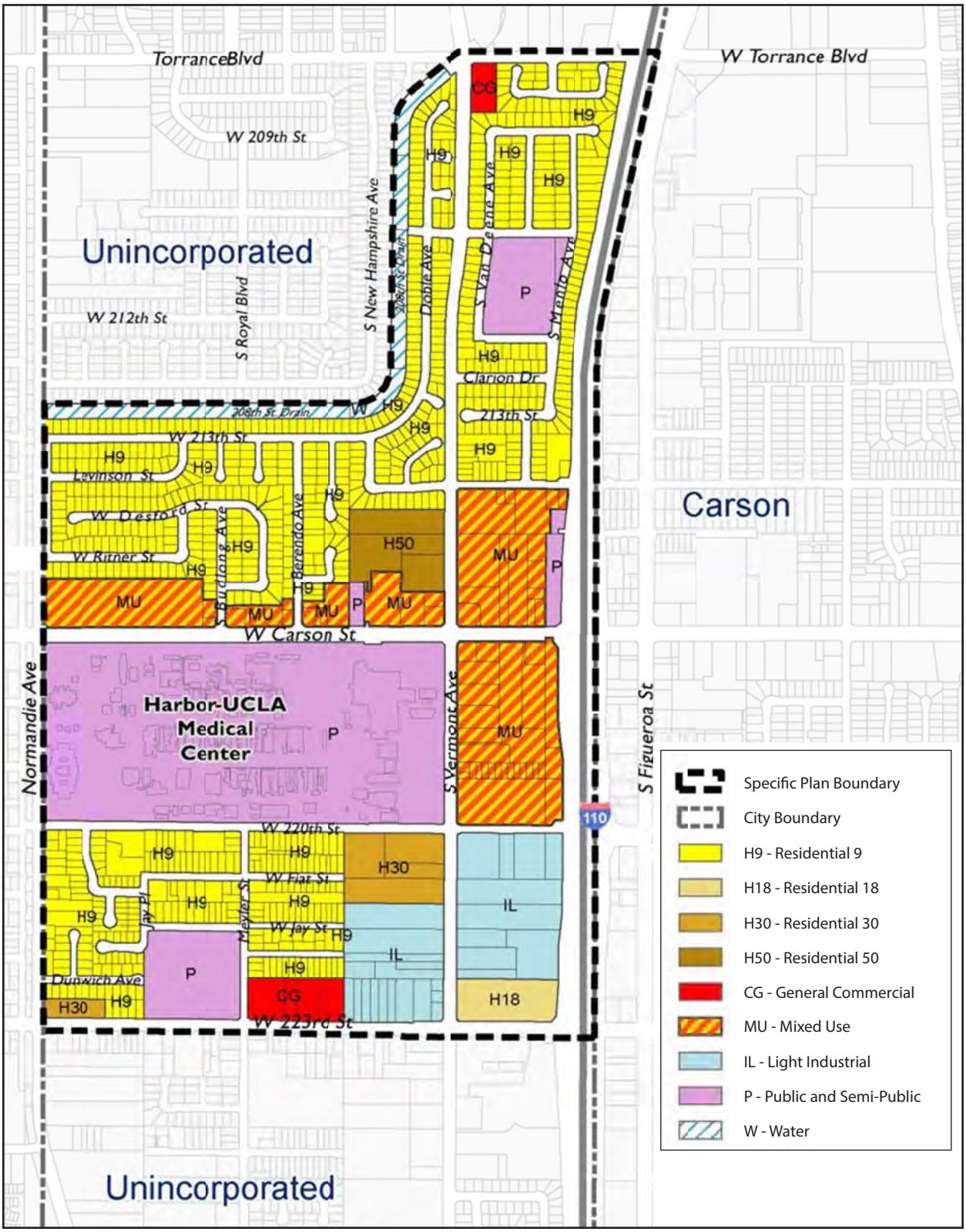
Zoning

The Los Angeles County Code of Ordinances, Section 22.12, classifies and defines the Specific Plan area with the following zones (see Figure 4-3, *Existing Zoning*):

- Light Agriculture (A-1), 87 acres
- Light Agriculture-Parking-Development Program (A-1-P-DP), 2 acres
- Neighborhood Commercial (C-2), 1 acre
- Unlimited Commercial (C-3), 76 acres
- Commercial Manufacturing (C-M), 1 acre
- Light Manufacturing (M-1), 26 acres
- Mixed Use Development (MXD), 45 acres
- Single-family residence (R-1), 55 acres
- Limited Multiple Residence (R-3), 7 acres
- Limited Multiple Residence – Development Program (R-3-DP), 5
- Unlimited Residence (R-4), 5 acres
- Unlimited Residence-29 Units/Acre-Development Program (R-4-29U-DP), 2 acres
- Residential Planned Development-16du/ac (RPD-5000-16U), 2 acres
- Residential Planned Development-20du/ac (RPD-5000-20U), 4 acres

Figure 4-2 - Existing General Plan Land Use Designations

4. Environmental Setting

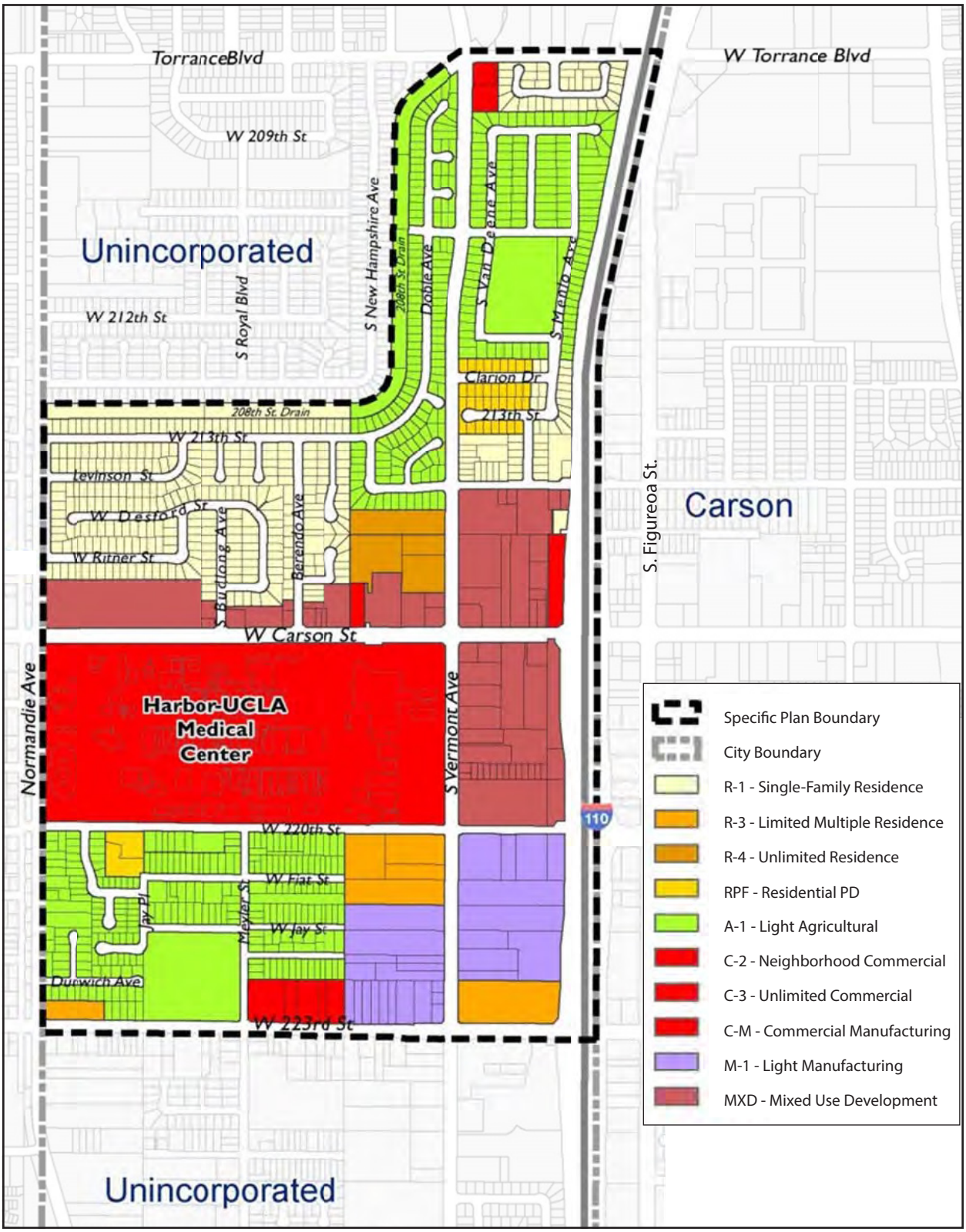


Source: West Carson Transit Oriented District Specific Plan, 2017

4. Environmental Setting

This page intentionally left blank.

Figure 4-3 - Existing Zoning
4. Environmental Setting



Source: West Carson Transit Oriented District Specific Plan, 2017

4. Environmental Setting

This page intentionally left blank.

4.5 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed where they are significant. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great a level of detail as that necessary for the project alone. Section 15355 of the Guidelines defines cumulative impacts to be "…two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts represent the change caused by the incremental impact of a project when added to other proposed or committed projects in the vicinity.

The CEQA Guidelines (Section 15130 (b)(1)) state that the information utilized in an analysis of cumulative impacts should come from one of two sources, either:

A. A list of past, present and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency; or

B. A summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions.

For the most part, the cumulative impact analyses in this DEIR use Method B, using the projections in the County's recently updated General Plan or another long-range planning document, such as the California Water Service Rancho Dominguez Water District 2015 Urban Water Management Plan for water supply and SCAG's 2016-2040 RTP/SCS for land use and planning impacts. Given the size of Los Angeles County, this cumulative impact analyses will use the growth projections for the South Bay Planning Area in the County of Los Angeles 2035 General Plan, as detailed in Table 4-1. The data in Table 4-1 represent all of the unincorporated areas in the South Bay Planning Region.

Table 4-1 County of Los Angeles General Plan, South Bay Planning Area Buildout Projections

	Acres	Dwelling Units	Population	Nonresidential SF	Employment
Commercial	154	0	0	3,362,000	6,703
Industrial	311	0	0	6,781,000	5,192
Mixed Use & Specific Plan	72	4,312	12,029	2,347,000	4,594
Open Space	344	0	0	0	100
Public/Semi-Public	328	0	0	21,455,000	7,493
Residential	2,095	21,617	74,364	0	447
TOTAL	3,304	25,929	86,392	33,945,000	24,530

Source: Los Angeles County 2035 General Plan.

4. Environmental Setting

The land use element of the County's General Plan designates the general distribution and location of land for residential, commercial, industrial, open space, and other uses. The land use categories in the General Plan guide future development and growth in a way that promotes the health, safety, and welfare of the community. To regulate building intensity, the land use element also includes several statistical tables that define the amount of physical development allowed in each land use category.

Cumulative impact analyses are also based on the most appropriate geographic boundary for the respective impact. For example, cumulative hydrological impacts are based on the area's watershed (Dominguez Watershed). Several potential cumulative impacts encompass regional boundaries (e.g., traffic, air quality, greenhouse gases) and have been addressed in the context of various regional plans and defined significance thresholds.

One related project—the Harbor-UCLA Medical Center Campus Master Plan ("Master Plan")—is within the Specific Plan area. Major goals of the Master Plan include replacing buildings from the 1940s to 1960s that are increasingly inefficient to operate and maintain, and compliance with a state law prohibiting acute-care hospital services from 2030 onward in buildings built before 1973 (Perkins + Will 2012).[1] Master Plan buildout would involve net increases of about 1.195 million square feet of nonresidential land uses and 100 residential units on the Harbor-UCLA campus, as shown in Table 4-2.

Table 4-2 Harbor-UCLA Medical Center Campus Master Plan Buildout Statistics

	Nonresidential Land Uses, Square Feet	Hospital Beds	Residential Units
Master Plan Buildout	1,941,340	570	100
Existing Conditions	746,669	570	0
Net Increase	1,194,671	0	100

Source: Harbor-UCLA Medical Center Campus Master Plan 2012.

Following is a summary of the approach and extent of cumulative impacts, which are further detailed in each topical environmental section:

- **Aesthetics.** Cumulative impacts consider the potential for the project and related projects to impact scenic resources in West Carson.
- **Air Quality.** Air quality impacts are both regional impacts and localized impacts. For cumulative impacts, the analysis is based on the regional boundaries of the South Coast Air Basin.
- **Cultural Resources.** Cumulative impacts consider the potential for the proposed project in conjunction with related development projects to result in compounded impacts on cultural resources in the area within a one-half-mile radius for historical, archaeological, and paleontological resources.
- **Geological Resources.** Geologic and soils impacts are site specific and generally do not combine to result in cumulative impacts.

[1] California Hospital Seismic Safety Law; Senate Bill 1953; Chapter 740, Statutes of 1994.

- **GHG Emissions.** GHG emissions impacts are not site-specific impacts but cumulative impacts. Therefore, the cumulative analysis in this DEIR analyzes the project's cumulative contribution to GHG emissions impact.

- **Hazards and Hazardous Materials.** Hazards and hazards materials impacts are site specific and would not combine with impacts of other projects.

- **Hydrology and Water Quality.** Cumulative hydrological impacts are based on the boundaries of the Dominguez Watershed, and cumulative groundwater impacts are based on the boundaries of the West Coast Subbasin.

- **Land Use and Planning.** Cumulative impacts are based on jurisdictional boundaries and related plans, including the County of Los Angeles General Plan and regional land use plans (e.g., SCAG's RTP/SCS).

- **Noise.** Cumulative noise impacts are based on the traffic study, which considers the regional growth based on citywide and regional projections.

- **Population and Housing.** Cumulative impacts are based on regional demographic patterns identified in regional plans (e.g., SCAG's RTP/SCS).

- **Public Services.** Cumulative impacts are based on potential related development within each service provider's boundaries—Los Angeles County Sheriff's Department, Los Angeles County Fire Department, Los Angeles Unified School District and County of Los Angeles Public Library.

- **Recreation.** Cumulative impacts are assessed relative to Los Angeles County Parks and Recreation Department standards and are based on impacts in West Carson and the South Bay Planning Area.

- **Transportation and Traffic.** The traffic study considers both project-specific impacts and the project's cumulative contribution to traffic in project vicinity. The analysis is based on a regional transportation demand model and incorporates regional growth projections identified by SCAG.

- **Tribal Resources.** Cumulative impacts related to tribal cultural resources are based on the local Native American tribes' culturally significant areas and include, but are not limited to, cultural landscapes and regions to specific heritage sites and other tribal cultural places.

- **Utilities and Service Systems.** Water supply and distribution systems would be contiguous with the California Water Service Company Rancho Dominguez District service area. Wastewater collection would be contiguous with the Los Angeles County Department of Public Works service area. Wastewater treatment would be contiguous with the Sanitation Districts of Los Angeles County Carson District service area. Storm drainage systems would be contiguous with the Los Angeles County Department of Public Works service area. Solid waste collection would be contiguous with CalMet Services service area. Landfill services would be contiguous with the Sanitation Districts of Los Angeles County Carson

District service area. Natural gas and electricity services would be contiguous with the Southern California Gas Company and Southern California Edison service areas.

Please refer to Chapter 5, *Environmental Analysis*, of this DEIR for a discussion of the cumulative impacts associated with development and growth in West Carson for each environmental resource area.

4.6 REFERENCES

California Air Resources Board (CARB). 2008, October. Climate Change Proposed Scoping Plan: A Framework for Change.

———. 2010, August. Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375. Staff Report.

California Geological Survey (CGS). 1986. Special Studies Zones Map, Torrance Quadrangle. http://gmw.consrv.ca.gov/shmp/download/quad/TORRANCE/maps/TORRANCE.PDF.

———. 2016, January 12. Fault Activity Map of California (2010). http://maps.conservation.ca.gov/cgs/fam/.

Perkins + Will. 2012, June 30. Harbor-UCLA Medical Center Campus Master Plan. http://ridley-thomas.lacounty.gov/PDFs/20120630_HARBOR%20UCLA%20MASTER%20PLAN.pdf.

Southern California Association of Governments (SCAG). 2016 April 7. Regional Transportation Plan/Sustainable Communities Strategy. http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

5. Environmental Analysis

Chapter 5 examines the environmental setting of the proposed project, analyzes its effects and the significance of its impacts, and recommends mitigation measures to reduce or avoid impacts. This chapter has a separate section for each environmental issue area that was determined to need further study in the EIR. This scope was determined in the Initial Study and Notice of Preparation (NOP), which were published January 2017 (see Appendix A), and through public and agency comments received during the NOP comment period from January 17, 2017, to February 17, 2017 (see Appendix B). Environmental issues and their corresponding sections are:

- 5.1 Aesthetics
- 5.2 Air Quality
- 5.3 Cultural Resources
- 5.4 Geology and Soils
- 5.5 Greenhouse Gas Emissions
- 5.6 Hazards and Hazardous Materials
- 5.7 Hydrology and Water Quality
- 5.8 Land Use and Planning
- 5.9 Mineral Resources
- 5.10 Noise
- 5.11 Population and Housing
- 5.12 Public Services
- 5.13 Recreation
- 5.14 Transportation and Traffic
- 5.15 Utilities and Service Systems

Sections 5.1 through 5.15 provide a detailed discussion of the environmental setting, impacts associated with the proposed project, and mitigation measures designed to reduce significant impacts where required and when feasible. The residual impacts following the implementation of any mitigation measure are also discussed.

The Initial Study also determined that certain issues under an environmental topic would not be significantly affected by implementation of the project; these issues are not discussed further in this EIR.

5. Environmental Analysis

Organization of Environmental Analysis

To assist the reader with comparing information between environmental issues, each section is organized under nine major headings:

- Environmental Setting
- Thresholds of Significance
- Plans, Programs, and Policies
- Environmental Impacts
- Cumulative Impacts
- Level of Significance Before Mitigation
- Mitigation Measures
- Level of Significance After Mitigation
- References

In addition, Chapter 1, *Executive Summary,* has a table that summarizes all impacts by environmental issue.

Terminology Used in This Draft SEIR

The level of significance is identified for each impact in this DEIR. Although the criteria for determining significance are different for each topic area, the environmental analysis applies a uniform classification of the impacts based on definitions consistent with CEQA and the CEQA Guidelines:

- **No impact.** The project would not change the environment.
- **Less than significant.** The project would not cause any substantial, adverse change in the environment.
- **Less than significant with mitigation incorporated.** The EIR includes mitigation measures that avoid substantial adverse impacts on the environment.
- **Significant and unavoidable.** The project would cause a substantial adverse effect on the environment, and no feasible mitigation measures are available to reduce the impact to a less than significant level.

5.1 AESTHETICS

This section of the Draft Environmental Impact Report (DEIR) describes the existing landform and aesthetic character of the project site and surrounding area and describes views of the project site from surrounding vantage points. It also analyzes the potential aesthetic and visual impacts resulting from implementation of the West Carson TOD Specific Plan.

5.1.1 Environmental Setting

5.1.1.1 RELEVANT PROGRAMS AND REGULATIONS

State

California Building Code

The California Building Code, Part 2 of Title 24 in the California Code of Regulations (CCR), is based on the International Building Code and combines three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards in the International Building Code.
- Building standards that have been adopted and adapted from the International Building Code to meet California conditions.
- Building standards authorized by the California legislature that constitute extensive additions not covered by the International Building Code and have been adopted to address particular California concerns.

The California Building Code includes standards for outdoor lighting that are intended to improve energy efficiency and reduce light pollution and glare by regulating light power and brightness, shielding, and sensor controls.

Local

Los Angeles County Code

The Los Angeles County Code identifies land use categories, development standards, and other general provisions that ensure consistency between the County's General Plan and proposed development projects. The following provisions from the County Code help minimize visual and light and glare impacts associated with new development projects and are relevant to the proposed project.

- **Section 22.52.820 (General Regulations).** This section regulates the design, siting, and maintenance of signs in the County. These regulations are intended to provide standards for the protection of property values; visual aesthetics; and the public health, safety, and general welfare of citizens while still providing ample opportunities for businesses and the visual advertising industry to operate successfully and effectively. Section 22.52.820(A) states, "In no case shall a lighted sign or

lighting device thereof be so placed or directed so as to permit the beams and illumination therefrom to be directed or beamed upon a public street, highway, sidewalk or adjacent premises so as to cause glare or reflection that may constitute a traffic hazard or nuisance."

5.1.1.2 EXISTING CONDITIONS

Visual Character and Resources

The West Carson TOD Specific Plan covers approximately 318 acres in the community of West Carson. Central to the project area is the Harbor-UCLA Medical Center campus, which is the activity hub of the community. Commercial development surrounds the medical campus along Carson Street. Commercial land uses along this corridor include low-density strip malls and auto-centric businesses, such as chain fast food establishments, supermarkets, pharmacies, gas stations, and health-care-related offices. Vermont Avenue, which runs parallel to the Interstate 110 (I-110) freeway is also lined with smaller strip commercial centers, multifamily housing units, a mobile home park, and light industrial properties to the south. Industrial uses include warehousing, distribution and storage, and small equipment-manufacturing facilities.

Beyond the commercial core, single- and multifamily residential development constitutes the northern and southern portions of the Specific Plan area and includes two public elementary schools. Pockets of single-family residences, including a mobile home park, are located between Vermont Avenue and I-110. Overall, the visual character of the project area is highly urbanized and built out; only three parcels are vacant in the project area.

Landform

The project area is in the southwest portion of the Los Angeles Basin, which is part of the Peninsular Range Geomorphic Province of California. The Los Angeles Basin is a coastal plain extending from the Pacific Ocean on the south to the Santa Monica Mountains and Puente Hills on the north. The project site is nearly flat; much of the site is about 40 to 45 feet above mean sea level, declining to about 27 feet above mean sea level at the north end of the site. Overall, there is little change in elevation throughout the project site.

Light and Glare

Excessive light and glare can negatively affect sensitive land uses that are close to land uses with outdoor lighting or made from reflective materials.

Existing sources of light and glare throughout the project site include building lights (interior and exterior), street lights, commercial signage, security lights, vehicular-traffic lights, and parking-area lights. For example, the Harbor-UCLA Medical Center campus is well lit inside and out during both day and night. In addition, nighttime light and glare include street lights and vehicular traffic along Carson Street and Vermont Avenue and its surrounding roadways (e.g., I-110, Torrance Boulevard, 220th Street, and 223rd Street), as well as nighttime light from the Metro Silver Line. A significant amount of ambient lighting comes from surrounding communities and roadways as well. Residential areas in the northern and southern portions of the Specific Plan area have fewer sources of light and glare.

5.1.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

AE-1 Have a substantial adverse effect on a scenic vista.

AE-2 Be visible from or obstruct views from a regional riding or hiking trail.

AE-3 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

AE-4 Substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features.

AE-5 Create a new source of substantial shadows, light, or glare which would adversely affect day or nighttime views in the area.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold AE-1
- Threshold AE-2
- Threshold AE-3

These impacts will not be addressed in the following analysis.

5.1.3 Plans, Programs, and Policies

5.1.3.1 REGULATORY REQUIREMENTS

There are no applicable project design features or regulatory requirements related to aesthetics.

5.1.4 Environmental Impacts

Methodology

Aesthetic/Visual Character Analysis

The assessment of aesthetic impacts is subjective by nature. Aesthetics generally refer to the identification of visual resources and the quality of what can be seen, as well as an overall visual perception of the environment. This analysis attempts to identify and objectively examine factors that contribute to the perception of aesthetic impacts. Potential aesthetic impacts can be evaluated by considering proposed building setbacks, scale, massing, typical construction materials, and landscaping features of the proposed

project. However, there are no locally designated or defined standards or methodologies for the assessment of aesthetic impacts.

Light and Glare Analysis

Nighttime illumination and glare analysis addresses the effects of a project's exterior lighting on adjoining uses and areas. Light and glare impacts are determined by comparing the existing light sources with the proposed lighting plan or policies. If the project has the potential to generate spill light on adjacent sensitive receptors or generate glare for receptors in the vicinity of the site, mitigation measures can be provided to reduce potential impacts, as necessary.

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.1-1: Buildout of the proposed project would not substantially degrade the existing visual character or quality of the project area. [Threshold AE-3]

Impact Analysis: The Specific Plan would allow development of up to 3,574 residential units and approximately 2.7 million square feet of nonresidential development. In addition, the Specific Plan proposes infrastructure improvements and amenities for pedestrian, bicyclist, motorist, and transit users. Development in accordance with the Specific Plan would alter the existing visual character of the project area.

The assessment of aesthetic impacts is subjective by nature. Aesthetics generally refers to the identification of visual resources and their quality, as well as an overall visual perception of the environment. A project is generally considered to have a significant aesthetic impact if it substantially changes the character of the project site such that the site becomes visually incompatible or visually unexpected with its surroundings.

The anticipated visual character of the West Carson TOD Specific Plan area at full buildout would vary based on development that would occur in each of the proposed zoning districts:

- **West Carson Residential 1 (R-1) Zone:** This zone is intended to preserve the scale and form of existing single-family residential neighborhoods that encompass most of the northern and southern portions of the site while improving connectivity and providing screening and landscape design along roadways. Development standards include 15-foot front yard setbacks and maximum building heights of 35 feet (two stories).

- **West Carson Residential 3 (R-3) Zone:** The R-3 zone only encompasses seven acres on three parcels south of 220th Street and is intended to provide opportunity for medium density development, such as townhomes and stacked flats. The residences would be designed to include courtyard housing, row homes, garden apartments, and podium developments. Front and rear yard setbacks would be 10 feet, and maximum building height would be 40 feet (three stories).

- **West Carson Residential 4 (R-4) Zone:** This zone would allow high density apartments or condominiums near the Harbor-UCLA Medical Center campus and is intended to promote desirable

high density residential projects close to transit and other services. The R-4 zone is designed to encourage development of affordable and workforce housing to serve the needs of the community, especially those associated with the medical campus. Development standards include 10-foot front yard setbacks and maximum building heights of 50 feet (four stories).

- **Residential Planned Development Zone:** This zone encourages well-planned neighborhoods with greater flexibility in design and residential amenities. The zone only encompasses five acres in the northern residential portion of the project site.

- **Neighborhood Commercial Zone (NC):** The NC zone is intended to serve the local retail and service needs of West Carson residents. The zone is suited for two- to five-acre shopping centers anchored by grocery stores, with ancillary goods, services, and restaurants. The intent is to maintain and promote the continuation of the neighborhood-service commercial center along the northern segment of Vermont Avenue near Torrance Boulevard. Maximum building heights would be 45 feet (three to four stories).

- **Unlimited Commercial (UC) Zone:** This zone is along 223rd Street and is near an elementary school and single-family residential neighborhoods. The intent of this zone is to provide a range of retail, personal, and professional services to the residential communities. Multifamily residential uses would also be allowed here. Building heights would be limited to 40 feet (three stories).

- **Industrial Flex (IF) Zone:** The IF district acknowledges the existing traditional, small-scale light industrial uses in the southeast portion of the site. Over time, development of the IF zone would provide a more compatible transition to the surrounding single-family and multifamily residential areas. Residential development in this zone would allow a variety of housing options and affordability, particularly workforce housing close to employment and transit.

- **Harbor-UCLA Medical Zone:** This zone would support the existing and future needs of the medical campus while ensuring compatibility with adjacent land uses. The zone would accommodate the Harbor-UCLA Medical Center Master Plan, which would improve and expand the hospital facilities, clinics, medical offices, research and development, and associated supportive uses such as transitional housing, retail, parking, and public open space. Proposed expanded pedestrian walkways and upgraded pedestrian and bicyclist amenities would improve connectivity between the medical campus and West Carson community. Development within this zone would be consistent with the Harbor-UCLA Medical Center Master Plan.

- **Mixed Use Development 1 (MU1) Zone:** The MU1 zone is located primarily along the northern side of Carson Street and is intended to promote development of a mix of commercial, office, and residential, with an emphasis on neighborhood- and medical campus–serving retail, restaurants, and service uses. This zone would include strong bicycle and pedestrian connections to the Carson Metro Station and Harbor-UCLA campus. Development standards include street-based frontage standards regulating building frontages along existing and new streets to form adequate and pedestrian-friendly building faces. Building heights would be limited to 40 feet (three stories).

- **Mixed Use Development 2 (MU2) Zone:** The MU2 zone is along Vermont Avenue and is intended to support transit-oriented development with a mix of higher-intensity retail, office, and restaurant uses, and compact, walkable residential neighborhoods. The development standards and design requirements address vital private/public open space components, bicycle and pedestrian connections to the Carson Metro Station and medical campus to the west, and proximity to the I-110 freeway. Building heights would be limited to 60 feet (five stories).

- **Public Zone:** The Public zone is associated with schools, parks, the 208th Street drain channel, Carson Metro Station park-and-ride, and other public uses intended to promote community open space, connection, and activity.

While each zoning district has specific development standards, general development standards are also included in the Specific Plan that regulate outside storage, interim and temporary uses, utilities, mechanical equipment, roof-mounted solar collector panels, antennae and satellite dishes, and refuse collection facilities.

Further, urban design standards in Section 3.6 of the Specific Plan provide a comprehensive approach to high quality design for the physical design of the West Carson TOD Specific Plan area. The design guidelines foster innovative design features and site-appropriate architecture that is constructed with quality materials and complemented by landscape, open spaces, and connectivity between uses. Urban design standards identified in the Specific Plan include site design (e.g., building placement and orientation, site access, parking structures, service/loading areas), building design (e.g., frontage types, corner treatments, building entrance, scale/mass, articulation, facades, awnings/canopies/marquees, architectural lighting, colors and materials, windows/doors, and roofs), public realm design (e.g., landscaping, screening, outdoor lighting), and signage.

Further, prior to issuance of use and occupancy permits, existing buildings, open space areas, and other site improvements shall be aesthetically upgraded through architectural and landscape improvements. These may include, but are not limited to, upgraded façade treatments and window types; upgraded entries (e.g., doorways, covered walkways, decorative paving); upgraded roofing materials and roof overhangs; updated color scheme for buildings; extensive planting of trees and shrubs throughout the site; improved landscape design of front yards and common areas and along building perimeters and entries; addition of pedestrian amenities, including paths, benches, shade trees, trash receptacles, drinking fountains, lighting, and decorative paving; addition of bicycle facilities, including bike racks; creation of project entryways through signage and landscape design, as applicable; creation of signage program for building identification and directional signs; and enhanced lighting scheme for building entrances, common areas, paths, and parking areas. Therefore, as new development occurs, existing buildings would also be upgraded with multiple architectural and landscaping improvements to enhance the overall visual character of the Specific Plan area.

The Specific Plan also includes public realm and park design strategies that would create engaging and comfortable outdoor places for residents, visitors and employees, such as sidewalks, parkways, multipurpose trails, parks, plazas, and squares. Key components of the public realm design and park strategies include creating new open space amenities in tandem with new development; requiring new development to comply with building entrance or front setback requirements; maximizing visibility and promoting safety of existing plazas, transit stops, pedestrian bridges, and park areas; transforming underutilized lots, drainage channels,

and cul-de-sacs into pocket parks; and improving the sidewalk and parkway system on roadways with street trees, landscaping, street furniture, enhanced street crossings, transit signage, wayfinding signs, and pedestrian lighting.

Overall, development in accordance with the Specific Plan would not degrade the existing visual character of the highly urbanized West Carson community. Existing and new buildings would be designed based on the Specific Plan's urban design guidelines and include architectural and landscaping details that complement and enhance the overall quality of the community.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.1-1 would be less than significant.

Impact 5.1-2: The West Carson TOD Specific Plan would generate additional light and glare. [Threshold AE-4]

Impact Analysis: Nighttime illumination and glare impacts are the effects of a project's exterior lighting upon adjacent uses and areas. Glare can also be generated by light reflecting off passing cars and large expanses of glazing (i.e., glass windows) or other reflective surfaces. Excessive light and/or glare can impair vision, cause annoyance, affect sleep patterns, and generate safety hazards when experienced by drivers. Light and glare impacts are determined by comparing the existing light and glare sources with the proposed lighting plan or policies and the type of development proposed.

Given that the Specific Plan area is highly urbanized and built out, there are a number of existing sources of nighttime illumination, including parking lot lights, security lights, and interior and exterior lighting from residential, commercial, office, industrial, and medical buildings. Additional onsite nighttime light and glare are caused by surrounding residential and commercial land uses outside of the Specific Plan area as well as from vehicular traffic and street lights along I-110 and major roadways. Sensitive land uses to light and glare impacts within the project include single- and multifamily residences.

Buildout of the proposed project would alter and intensify land uses and their related lighting sources throughout the West Carson TOD Specific Plan area by introducing new building (interior and exterior), security, sign, street, and parking lights. In addition to necessary lighting for safety and security, the project would also introduce aesthetic lighting, such as illumination of areas within the Carson Street and Vermont Avenue mixed-use corridors for architectural and façade detailing. The Specific Plan also encourages the provision of pedestrian, bicyclist, and transit amenities that can include lighted shelters, wayfinding signage, and additional lighting to increase the accessibility, safety, and convenience of multimodal travel. Additional sources of glare could also be introduced in the form of large expanses of glazing (i.e., glass windows) and building materials (i.e., reflective metal treatments) from the proposed nonresidential uses.

The West Carson TOD Specific Plan includes development standards related to lighting and building materials that would reduce light and glare impacts generated by the project. In general, all outdoor lighting systems, including architectural lighting, shall not aim directly at the open sky or project off-site or onto adjacent uses. Blinking, flashing, and oscillating lights are prohibited, and warm white lights should be used where possible. Colored lights should be avoided and shall only be used if they are part of a comprehensive

architectural lighting theme of commercial areas or establishments. And all parking structures must screen night lighting to avoid uplighting, spillover, and glare on nearby properties. For future projects within Mixed Use Development zones 1 and 2, all glass in windows or entrances on the first two stories shall be either clear or lightly tinted to maximize pedestrian visibility of building interiors from the sidewalk area. Mirrored, highly reflective, or densely tinted glass shall be prohibited for use in windows and entrances. Generally, all lighting and lighting fixtures shall be designed to complement buildings, be of an appropriate scale, avoid creating glare, and provide adequate light over walkways and parking areas to foster pedestrian safety.

Further, outdoor lighting design guidelines from the Specific Plan are:

- Lighting should be human scale and should be located at all building entryways, parking areas, seating areas, transit stops, open space areas, and pedestrian paths.
- Lighting fixtures shall be compatible with the architectural style of surrounding buildings to reflect the character of the area.
- Lighting must be provided at intervals adequate for safety, while minimizing light spillage and glare onto adjacent uses and the night sky.
- Freestanding light fixtures should be placed outside of pedestrian and bicycle pathways.
- Light fixtures should provide a warm light and use energy-efficient technology, such as solar-powered lighting.

The Los Angeles County Code also regulates the design, siting, and maintenance of signs in the project area. Section 22.52.8820(A) requires that no lighted sign or lighting device be placed or directed so as to permit the beams and illumination to be directed or beamed upon a public street, highway, sidewalk, or adjacent premises so as to cause glare or reflection that may constitute a traffic hazard or nuisance.

Furthermore, future development projects under the Specific Plan would be required to comply with California's Building Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6, of the California Code of Regulations), which outlines mandatory provisions for lighting control devices and luminaires. For example, new lighting sources would be required to be installed in accordance with the provisions of Section 110.9 (Mandatory Requirements for Lighting Control Devices and Systems, Ballasts, and Luminaires); this would ensure new lighting sources are not only energy efficient, but are regulated based on light power and brightness, shielding, and sensor control standards. Compliance with these state provisions would be ensured through the County's development review process and building plan check process.

Overall, development in accordance with the Specific Plan would introduce new sources of light and glare. However, the project area is highly urbanized; new light and glare associated with the Specific Plan would be typical of the surrounding area and would not increase beyond what is expected for an urban, transit-oriented

community. Adherence to the Specific Plan guidelines, County Code and California Building Energy Efficiency Standards would reduce project-generated lighting and glare impacts to less than significant levels.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.1-2 would be less than significant.

5.1.5 Cumulative Impacts

Aesthetic impacts are localized to the Specific Plan area and its immediate surroundings. Given that the project area is highly urbanized and almost entirely built out, implementation of the proposed project and any other future cumulative development that would be accommodated under the County's General Plan would likely not negatively impact the visual character of the project area or its surroundings. As with development that would be accommodated by the proposed project, all future cumulative development projects under the County's General Plan would be required to adhere to development standards outlined in the Los Angeles County Code as they relate to aesthetics. Therefore, the proposed project's contribution to cumulative visual character and quality impacts is considered less than significant.

In addition, due to the existence of light and glare from existing commercial, office, medical, industrial, and residential uses in the project area, the proposed project is not anticipated to add significant new sources of nighttime light and glare in the project vicinity. Any new residential or nonresidential development near the project site would add new lighting sources but would be primarily surrounded by other existing uses with similar lighting sources. Further, the County Code details several lighting requirements as they relate to parking areas, light and glare intrusion, and prohibited signs, which would be applicable to future cumulative development projects. Therefore, light and glare impacts of future cumulative development projects would not combine with those of the proposed project to adversely impact existing or planned sensitive receptors. The proposed project's contribution to cumulative light and glare impacts is considered less than significant.

5.1.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impacts would be less than significant: 5.1-1 and 5.1-2.

5.1.7 Mitigation Measures

No mitigation measures are required.

5.1.8 Level of Significance After Mitigation

Impacts would be less than significant.

5. Environmental Analysis
AESTHETICS

This page intentionally left blank.

5.2 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the West Carson TOD Specific Plan (project) to impact air quality. This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (SCAQMD). The analysis in this section is based on buildout of the proposed project, as modeled using the California Emissions Estimator Model (CalEEMod) and trip generation and vehicle miles traveled (VMT) provided by IBI Group (see Appendix I to this DEIR). The criteria air pollutant emissions modeling for construction and operational phases are included in Appendix D of this DEIR.

5.2.1 Relevant Programs and Regulations

Ambient air quality standards (AAQS) have been adopted and are periodically updated at state and federal levels for criteria air pollutants. In addition, both the state and federal governments regulate the release of toxic air contaminants (TACs). The project site is within the South Coast Air Basin (SoCAB). Land use is subject to the rules and regulations imposed by SCAQMD, the California AAQS adopted by the California Air Resources Board (CARB), and National AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

Federal and State Laws

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollutants. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.2-1, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter

(PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

Table 5.2-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm[2]	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	*	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

Table 5.2-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	*	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	*	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2016a.
Notes: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. California AAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth-highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 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 maintained 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 maintained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO^2 standard was established, and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

Tanner Air Toxics Act and Air Toxics "Hot Spot" Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California legislature enacted a program to identify the health effects of TACs and to reduce exposure to them. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health" (17 CCR § 93000). A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the

federal Clean Air Act (42 U.S. Code § 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act set up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit that TAC. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate "toxics best available control technology" to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- **13 CCR Chapter 10, § 2485**, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- **13 CCR Chapter 10, § 2480**, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- **13 CCR § 2477 and Article 8**, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that AAQS have been established for them. VOC and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Each of the primary and secondary criteria air pollutants and its known health effects are described here.

- **Carbon Monoxide** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005; USEPA 2017). The SoCAB is designated in attainment of CO criteria levels under the California and National AAQS (CARB 2016b).

- **Volatile Organic Compounds** are composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources include evaporative emissions from paints and solvents, asphalt paving, and household consumer products such as aerosols (SCAQMD 2005). There are no AAQS for VOCs. However, because they contribute to the formation of O_3, SCAQMD has established a significance threshold (see Section 5.2.3.1, *South Coast Air Quality Management District Thresholds*).

- **Nitrogen Oxides** are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_X produced by combustion is NO, but NO reacts quickly with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term NO_2 concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (SCAQMD 2005; USEPA 2017). The SoCAB is designated an attainment area for NO_2 under the National and California AAQS (CARB 2016b).

- **Sulfur Dioxide** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing.) At lower concentrations and when combined with particulates, SO_2 may do greater

harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (SCAQMD 2005; USEPA 2017). The SoCAB is designated attainment for SO_2 under the California and National AAQS (CARB 2016b).

- **Suspended Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤10 millionths of a meter or 0.0004 inch). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤2.5 millionths of a meter or 0.0001 inch). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (SCAQMD 2005). There has been emerging evidence that ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch), have human health implications, because ultrafine particulates' toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (SCAQMD 2013). However, the EPA or CARB has yet to adopt AAQS to regulate these particulates. Diesel particulate matter (DPM) is classified by CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,[1] environmental damage,[2] and aesthetic damage[3] (SCAQMD 2005; USEPA 2017). The SoCAB is a nonattainment area for $PM_{2.5}$ under California and National AAQS and a nonattainment area for PM_{10} under the California AAQS (CARB 2016b).[4]

- **Ozone** is commonly referred to as "smog" and is a gas that is formed when VOCs and NO_X, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung

1 $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

2 Particulate matter can be carried over long distances by wind and settle on ground or water, making lakes and streams acidic, changing the nutrient balance in coastal waters and large river basins, depleting the nutrients in soil, damaging sensitive forests and farm crops, and affecting the diversity of ecosystems.

3 Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

4 CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM_{10} standards from 2004 to 2007. The EPA approved the State of California's request to redesignate the South Coast PM_{10} nonattainment area to attainment of the PM_{10} National AAQS, effective on July 26, 2013.

function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (SCAQMD 2005; USEPA 2017). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2016b).

- **Lead** is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (SCAMQD 2005; USEPA 2017). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted stricter lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.[5] As a result of these violations, the Los Angeles County portion of the SoCAB is designated nonattainment under the National AAQS for lead (SCAQMD 2012; CARB 2016b). Because emissions of lead are found only in projects that are permitted by SCAQMD, lead is not a pollutant of concern for the project.

Toxic Air Contaminants

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

[5] Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2012).

Community Risk

To reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to provide guidance regarding 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 siting sensitive receptors near existing pollution sources. CARB's recommendations 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 substantially increases exposure and the potential for adverse health effects. Three carcinogenic TACs constitute the majority of the known health risks from motor vehicle traffic—DPM from trucks and benzene and 1,3 butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

Air Quality Management Planning

SCAQMD is the agency responsible for improving air quality in the SoCAB and assuring that the National and California AAQS are attained and maintained. SCAQMD is responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2016 AQMP

The 2016 AQMP addresses strategies and measures to attain the 2008 federal 8-hour ozone standard by 2031, the 2012 federal annual $PM_{2.5}$ standard by 2025, the 2006 federal 24-hour $PM_{2.5}$ standard by 2019, the 1997 federal 8-hour ozone standard by 2023, and the 1979 federal 1-hour ozone standard by year 2022. It is projected that total NO_X emissions in the SoCAB would need to be reduced to 150 tons per day (tpd) by year 2023 and to 100 tpd in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8-hour ozone standard would also lead to attaining the 1979 federal 1-hour ozone standard by year 2022 (SCAQMD 2017), which requires reducing NO_X emissions in the SoCAB to 250 tpd. Reducing NO_X emissions would also reduce $PM_{2.5}$ concentrations within the SoCAB. However, as the goal is to meet the 2012 federal annual $PM_{2.5}$ standard no later than year 2025, SCAQMD is seeking to reclassify the SoCAB from "moderate" to "serious" nonattainment under this federal standard. A "moderate" non-attainment would require meeting the 2012 federal standard by no later than 2021. Overall, the 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile-source strategies, and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. Strategies outlined in the 2016 AQMP would be implemented in collaboration between CARB and the EPA (SCAQMD 2017a). The 2016 AQMP was adopted on March 3, 2017.

Lead State Implementation Plan

In 2008, the EPA designated the Los Angeles County portion of the SoCAB as a nonattainment area under the federal lead classification due to the addition of source-specific monitoring under the new federal

regulation. This designation was based on two source-specific monitors in the City of Vernon and the City of Industry that exceeded the new standard in the 2007-to-2009 period. The remainder of the SoCAB, outside the Los Angeles County nonattainment area, remains in attainment of the new 2008 lead standard. On May 24, 2012, CARB approved the State Implementation Plan (SIP) revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to the EPA for approval.

SCAQMD Rules and Regulations

All projects are subject to SCAQMD rules and regulations in effect at the time of activity, including:

- **Rule 401, Visible Emissions.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in visible emissions. Specifically, the rule prohibits the discharge of any air contaminant into the atmosphere by a person from any single source of emission for a period or periods aggregating more than three minutes in any one hour that is as dark as or darker than designated No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.

- **Rule 402, Nuisance.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in a public nuisance. Specifically, this rule prohibits any person from discharging quantities of air contaminants or other material from any source such that it would result in an injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. Additionally, the discharge of air contaminants would also be prohibited where it would endanger the comfort, repose, health, or safety of any number of persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- **Rule 403, Fugitive Dust.** This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust, and requires best available control measures to be applied to earth moving and grading activities.

- **Rule 1113, Architectural Coatings.** This rule limits the VOC content of architectural coatings used on projects in the SCAQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the SCAQMD must comply with the current VOC standards set in this rule.

5.2.2 Environmental Setting

South Coast Air Basin

The project site is in the SoCAB, which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills; it is bounded by the Pacific Ocean in the southwest quadrant, and high mountains form

the remainder of the perimeter. The general region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (SCAQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the project site is the Torrance AP, California, Monitoring Station (ID 048973). The average low is reported at 44.3°F in January, and the average high is 78.6°F in August (WRCC 2017).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages 13.55 inches per year in the project area (WRCC 2017).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 2005).

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur in both the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (SCAQMD 2005).

SoCAB Nonattainment Designations

The AQMP provides the framework for air quality basins to achieve attainment of the California and National AAQS through the SIP. Areas are classified as attainment or nonattainment areas for particular pollutants depending on whether they meet the ambient air quality standards. Severity classifications for nonattainment are marginal, moderate, serious, severe, and extreme.

- **Unclassified:** A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment:** A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment:** A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.
- **Nonattainment/Transitional:** A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 5.2-2, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*. The SoCAB is designated in attainment of the California AAQS for sulfates and designated a nonattainment area for lead (Los Angeles County only) under the National AAQS.

Table 5.2-2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM_{10}	Serious Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment[1]
CO	Attainment	Attainment
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only)[2]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2016b.
1 SCAQMD is seeking to reclassify the SoCAB from "moderate" to "serious" nonattainment under federal $PM_{2.5}$ standard.
2 In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new federal and existing state AAQS as a result of large industrial emitters. Remaining areas within the SoCAB are unclassified.

SoCAB Multiple Air Toxics Exposure Study IV

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on ambient concentrations of TACs and the potential health risks from air toxics in the SoCAB. In 2008, SCAQMD conducted its third update to the MATES study (MATES III) based on the Office of Environmental Health Hazards Assessment (OEHHA) 2003 Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (2003 HRA Guidance Manual). The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in a million. The largest contributor to this risk was diesel exhaust, which accounted for 84 percent of the cancer risk (SCAQMD 2008b).

SCAQMD recently released the fourth update (MATES IV), which was also based on OEHHA's 2003 HRA Guidance Manual. The results showed that the overall monitored risk for excess cancer from a lifetime exposure to ambient levels of air toxics decreased to approximately 418 in one million. Compared to the 2008 MATES III, monitored excess cancer risks decreased by approximately 65 percent. Approximately 90 percent of the risk is attributed to mobile sources, and 10 percent is attributed to TACs from stationary sources, such as refineries, metal processing facilities, gas stations, and chrome plating facilities. The largest contributor to this risk was diesel exhaust, which accounted for approximately 68 percent of the air toxics risk. Compared to MATES III, MATES IV found substantial improvement in air quality and associated decrease in air toxics exposure. As a result, the estimated basinwide population-weighted risk decreased by approximately 57 percent since MATES III (SCAQMD 2015a).

OEHHA updated the guidelines for estimating cancer risks on March 6, 2015. The new method uses higher estimates of cancer potency during early life exposures, which result in a higher calculation of risk. There are also differences in the assumptions on breathing rates and length of residential exposures. When combined together, SCAQMD estimates that risks for a given inhalation exposure level will be about 2.7 times higher than the risk identified in MATES IV using the 2015 OEHHA guidance methodology (e.g., 2.7 times higher than 418 in one million overall excess cancer risk) (SCAQMD 2015a).

Existing Ambient Air Quality

Existing ambient air quality, historical trends, and projections in the vicinity of the project site are best documented by measurements made by SCAQMD. The project site is in Source Receptor Area (SRA) 3–Southwest Los Angeles County Coastal. The air quality monitoring station closest to the project site is the Long Beach Webster Avenue Monitoring Station. This station monitors O_3, NO_2, CO, SO_2, and PM_{10}. Additional data for $PM_{2.5}$ is supplemented by the North Long Beach Monitoring Station. The most current five years of data monitored at these stations are included in Table 5.2-3, *Ambient Air Quality Monitoring Summary*. The data show recurring violations of the federal $PM_{2.5}$ standard. The federal and state 8-hr O_3 standard, and the federal NO_2 standard were exceeded once in the last five years. The area occasionally exceeds the state PM_{10} standard. The CO and SO_2 standards have not been violated in the last five years in the project vicinity.

Table 5.2-3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2011	2012	2013	2014	2015
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	0	0	0	0
State 8-hour ≥ 0.07 ppm (days exceed threshold)	0	0	0	1	0
Federal 8-Hour > 0.070 ppm (days exceed threshold)	0	0	0	1	0
Max. 1-Hour Conc. (ppm)	0.074	0.080	0.090	0.087	0.087
Max. 8-Hour Conc. (ppm)	0.063	0.066	0.069	0.072	0.066
Carbon Monoxide (CO)					
State 8-Hour > 9.0 ppm (days exceed threshold)	0	0	0	*	*
Federal 8-Hour ≥ 9.0 ppm (days exceed threshold)	0	0	0	*	*
Max. 8-Hour Conc. (ppm)	0.063	0.066	0.069	*	*
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Federal 1-Hour ≥ 0.100 ppm (days exceed threshold)	1	0	0	0	2
Max. 1-Hour Conc. (ppb)	117.8	90.0	97.8	81.2	135.9
Sulfur Dioxide (SO_2)					
State 24-Hour ≥ 0.04 ppm (days exceed threshold)	0	0	0	*	*
Federal 24-Hour ≥ 0.14 ppm (days exceed threshold)	0	0	0	*	*
Max 24-Hour Conc. (ppm)	0.003	0.013	0.004	*	*
Coarse Particulates (PM_{10})					
State 24-Hour > 50 µg/m³ (days exceed threshold)	0	0	0	3	6
Federal 24-Hour > 150 µg/m³ (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m³)	43.0	45.0	37.0	84.0	80.0
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m³ (days exceed threshold)	1	4	2	2	3
Max. 24-Hour Conc. (µg/m³)	44.0	58.6	51.7	51.5	54.6

Source: CARB 2017. Data for O_3, CO, NO_2, SO_2, and PM_{10} are from the Long Beach Webster Avenue Monitoring Station while $PM_{2.5}$ is based on data from the North Long Beach Monitoring Station.
Notes: ppm = parts per million; ppb = parts per billion, µg/m³ = micrograms per cubic meter
* Data not available.

Existing Emissions

The project site currently generates criteria air pollutant emissions from transportation, energy (natural gas use), and area sources (e.g., natural gas fireplaces, aerosols, landscaping equipment). Criteria air pollutants generated within the Specific Plan are shown in Table 5.2-4, *Existing West Carson TOD Specific Plan Maximum Daily Operational Phase Criteria Air Pollutant Emissions*.

Table 5.2-4 Existing West Carson TOD Specific Plan Maximum Daily Operational Phase Criteria Air Pollutant Emissions

Phase	Operation-Related Regional Emissions (pounds/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	379	23	452	1	48	48
Energy	2	13	7	<1	1	1
Transportation	79	387	1,266	3	252	70
Total	459	423	1,725	4	301	120

Source: CalEEMod Version 2016.3.1. Based on highest winter or summer emissions using 2017 emission rates. Totals may not equal 100 percent due to rounding.
Notes: Industrial sources of emissions that require a permit from SCAQMD (permitted sources) are not included in the West Carson TOD Specific Plan community inventory since they have separate emission reduction requirements. Emissions associated with the Harbor UCLA Medical Center are also not included in the community inventory because they are not a part of the proposed Specific Plan.

Sensitive Receptors

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

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

5.2.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

AQ-3 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

AQ-4 Expose sensitive receptors to substantial pollutant concentrations.

AQ-5 Create objectionable odors affecting a substantial number of people.

5.2.3.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The analysis of the project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's *CEQA Air Quality Handbook* and the significance thresholds on SCAQMD's website.[6] CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established regional thresholds of significance. In addition to the regional thresholds, projects are subject to the AAQS.

Regional Significance Thresholds

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 5.2-5, *SCAQMD Significance Thresholds*, lists thresholds that are applicable for all projects uniformly regardless of size or scope. There is growing evidence that although ultrafine particulates contribute a very small portion of the overall atmospheric mass concentration, they represent a greater proportion of the health risk from PM. However, the EPA and CARB have not yet adopted AAQS to regulate ultrafine particulates; therefore, SCAQMD has not developed thresholds for them.

Table 5.2-5 SCAQMD Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROG)	75 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day

Source: SCAQMD 2015b.

Projects that exceed the regional significance threshold contribute to the nonattainment designation of the SoCAB. The attainment designations are based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health. Exposure to fine particulate pollution and ozone causes myriad health impacts, particularly to the respiratory and cardiovascular systems.

- Linked to increased cancer risk ($PM_{2.5}$, TACs)
- Aggravates respiratory disease (O_3, $PM_{2.5}$)

[6] SCAQMD's air quality significance thresholds are current as of March 2015 and can be found at: http://www.aqmd.gov/ceqa/hdbk.html.

- Increases bronchitis (O_3, $PM_{2.5}$)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O_3)
- Reduces resistance to infections and increases fatigue (O_3)
- Reduces lung growth in children ($PM_{2.5}$)
- Contributes to heart disease and heart attacks ($PM_{2.5}$)
- Contributes to premature death (O_3, $PM_{2.5}$)
- Linked to lower birth weight in newborns ($PM_{2.5}$) (SCAQMD 2015c)

Exposure to fine particulates and ozone aggravates asthma attacks and can amplify other lung ailments such as emphysema and chronic obstructive pulmonary disease. Exposure to current levels of $PM_{2.5}$ is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern California scientists' landmark children's health study found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (SCAQMD 2015d).

Mass emissions in Table 5.2-5 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. Therefore, regional emissions from a single project do not trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed above. SCAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SoCAB. To achieve the health-based standards established by the EPA, SCAQMD prepares an AQMP that details regional programs to attain the AAQS.

Localized Significance Thresholds

SCAQMD identifies localized significance thresholds (LSTs), shown in Table 5.2-6, *SCAQMD Localized Significance Thresholds*. Emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site (offsite mobile-source emissions are not included in the LST analysis) could expose sensitive receptors to substantial concentrations of criteria air pollutants. A project that generates emissions that trigger a violation of the AAQS when added to the local background concentrations would cause a significant impact.

Table 5.2-6 SCAQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)[1]	20 ppm
8-Hour CO Standard (CAAQS/NAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
Annual Average NO_2 Standard (CAAQS)[1]	0.03 ppm
24-Hour PM_{10} Standard – Construction (SCAQMD)[2]	10.4 µg/m^3
24-Hour $PM_{2.5}$ Standard – Construction (SCAQMD)[2]	10.4 µg/m^3
24-Hour PM_{10} Standard – Operation (SCAQMD)[2]	2.5 µg/m^3
24-Hour $PM_{2.5}$ Standard – Operation (SCAQMD)[2]	2.5 µg/m^3
Annual Average PM_{10} Standard (SCAQMD)[2]	1.0 µg/m^3

Source: SCAQMD 2015b.
ppm = parts per million; µg/m^3 = micrograms per cubic meter
[1] Based on the more restrictive California AAQS for CO and NO_2.
[2] Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is not relevant.

5.2.3.2 CO HOTSPOTS

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. With the turnover of older vehicles and introduction of cleaner fuels, as well as implementation of control technology on industrial facilities, CO concentrations in the SoCAB and the state have steadily declined.

5.2.3.3 HEALTH RISK ANALYSIS

Whenever a project would require use of chemical compounds that have been identified in SCAQMD Rule 1401; placed on CARB's air toxics list pursuant to AB 1807, the Air Contaminant Identification and Control Act (1983); or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by SCAQMD. Table 5.2-7, *SCAQMD Toxic Air Contaminants Incremental Risk Thresholds*, lists SCAQMD's TAC incremental risk thresholds for operation of a project. The purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project. (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 [Case No. S213478]). CEQA does not require analysis of the proposed project's environmental effects from siting sensitive receptors. However, the environmental document must analyze the impacts of environmental hazards on future users when a proposed project exacerbates an existing environmental hazard or condition. Residential, commercial, school, and office uses do not use substantial quantities of TACs, and these thresholds are typically applied to new industrial projects.

Table 5.2-7 SCAQMD Toxic Air Contaminants Incremental Risk Thresholds

Maximum Individual Cancer Risk	≥ 10 in 1 million
Cancer Burden (in areas ≥ 1 in 1 million)	> 0.5 excess cancer cases
Hazard Index (project increment)	≥ 1.0

Source: SCAQMD 2015b.

5.2.4 Plans, Programs, and Policies

5.2.4.1 REGULATORY REQUIREMENTS

RR AIR-1 New buildings are required to achieve the current California Building Energy and Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2016 Building and Energy Efficiency Standards are effective starting on January 1, 2017. The Building Energy and Efficiency Standards and CALGreen are updated tri-annually with a goal to achieve net zero energy (NZE) for residential buildings by 2020 and non-residential buildings by 2030. The County's green building standards which implement and exceed CALGreen are identified County Code, Title 31. The County has adopted the Voluntary Tier°1 standards for non-residential construction greater than or equal to 25,000 square feet (Section 301.3.1, Buildings greater than or equal to 25,000 square feet).[7] Newly constructed high-rise residential buildings of seven stories or greater are also required to comply with Section 301.3, which requires implementation of the Voluntary Tier°1 standards. Newly constructed low-rise and high-rise residential buildings (six stories or less) are only required to comply with the mandatory measures of CALGreen.

RR AIR-2 New buildings are required to adhere to the California Green Building Standards Code (CALGreen) requirement to provide bicycle parking for new non-residential buildings, or meet local bicycle parking ordinances, whichever is stricter (CALGreen Sections 5.106.4.1, 14.106.4.1, and 5.106.4.1.2). Non-residential construction would be required to provide anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of new visitor motorized vehicle parking spaces being added. For employee, long-term secured bicycle parking is required to be provided for five percent of the tenant-occupied (i.e., staff) motorized vehicle parking spaces being added. The Proposed Project is also required to designate parking for low-emitting, fuel-efficient, and carpool/vanpool spaces identified in CALGreen. Non-residential buildings of 25,000 square feet or more also requires compliance with the Tier°1 voluntary measures in section A5.601.2.4, which require low-emitting, fuel-efficient, and carpool/vanpool spaces for 10 percent of the total parking capacity.

[7] With the exception that high-rise non-residential construction would be subject to the mandatory (Table A4.106.5.1(3)), rather than the Tier 1 voluntary, measures for solar reflectance in Table A5.106.11.2.2.

RR AIR-3 Construction activities will be conducted in compliance with 13 California Code of Regulations (CCR) Section 2499, which requires that nonessential idling of construction equipment is restricted to five minutes or less.

RR AIR-4 Construction activities will be conducted in compliance with any applicable South Coast Air Quality Management District (SCAQMD) rules and regulations, including but not limited to the following:

- Rule 403, Fugitive Dust, for controlling fugitive dust and avoiding nuisance.
- Rule 402, Nuisance, which states that a Project 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".
- Rule 1113, which limits the volatile organic compound content of architectural coatings.
- Rules 201, 203 and 219, which regulate permits for installation and use of equipment that may generate air contaminants, such of commercial kitchen equipment and emergency generators.

5.2.4.2 PROJECT DESIGN FEATURES

PDF AIR-1 **Torrance Boulevard.** The West Carson TOD Specific Plan proposes the addition of Class II bicycle facilities along Torrance Boulevard to improve connections to the regional bikeway network, which includes the proposed 208th Street multi-use path and the Dominguez Channel located in the neighboring City of Carson. The Specific Plan also encourages the provision of community facilities, such as community centers, community gardens, and libraries, as well as enhancements to the pedestrian environment such as landscaping, street trees, and lighting to encourage more pedestrian activity and social interactions.

PDF AIR-2 **Vermont Avenue.** The Specific Plan introduces mixed-use and higher density residential development along Vermont Avenue to activate the corridor and encourage more pedestrian activity. The Specific Plan will also introduce streetscape improvements including a striped buffer between existing Class II bicycle facilities and on-street parking in order to improve bicycling safety and landscaped medians to improve overall aesthetics along the corridor.

PDF AIR-3 **Normandie Avenue.** The Specific Plan proposes wider sidewalks along Normandie Avenue to accommodate high levels of pedestrian activity generated from the Harbor-UCLA Medical Center and the adjacent proposed mixed-use land use. The Specific Plan also introduces a Class II bicycle facility along Normandie Avenue to improve connections to the greater regional bikeway network.

PDF AIR-4 **Carson Street.** The Specific Plan proposes mixed-use and higher density development along and adjacent to Carson Street to lay the foundation for a more livable and sustainable corridor that works to improve air quality, traffic congestion, and mobility. The Specific Plan introduces wider sidewalks, landscaping, street trees, reduced on-street parking, striped buffers between existing bicycle facilities and vehicular traffic, and a multi-use pathway to support active modes of transportation. The Specific Plan also encourages the provision of transit amenities, such as shelters, benches, lighting, wayfinding, service route maps and information, and streetscape improvements that focus on facilitating the safe and efficient movement of transit.

PDF AIR-5 **223rd Street.** The Specific Plan introduces both a Class II and a Class III bicycle facility along various segments of the corridor to improve connectivity to the regional bikeway network. The proposed bicycle facilities are also intended to provide first-last mile solutions to transit within the West Carson area. Additionally, a road diet is proposed along a segment of the corridor, between Normandie Avenue and Vermont Avenue, to decrease traffic volumes and improve safety for bicyclists and pedestrians.

PDF AIR-6 **Metro Silver Line Transit Stop Relocation Along I-110.** The existing Harbor Freeway/Carson Street transit stop is accessed via a stairway from the Carson Street overpass. Although lighting exists at the transit stop, the stop lacks a sense of transparency, or the degree to which an individual can see or perceive what lies beyond the edge of a street or public space in order to feel safe. Additionally, high travel speeds along the freeway also impact perceived safety as the existing stop fronts I-110. To improve transit access and safety, the Specific Plan encourages coordination with Metro to move the existing transit stop from underneath the Carson Street overpass to a new location along I-110. Relocating the stop from underneath the overpass would enhance visibility of waiting transit patrons and improve safety.

PDF AIR-7 **Bicycle Parking.** The West Carson TOD Specific Plan provides modifications to the existing bicycle parking requirements contained in Chapter 22.52.1225 of Title 22 of the County's Code of Ordinances. The proposed modifications to the existing bicycle parking requirements are intended to provide a bicycle parking supply that supports TOD districts and encourages the use of bicycling as an alternative mode of transportation (see Table 4.1, Minimum Bicycle Parking Requirements, in the Specific Plan).

PDF AIR-8 **Parking Standards.** The existing parking supply within the Specific Plan area is comprised of a combination of on-street and off-street parking resources. The West Carson TOD Specific Plan provides modifications to the parking requirements contained in Chapter 22.112 of Title 22 of the County's Code of Ordinances. These modifications are intended to provide a parking supply that supports TOD districts and allows for greater flexibility in the provision of minimum parking spaces (see Table 4.2, Parking Requirements, in the Specific Plan).

5.2.5 Environmental Impacts

Methodology

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with implementation of the proposed project. SCAQMD has published guidelines that are intended to provide local governments with guidance for analyzing and mitigating air quality impacts and that were used in this analysis (SCAQMD 1993; SCAQMD 2008a; SCAQMD 2015b; SCAQMD 2017b). Industrial sources of emissions that require a permit from SCAQMD (permitted sources) are not included in the West Carson TOD Specific Plan community inventory since they have separate emission reduction requirements. Emissions associated with the Harbor University of California Los Angeles (UCLA) Medical Center are also not included in the community inventory because they are not a part of the proposed Specific Plan. Modeling of criteria air pollutants was conducted using the California Emissions Estimator Model (CalEEMod), version 2016.3.1. On-road transportation sources are based on trip generation rates and VMT provided by IBI Group (2017).

Impact Analysis

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.2-1: Criteria air pollutant emissions associated with population and employment growth in the West Carson TOD Specific Plan have the potential to affect the assumptions of SCAQMD Air Quality Management Plan. [Threshold AQ-1]

Impact Analysis: CEQA requires that projects be evaluated for consistency with the AQMP. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental effects of a project under consideration at a stage early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals of the AQMP. The regional emissions inventory for the SoCAB is compiled by SCAQMD and SCAG. Regional population, housing, and employment projections developed by SCAG are based, in part, on the local jurisdictions' general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP. These demographic trends are incorporated into the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy, compiled by SCAG to determine priority transportation projects and vehicle miles traveled within the SCAG region. Projects that are consistent with the local general plan are considered consistent with the air quality–related regional plan. Typically, only new or amended general plan elements, specific plans, and major projects that have the potential to affect the regional population and employment forecasts need to undergo a consistency review.

West Carson TOD Specific Plan

Per CEQA Guideline Section 15206, the West Carson TOD Specific Plan is considered regionally significant by SCAG. Changes in the population, housing, or employment growth projections associated with this project

have the potential to substantially affect SCAG's demographic projections and therefore the assumptions in SCAQMD's AQMP. The propose project would increase the land use intensity within the project site, resulting in an increase in population and employment in West Carson. Because regional transportation modeling is based on the underlying general plan land use designation, the West Carson TOD Specific Plan could potentially change the assumptions of the AQMP.

The AQMP ensures that the region is on track to attain the California and federal AAQS. When a project has the potential to exceed the assumptions of the AQMP because it is more intensive than the underlying land use designation, criteria air pollutants generated during operation of development that would be accommodated by that project are compared to SCAQMD's regional significance thresholds (see Impact 5.2-2 and Impact 5.2-3), which were established to determine whether a project has the potential to cumulatively contribute to the SoCAB's nonattainment designations. Development that would be accommodated by the West Carson TOD Specific Plan would exceed SCAQMD's regional operational thresholds. As a result, the proposed project could potentially exceed the assumptions in the AQMP and would not be considered consistent with the AQMP.

The West Carson Specific Plan would be consistent with SCAG's regional goals of providing infill housing, improving the jobs-housing balance, and integrating land uses near major transportation corridors. Building upon the recommendations of SCAG's regional transportation plan / sustainable communities strategy, the Specific Plan incorporates a mobility and public realm strategy that describes the circulation improvements needed to support TOD in the Specific Plan area. A key component of the Specific Plan is the transformation of the current circulation network, which largely supports vehicular travel, to a network that places a higher priority on the principles of complete streets and multi-modal design. To achieve the West Carson TOD vision, the Specific Plan proposes the following policies:

- Policy 1.1: Implement complete streets designs that contribute to a multi-modal transportation system.
- Policy 1.2: Ensure that roadway improvements allow for easier, safer, and more efficient transit operations, as well as improved passenger safety and accessibility.
- Policy 1.3: Consult with local transit operators to provide attractive and convenient bus stops, including shade/weather protection, seats, transit information, and bus shelters where appropriate.
- Policy 1.4: Consider the interactions between bus and bicyclists and design bus stops that will help minimize conflicts.
- Policy 2.1: Establish a connected pedestrian and bicycle network that links the Metro Silver Line Station, Harbor UCLA Medical Center, residential neighborhoods, local schools, and retail corridors.
- Policy 2.2: Complete bicycle infrastructure improvements that close gaps in the County's Bicycle Master Plan and those providing connections to adjacent communities to enhance regional connectivity.

- Policy 2.3: Identify opportunities to create dedicated bicycle lanes and pedestrian sidewalks that connect the neighborhood and commercial areas to community services.
- Policy 2.4: Establish and maintain attractive and functional sidewalks that maximizes accessibility, enhances the pedestrian environment, and fosters social interaction.
- Policy 2.5: Design bicycle and pedestrian infrastructure in accordance with federal, state, and local design standards, including ADA accessibility standards.
- Policy 3.1: Implement streetscape features such as street lighting, street trees, landscaping, and wayfinding to create safer and attractive corridors.
- Policy 3.2: Integrate pedestrian amenities, such as benches and public art to transform the streetscape and create public space.
- Policy 3.3: Identify new opportunities to incorporate public park and open space improvements within the area that provide small-scale, but well-designed outdoor areas for unstructured play and socializing.
- Policy 4.1: Utilize shared parking where possible and establish guidelines and standards to optimize parking supply.
- Policy 4.2: Encourage and allow shared parking for new development in lieu of the provision of off-street parking spaces.

A key component of the Specific Plan is to improve accessibility to the existing transit system and the overall transit experience. The Specific Plan area encompasses a rich transit network that is serviced by three local transit agencies which includes Metro, Torrance Transit, and Gardena Municipal. To improve transit access and safety, the Specific Plan proposes to coordinate with Metro move the existing transit stop from underneath the Carson Street overpass to a new location along I-110 to enhance visibility of waiting transit patrons and improve safety.

As identified in Section 5.13, *Transportation and Traffic*, implementation of the West Carson TOD Specific Plan would result in a decrease in annual VMT per service population (SP) from 134,863 VMT/SP/Yr to 100,336 VMT/SP/Yr, which is consistent with regional goals to reduce passenger VMT (see Appendix I).

However, despite furthering the regional transportation and planning objectives, the West Carson TOD Specific Plan would represent a substantial increase in emissions compared to existing conditions and would exceed SCAQMD's regional operational significance thresholds (see Impact 5.2-3). As a result, proposed project could potentially exceed the assumptions in the AQMP and would not be considered consistent with the AQMP.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.2-1 would be potentially significant.

Impact 5.2-2: Construction activities associated with buildout of the West Carson TOD Specific Plan could exceed SCAQMD's regional significance thresholds. [Thresholds AQ-2 and AQ-3]

Impact Analysis: A project would normally have a significant effect on the environment if it violates any air quality standard or contributes substantially to an existing or projected air quality violation. Construction activities produce combustion emissions from various sources, such as onsite heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$) from grading, excavation, and demolition. Exhaust emissions from construction onsite would vary daily.

Construction activities would temporarily increase PM_{10}, $PM_{2.5}$, VOC, NO_x, SO_x, and CO regional emissions within the SoCAB. Construction activities associated with buildout of West Carson TOD Specific Plan are anticipated to occur sporadically over approximately 20 years or more. Buildout would comprise multiple smaller projects undertaken by individual developers/project applicants, each having its own construction timeline and activities. Development of multiple properties could occur at the same time; however, there is no defined development schedule for these future projects at this time. For this analysis, the maximum daily emissions are based on a very conservative scenario, where several construction projects throughout the West Carson TOD Specific Plan area would occur at the same time and all construction phases would overlap. The amount of construction assumed is consistent with the approximately 20-year anticipated buildout of the West Carson TOD Specific Plan area. An estimate of maximum daily construction emissions is provided in Table 5.2-8, *Estimate of Regional Construction Emissions in the West Carson TOD Specific Plan*. The modeled emissions shown account for compliance with RR AIR-3, which requires compliance with SCAQMD Rules 403 and 1113.

Table 5.2-8 Estimate of Regional Construction Emissions in the West Carson TOD Specific Plan

Source	Criteria Air Pollutants (pounds per day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Demolition[3]	4	46	25	<1	5	2
Site Preparation	6	83	31	<1	12	7
Grading[4]	5	60	36	<1	7	4
Building Construction	5	49	35	<1	5	2
Paving	2	18	16	<1	1	1
Architectural Coatings	41	2	4	<1	1	0
Maximum Daily Emissions[5]	63	258	147	<1	30	17
SCAQMD Regional Construction Threshold	75	100	550	150	150	55
Significant?	No	Yes	No	No	No	No

Source: CalEEMod 2016.3.1.
Note: Totals may not add up to 100 percent due to rounding.
1 Construction equipment mix is based on CalEEMod default construction mix. See Appendix D for a list of assumptions on emissions generated on a worst-case day.
2 Per RR AIR-3, grading includes compliance with SCAQMD Rule 403 fugitive dust control measures. Measures include requiring an application of water at least twice per day to at least 80 percent of the unstabilized disturbed onsite surface areas, replacing disturbed ground cover quickly, and restricting speeds on unpaved roads to less than 15 miles per hour. Modeling also assumes a VOC of 50 g/L for interior and 100 g/L for exterior paints pursuant to SCAQMD Rule 1113.
3 Assumes up to approximately 985,977 building square feet of the existing structures would be demolished.
4 Assumes up to 100,000 cubic yards of soil haul could be required.
5 Based on overlap of the all phases.

As shown in the table, construction activities associated with the proposed project could potentially exceed the SCAQMD regional thresholds for NO_X. The primary source of NO_X emissions is exhaust from vehicles and construction equipment. NO_X is a precursor to the formation of both O_3 and particulate matter (PM_{10} and $PM_{2.5}$). Project-related emissions of NO_X would contribute to the O_3, NO_2, PM_{10}, and $PM_{2.5}$ nonattainment designations of the SoCAB. Therefore, project-related construction activities would result in significant regional air quality impacts. Because cumulative development within West Carson TOD Specific Plan would exceed the regional significance thresholds, construction of the proposed project could contribute to an increase in health effects in the basin until such time as the attainment standard are met.

Level of Significance before Mitigation: Based on the analysis above, upon implementation of regulatory requirements, Impact 5.2-2 would be potentially significant.

Impact 5.2-3: Long-term operation of the West Carson TOD Specific Plan would generate emissions that would exceed SCAQMD's regional significance thresholds. [Thresholds AQ-2 and AQ-3]

Impact Analysis: Buildout of West Carson TOD Specific Plan would result in direct and indirect criteria air pollutant emissions from transportation, energy (natural gas use), and area sources (e.g., natural gas fireplaces, aerosols, landscaping equipment). The proposed project would result in a net increase of 2,170 dwelling units, 100 transitional housing units at the Harbor UCLA Medical Center, and 1,704,985 million nonresidential square feet, resulting in an increase in 7,024 residents and 3,592 employees in the plan area. Development that would be accommodated by the Specific Plan would generate a net increase of 29,488 weekday average daily trips ends, resulting in 325,052 additional daily VMT at project buildout (see Appendix I). For the purpose of this EIR, buildout is assumed over a 20-year project horizon. The results of the CalEEMod modeling are included in Table 5.2-9, *Maximum Daily West Carson TOD Specific Plan Operational Phase Regional Emissions.*

Table 5.2-9 Maximum Daily West Carson TOD Specific Plan Operational Phase Regional Emissions

	Criteria Air Pollutants (lbs/day)					
Source	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
No Project (Existing) 2035						
Area	378	23	450	1	48	48
Energy	2	13	7	<1	1	1
Mobile Sources	29	155	436	2	248	67
Total Emissions	408	191	893	3	298	116
Proposed Project						
Area	387	62	559	1	39	39
Energy	3	23	13	<1	2	2
Mobile Sources	61	333	890	5	501	136
Total Emissions	451	718	1,462	6	542	177
Net Change						
Area	9	38	109	<1	(-9)	(-9)
Energy	1	10	6	<1	1	1
Mobile Sources	32	178	455	2	253	68
Total Emissions	42	227	569	3	245	60
SCAQMD Regional Threshold	55	55	550	150	150	55
Exceeds Regional Threshold?	No	Yes	Yes	No	Yes	Yes
Combined Construction + Operation (Worst-Case)						
Combined Construction + Operation	105	484	716	3	275	78
SCAQMD Regional Threshold	55	55	550	150	150	55
Significant?	Yes	Yes	Yes	No	Yes	Yes

Source: CalEEMod Version 2016.3.1.
Note: Highest winter or summer emissions are reported. Totals may not add up to 100 percent due to rounding.

As shown in the table, the operation phase of the West Carson TOD Specific Plan at buildout would generate air pollutant emissions that exceed SCAQMD's regional significance thresholds for criteria air pollutant emissions, except SO_X. Construction of the new residential and nonresidential uses would be based on market-demand and would be constructed over the approximately 20-year project buildout; therefore, emissions from construction activities could add to the total emissions during early phases (see Table 5.2-8). Table 5.2-9 shows maximum daily emissions at buildout once construction is complete and during a worst-case year from overlap of the project with construction. Emissions of VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ that exceed the SCAQMD regional threshold would cumulatively contribute to the O_3 nonattainment designation of the SoCAB. Therefore, implementation of the West Carson TOD Specific Plan would result in a significant impact because it would significantly contribute to the nonattainment designations of the SoCAB. Because cumulative development within the West Carson TOD Specific Plan would exceed the regional significance thresholds, operation of the proposed project could contribute to an increase in health effects in the basin.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.2-2 would be potentially significant.

Impact 5.2-4: Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-4]

Impact Analysis: Development that would be accommodated by the West Carson TOD Specific Plan could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevating those levels. Unlike the mass of construction emissions shown in Table 5.2-8, described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or μg/m3) and can be correlated to potential health effects. LSTs are the amount of project-related emissions at which localized concentrations (ppm or $\mu g/m^3$) would exceed the AAQS for criteria air pollutants for which the SoCAB is designated a nonattainment area.

Criteria Air Pollutants and Health Risk

SCAQMD currently does not require health risk assessments to be conducted for construction activities. Emissions from construction equipment primarily consist of diesel particulate matter (DPM). The Office of Environmental Health Hazards Assessment (OEHHA) has adopted new guidance for the preparation of health risk assessments issued in March 2015. OEHHA has developed a cancer risk factor and non-cancer chronic reference exposure level for DPM, but these factors are based on continuous exposure over a 30-year time frame. No short-term acute exposure levels have been developed for DPM.

Table 5.2-8 provides an estimate of the magnitude of criteria air pollutant emissions generated by the development that would be accommodated by the West Carson TOD Specific Plan for each construction subphase. Buildout of the proposed project would occur over a period of approximately 20 years or longer and would comprise several smaller projects with their own construction time frames and construction equipment. Concentrations of criteria air pollutants and DPM generated by a development project depend on the emissions generated onsite and the distance to the nearest sensitive receptor. Therefore, an LST and health risk analysis can only be conducted at a project level, and quantification of LSTs and health risk is not applicable for this program-level environmental analysis. Because potential redevelopment could occur close to existing sensitive receptors, the development that would be accommodated by the West Carson TOD Specific Plan has the potential to expose sensitive receptors to substantial pollutant concentrations. Construction equipment exhaust combined with fugitive particulate matter emissions have the potential to expose sensitive receptors to substantial concentrations of criteria air pollutant emissions or DPM and result in a significant impact.

Valley Fever

Valley Fever is an infectious disease caused by the fungus *Coccidioides immitis* and *Coccidioides psadasii*. According to the County Department of Public Health, this fungus is a major cause of community-acquired pneumonia in the southwestern United States. Valley Fever fungus is most prevalent in the San Joaquin Valley and the Central Valley, where land is arid to semi-arid and receives moderate rainfall (5 to 20 inches per year). Several factors indicate a project's potential to expose sensitive receptors to Valley Fever: disturbance of the topsoil of undeveloped land, dust storms, strong winds, earthquakes, archaeological digs, agricultural activities, and construction activities. There is the potential that construction activities could result in exposure of sensitive receptors to Valley Fever in the arid, desert portions of the unincorporated areas, including the Project Area.

Individual projects developed under the Proposed Project would be required to reduce potential risk of exposing sensitive receptors to Valley Fever through implementation of SCAQMD fugitive dust control measures. SCAQMD dust control rules would reduce fugitive dust emissions as well as exposure to on-site workers. Implementation of SCAQMD measures would limit exposure of sensitive receptors to Valley Fever.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.2-4 would be potentially significant.

Impact 5.2-5: Operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-4]

Impact Analysis: Operation of new land uses consistent with the land use plan of the project would generate new sources of criteria air pollutants and TACs. The following describes potential localized operational air quality impacts from the implementation of the West Carson TOD Specific Plan.

Onsite Stationary and Area Sources Emissions

Operation of residential and nonresidential structures in the West Carson TOD Specific Plan would include occasional use of landscaping equipment, natural gas consumption for heating, and nominal truck idling for vendor deliveries. The proposed project would permit residential, commercial, and office land uses and would not involve warehousing or similar uses where substantial truck idling could occur onsite. Onsite emissions from the residential and nonresidential uses from onsite energy use (natural gas used for cooking and water heating) and other onsite sources (e.g., landscaping fuel, aerosols) would not generate substantial concentrations of emissions or exacerbate existing health risk in the area.

Industrial and Other Land Uses Requiring a SCAQMD Permit

Certain types of land uses have the potential to generate substantial stationary and area sources of emissions. Land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from SCAQMD include industrial land uses, such as chemical processing facilities, dry cleaners, and gasoline-dispensing facilities. Operators of certain types of facilities must submit emissions inventories. The Air Toxics Program categorizes priority for each facility as high, intermediate, or low based on the potency, toxicity, quantity, and volume of its emissions. If the risks are above established levels, facilities are required to notify surrounding populations and to develop and implement a risk reduction plan. In addition to stationary/area sources of TACs, warehousing and trucking facilities could generate a substantial amount of diesel particulate matter emissions from off-road equipment use and truck idling. The Specific Plan's Industrial Flex District is intended to transition the West Carson area from traditional, small-scale light industrial uses to a broader range of uses to serve the community, including service commercial uses, professional and medical office, and multifamily residential. Consequently, the West Carson TOD Specific Plan would generally not result in an increase in industrial land uses that would generate substantial stationary or area sources of emissions.

Mobile Source Emissions: CO Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9.0 ppm. At the time of the 1993 SCAQMD Handbook, the SoCAB was designated nonattainment under the California AAQS and National AAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the state have steadily declined. In 2007, the SCAQMD was designated in attainment for CO under both the California AAQS and National AAQS.[8] Furthermore, 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 2017). Buildout of the West Carson TOD Specific Plan would result in approximately 51,955 average daily trips, which would be an increase of approximately 29,488 total daily vehicle trips over existing conditions. Distributing the total daily vehicle trips within the Specific Plan Area and only during peak hours would result in smaller traffic volumes at the various intersections. Thus, implementation of the West Carson TOD Specific Plan would not produce the volume of traffic required to generate a CO hotspot. Therefore, implementation of the proposed project would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the planning area, and impacts would be less than significant.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.2-5 would be less than significant.

Impact 5.2-6: The proposed project would not create objectionable odors. [Threshold AQ-5]

Impact Analysis: The proposed project would not emit objectionable odors that would affect a substantial number of people. The threshold for odor is if a project creates an odor nuisance pursuant to 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.

The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating

[8] As identified in SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide, peak carbon monoxide concentrations in the SoCAB were the result of unusual meteorological and topographical conditions and not of congestion at a particular intersection.

operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities.

Odors generated by new nonresidential land uses are not expected to be significant or highly objectionable. New industrial uses would be required to be in compliance with SCAQMD Rule 402. Likewise, existing facilities are required to be in compliance with SCAQMD Rule 402 to prevent nuisances on sensitive land uses. Therefore, impacts related to objectionable odors would be less than significant.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.2-6 would be less than significant.

5.2.6 Cumulative Impacts

In accordance with the SCAQMD methodology, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment contributes to the cumulative impact. Cumulative projects in the local area include new development and general growth within the SoCAB. The greatest source of emissions within the SoCAB is mobile sources. Due to the extent of the area potentially impacted from cumulative project emissions, SCAQMD considers a project cumulatively significant when project-related emissions exceed the SCAQMD regional emissions thresholds shown in Table 5.2-5, *SCAQMD Significance Thresholds*.

Construction

The SoCAB is designated nonattainment for O_3, $PM_{2.5}$, and lead (Los Angeles County only) under the California and National AAQS and nonattainment for PM_{10} under the California AAQS. Construction of cumulative projects would further degrade the regional and local air quality. Air quality would be temporarily impacted during construction activities. Implementation of mitigation measures for related projects would reduce cumulative impacts. However, project-related construction emissions could still potentially exceed the SCAQMD significance thresholds on a project and cumulative basis. Consequently, the proposed project's contribution to cumulative air quality impacts would be cumulatively considerable and therefore would be significant.

Operation

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by SCAQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. Operation of the proposed project would result in emissions in excess of the SCAQMD regional emissions thresholds for VOC, CO, NO_X, PM_{10}, and $PM_{2.5}$ for long-term operation and would cumulatively contribute to the nonattainment designations of the SoCAB. Therefore, the proposed project's air pollutant emissions would be cumulatively considerable and therefore significant.

5.2.7 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, some impacts would be less than significant: 5.2-5 and 5.2-6.

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.2-1** Criteria air pollutant emissions associated with an increase in population and employment growth within the West Carson TOD Specific Plan has the potential to affect the assumptions of SCAQMD Air Quality Management Plan.
- **Impact 5.2-2** Construction activities associated with buildout of the West Carson TOD Specific Plan could exceed SCAQMD's regional significance thresholds.
- **Impact 5.2-3** Long-term operation of the West Carson TOD Specific Plan would generate emissions that would exceed SCAQMD's regional significance thresholds
- **Impact 5.2-4** Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations

5.2.8 Mitigation Measures

Impact 5.2-1

RRs AIR-1 through AIR-4, PDFs AIR-1 through AIR-8, and Mitigation Measures AQ-1 through AQ-5 (for Impacts 5.2-2 and 5.2-3) would reduce the proposed project's regional construction-related and operational-phase criteria air pollutant emissions to the extent feasible to minimize potential conflicts with the SCAQMD AQMP. However, no mitigation measures are available that would reduce impacts associated with inconsistency with the air quality management plans due to the magnitude of growth and associated emissions that would be generated by the buildout of West Carson TOD Specific Plan.

Impact 5.2-2

AQ-1 Applicants for new development projects within the West Carson TOD Specific Plan shall require the construction contractor to use equipment that meets the US Environmental Protection Agency (EPA) Tier 4 emissions standards for off-road diesel-powered construction equipment with more than 50 horsepower, unless it can be demonstrated to the County of Los Angeles that such equipment is not available. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 4 diesel emissions control strategy for a similarly sized engine, as defined by the California Air Resources Board's regulations.

Prior to construction, the project engineer shall ensure that all demolition and grading plans clearly show the requirement for EPA Tier 4 or higher emissions standards for construction

equipment over 50 horsepower. During construction, the construction contractor shall maintain a list of all operating equipment in use on the construction site for verification by the County of Los Angeles. The construction equipment list shall state the makes, models, and numbers of construction equipment onsite. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449.

AQ-2 Applicants for new development projects within the West Carson TOD Specific Plan shall require the construction contractor to prepare a dust control plan and implement the following measures during ground-disturbing activities—in addition to the existing requirements for fugitive dust control under South Coast Air Quality Management District (SCAQMD) Rule 403—to further reduce PM_{10} and $PM_{2.5}$ emissions. The County of Los Angeles shall verify that these measures have been implemented during normal construction site inspections.

- Following all grading activities, the construction contractor shall reestablish ground cover on the construction site through seeding and watering.
- During all construction activities, the construction contractor shall sweep streets with SCAQMD Rule 1186–compliant, PM_{10}-efficient vacuum units on a daily basis if silt is carried over to adjacent public thoroughfares or occurs as a result of hauling.
- During all construction activities, the construction contractor shall maintain a minimum 24-inch freeboard on trucks hauling dirt, sand, soil, or other loose materials and shall tarp materials with a fabric cover or other cover that achieves the same amount of protection.
- During all construction activities, the construction contractor shall water exposed ground surfaces and disturbed areas a minimum of every three hours on the construction site and a minimum of three times per day.
- During all construction activities, the construction contractor shall limit onsite vehicle speeds on unpaved roads to no more than 15 miles per hour.

Impact 5.3-3

Stationary Source

AQ-3 Prior to issuance of a building permit for new development projects within the West Carson TOD Specific Plan, the property owner/developer shall show on the building plans that all major appliances (dishwashers, refrigerators, clothes washers, and dryers) to be provided/installed are Energy Star appliances. Installation of Energy Star appliances shall be verified by the County of Los Angeles prior to issuance of a certificate of occupancy.

Transportation and Motor Vehicles

AQ-4 Prior to issuance of building permits for residential development projects within the West Carson TOD Specific Plan, 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 County of Los Angeles 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.

AQ-5 Prior to issuance of building permits for nonresidential development projects within the West Carson TOD Specific Plan, 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 County of Los Angeles 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 nonresidential building with 30 or more parking spaces. Installation shall be consistent with Section A5.106.5.3 (Nonresidential Voluntary Measures) of the CALGreen Code.

Impact 5.3-4

Mitigation measures applied for Impact 5.2-2 would also reduce the proposed project's localized construction-related criteria air pollutant emissions to the extent feasible.

5.2.9 Level of Significance After Mitigation

Impact 5.2-1

PDF AIR-1 through PDF AIR-8, West Carson TOD Specific Plan policies, and RR AIR-1 through RR-AIR-4 would minimize criteria air pollutant emissions from construction and operation of the proposed project. Mitigation measures applied for Impact 5.2-2 and Impact 5.2-3 would reduce the proposed project's regional construction-related and operational-phase criteria air pollutant emissions to the extent feasible. However, given the potential increase in growth and associated increase in criteria air pollutant emissions, the proposed project would continue to be potentially inconsistent with the assumptions in the AQMP. Therefore, Impact 5.2-1 would remain **significant and unavoidable**.

Impact 5.2-2

Construction activities associated with the buildout of the project would generate criteria air pollutant emissions that would exceed SCAQMD's regional significance thresholds, contribute to the nonattainment designations of the SoCAB, and contribute to known health effects from poor air quality—including worsening of bronchitis, asthma, and emphysema; a decrease in lung function; premature death of people with heart or lung disease; nonfatal heart attacks; irregular heartbeat; decreased lung function; and increased respiratory symptoms. RR AIR-3 through RR AIR-4 would minimize criteria air pollutant emissions from construction equipment exhaust and fugitive dust through compliance with CARB and SCAQMD rules. Mitigation Measures AQ-1 and AQ-2 would reduce criteria air pollutants generated by project-related construction activities. Buildout of the proposed project would occur over a period of approximately 20 years or longer. Construction time frames and equipment for individual site-specific projects are not available at this time. There is a potential for multiple developments to be constructed at any one time, resulting in significant construction-related emissions. Therefore, despite adherence to Mitigation Measures AQ-1 and AQ-2, project-level and cumulative impacts under Impact 5.2-2 would remain **significant and unavoidable**.

Impact 5.2-3

Buildout of the proposed land use plan would generate additional vehicle trips and area sources of criteria air pollutant emissions that exceed SCAQMD's regional significance thresholds and would contribute to the nonattainment designations of the SoCAB and known health effects from poor air quality—including worsening of bronchitis, asthma, and emphysema; a decrease in lung function; premature death of people with heart or lung disease; nonfatal heart attacks; irregular heartbeat; decreased lung function; and increased respiratory symptoms. RR AIR-1 and RR AIR-2 would minimize criteria air pollutant emissions from transportation and energy use by requiring mandatory measures of CALGreen as well as additional voluntary green building standards of CALGreen for nonresidential buildings 25,000 square feet and larger. Additionally, PDFs AIR-1 through AIR-8 identify Specific Plan components that integrate land use and transportation strategies to reduce VMT per service population. Incorporation of Mitigation Measures AQ-3 through AQ-5 would reduce operation-related criteria air pollutants generated by stationary and mobile sources. Mitigation Measures AQ-4 and AQ-5 would encourage and accommodate use of alternative-fueled vehicles and nonmotorized transportation. However, despite adherence to Mitigation Measures AQ-3 through AQ-5, project-level and cumulative impacts identified under Impact 5.2-3 would remain **significant and unavoidable** due to the magnitude of land use development associated with the proposed project.

Impact 5.2-4

RR AIR-3 through RR AIR-4 would minimize criteria air pollutant emissions from construction equipment exhaust and fugitive dust through compliance with CARB and SCAQMD rules. Mitigation Measures AQ-1 and AQ-2 (applied for Impact 5.2-2) would reduce the proposed project's regional construction emissions and therefore also reduce the project's localized construction-related criteria air pollutant and DPM emissions to the extent feasible. However, because existing sensitive receptors may be close to project-related construction activities, construction emissions generated by individual development projects have the potential to exceed SCAQMD's LSTs (criteria air pollutants and health risk). Because of the scale of

development activity associated with buildout of the project, for this broad-based program EIR analysis, it is not possible to determine whether the scale and phasing of individual projects would result in the exceedance of the localized emissions and health risk thresholds and contribute to known health effects. Therefore, project-level and cumulative impacts under Impact 5.2-4 would remain **significant and unavoidable**.

5.2.10 References

Bay Area Air Quality Management District (BAAQMD). 2017, May. California Environmental Quality Act Air Quality Guidelines.

California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model (CalEEMod). Version 2016.3.1. Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

California Air Resources Board (CARB). 1998, April 22. The Report on Diesel Exhaust. http://www.arb.ca.gov/toxics/dieseltac/de-fnds.htm.

———. 1999, December. Final Staff Report: Update to the Toxic Air Contaminant List.

———. 2005, May. Air Quality and Land Use Handbook: A Community Health Perspective.

———. 2016a, May 4. Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

———. 2016b, May 5. Area Designations Maps/State and National. http://www.arb.ca.gov/desig/desig.htm.

———. 2017. Air Pollution Data Monitoring Cards (2011, 2012, 2013, 2014, and 2015), Accessed April 6, 2017, http://www.arb.ca.gov/adam/topfour/topfour1.php.

IBI Group. 2017, June 9. West Carson TOD Traffic Impact Study.

Office of Environmental Health Hazard Assessment (OEHHA). 2015, February. Air Toxics Hot Spots Program Risk Assessment Guidelines. In *Guidance Manual for Preparation of Health Risk Assessments*. http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf.

South Coast Air Quality Management District (SCAQMD). 1993. *California Environmental Quality Act Air Quality Handbook*.

———. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. http://www.aqmd.gov/home/library/documents-support-material/planning-guidance/guidance-document.

———. 2008a, July. Final Localized Significance Threshold Methodology.

———. 2008b, September. Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES III). http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iii.

———. 2012, May 4. 2012 Lead State Implementation Plan, Los Angeles County. Revised Draft. http://www.aqmd.gov/aqmp/Lead_SIP/RvsdDraftLeadSIP.pdf.

———. 2013, February. 2012 Final Air Quality Management Plan. http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan.

———. 2015a, May. Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES IV) Final Report. http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7.

———. 2015b, March (revised). SCAQMD Air Quality Significance Thresholds. http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

———. 2015c. Health Effects of Air Pollution. http://www.aqmd.gov/home/library/public-information/publications.

———. 2015d, October. "Blueprint for Clean Air: 2016 AQMP White Paper." Prepared by Air Quality Management Plan Advisory Group. http://www.aqmd.gov/home/about/groups-committees/aqmp-advisory-group/2016-aqmp-white-papers.

———. 2017a, March 4. Final 2016 Air Quality Management Plan. http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp.

———. 2017b. Updates to CEQA Air Quality Handbook. *Air Quality Analysis Handbook*. Accessed April 6, 2017. http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

United States Environmental Protection Agency (USEPA). 2017. Criteria Air Pollutants. https://www.epa.gov/criteria-air-pollutants.

Western Regional Climate Center (WRCC). 2017. Western U.S. Climate Summaries: Torrance AP, California, Monitoring Station (Station ID No. 048973). Accessed April 6, 2017. http://www.wrcc.dri.edu/summary/Climsmsca.html.

5.3 CULTURAL RESOURCES

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the West Carson TOD Specific Plan to impact cultural resources in the community of West Carson. Cultural resources comprise paleontological, archaeological, and historical resources. Paleontological resources are the fossilized remains of plants and animals. Archaeology is the branch of paleontology that studies human artifacts, such as places, objects, and settlements that reflect group or individual religious, cultural, or everyday activities. Historical resources include sites, structures, objects, or places that are at least 50 years old and are significant for their engineering, architecture, cultural use or association, etc. In California, historical resources cover human activities over the past 12,000 years. Cultural resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements. The analysis in this section is based in part on the following information:

- *Cultural Resources Overview and Assessment: The City of Los Angeles, West Carson Transit Oriented District (TOD) Specific Plan Project Area, Los Angeles County, California*, McKenna et al., August 28, 2016.

A complete copy of this study is included in the Technical Appendices of this Draft EIR (Volume II, Appendix E).

5.3.1 Environmental Setting

5.3.1.1 RELEVANT PROGRAMS AND REGULATIONS

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 coordinates public and private efforts to identify, evaluate, and protect the nation's historic and archaeological resources. The act authorized the National Register of Historic Places, which lists districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

Section 106 (Protection of Historic Properties) of the act requires federal agencies to take into account the effects of their undertakings on historic properties. Section 106 Review ensures that historic properties are considered during federal project planning and implementation. The Advisory Council on Historic Preservation, an independent federal agency, administers the review process with assistance from state historic preservation offices.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 regulates the protection of archaeological resources and sites on federal and Indian lands.

Native American Graves Protection and Repatriation Act

NAGPRA is a federal law passed in 1990 that mandates museums and federal agencies to return certain Native American cultural items—such as human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants or culturally affiliated Indian tribes.

State

California Public Resources Code

Archaeological, paleontological, and historical sites are protected under a wide variety of state policies and regulations in the California Public Resources Code. In addition, cultural and paleontological resources are recognized as nonrenewable resources and receive protection under the Public Resources Code and California Environmental Quality Act (CEQA).

- **California Public Resources Code Sections 5020–5029.5** continued the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. The commission oversees the administration of the California Register of Historical Resources and is responsible for the designation of State Historical Landmarks and Historical Points of Interest.

- **California Public Resources Code Sections 5079–5079.65** define the functions and duties of the Office of Historic Preservation, which is responsible for the administration of federal- and state-mandated historic preservation programs in California and the California Heritage Fund.

- **California Public Resources Code Sections 5097.9–5097.991** provide protection to Native American historical and cultural resources and sacred sites and identify the powers and duties of the Native American Heritage Commission. They also require notification to descendants of discoveries of Native American human remains and provide for treatment and disposition of human remains and associated grave goods.

Local

Los Angeles County Historic Preservation Ordinance

The Los Angeles County Historic Preservation Ordinance (Los Angeles County Code, Title 22, Part 28, Chapter 22.52) became effective in October 2015 that generally applies to all private property in the unincorporated County area and to County-owned landmarks. The ordinance provides a process to nominate a landmark or historic district at the County level. The Board of Supervisors may designate any County-owned property as a landmark if it determines that the property satisfies applicable criteria, which are similar to the eligibility criteria for the state's register of historic resources.

5.3.1.2 EXISTING CONDITIONS

Natural Setting

Geologically, the West Carson TOD Specific Plan area is in the western and southwestern block of the Los Angeles Basin, which is part of the Peninsular Range Geomorphic Province of California. The Los Angeles Basin is a coastal plain extending from the Pacific Ocean on the south to the Santa Monica Mountains and Puente Hills on the north. It consists of thousands of meters of post-Jurassic sediment overlying crystalline basement rocks. The distinguishing feature of the southwestern block of the basin is the basement rocks that belong to the Franciscan Formation and are chiefly green chlorite and blue glaucophane schists.

The project area is west of the Los Angeles River channel and the Newport-Inglewood Fault. The loose, sandy deposits of the older and younger Quaternary Alluvium are subject to liquefaction and ground failures (sinking/rising/expanding, etc.), but less likely to result in landslides given the flat terrain. The natural setting of the project area is considered a coastal plain/coastal sage scrub biotic environment. At this time, given the extent of urban development, the native vegetation and coastal sage scrub community are no longer evident.

Cultural Setting

Historical Resources

Prehistoric Period

The project area is well within the present-day Los Angeles Basin and associated with the traditional territory of the prehistoric and protohistoric Native American populations generally referred to as the Gabrieliño/Tongva. The Gabrieliño/Tongva society is identified by Late Prehistoric/Protohistoric ethnographic records, and archaeological data identify Late Prehistoric occupation of Southern California.

The term Gabrieliño refers to Native American populations that were under the jurisdiction of the Mission San Gabriel de Archangel. Mission San Gabriel serviced the entire Los Angeles Basin and into the San Bernardino area. The present-day City of Los Angeles is somewhat centrally located in the ethnographic boundaries for the Gabrieliño, and the core area of the Los Angeles Basin was the site of the historical City of Los Angeles and the ethnographic village of Yangna. Following the founding of the Pueblo de Los Angeles, a large Catholic church (Church of Our Lady the Queen of the Angels) was constructed to service the small but sedentary population of the pueblo, including Native Americans and early European settlers (primarily Spanish/Mexican, but also many others). Evidence of the prehistoric occupation of the area, including the village of Yangna, has been sporadically identified, and the native populations became known as Gabrieliños. The project area is in the inland areas of Gabrieliño territory.

Historic Period

The earliest known records of European contact with Southern California Native Americans date to the mid-1500s, representing the early explorations of the Spanish. These explorations resulted in the identification of populations from the ships but did not include direct contact.

In the 1770s, the Spanish padres, under the direction of Junipero Serra, began the process of establishing a series of missions throughout Alta California, as California was then known. The project area is within the boundaries of lands historically held by the Mission San Gabriel de Archangel. The Mission continued to hold these large tracts until the Mexican government declared its independence from Spain and issued orders for the secularization of the missions around 1824.

In this case, the project area is within the boundaries of land claimed by the historic Mission San Gabriel de Archangel. Following the Mission Period, lands originally controlled by the Catholic Church (in this case, the Mission San Gabriel de Archangel) were re-issued as "ranchos" and granted to individuals recognized by the Spanish or Mexican governments. The project area has been identified as being within the boundaries of the historical Rancho San Pedro (Dominguez).

Rancho San Pedro was an early rancho granted in 1822 by Governor Sola top Christobal Dominguez. It was only the fourth rancho granted under Spanish rule. The US government confirmed this rancho subsequent to the acquisition of California. Research of the Bureau of Land Management General Land Office Records also confirmed the project area is within the Rancho San Pedro. This particular area of unincorporated Los Angeles County has been referred to as West Carson, but is also associated with nearby Torrance and Dominquez Hills.

Historical Subdivisions

A review of County Assessor maps confirmed the project area was covered, in part, in three Assessor books: 7344, 7345, and 7348.

- **Assessor Book 7344.** The subdivisions associated with Assessor Book 7344 included two subdivisions within the Victoria Dominguez de Carson property dated to 1919 and 1920. Early improvements were identified on 223rd Street, west of Vermont Avenue (1920s multifamily residential improvements); a commercial improvement on 223rd Street, east of Meyler Street (nursery with a 1928 residence); and early developments on 222nd Street and Jay Street, east of Meyler Street. Other early improvements in this area date to 1922 and 1929. These improvements are all within the 1919 Victoria Dominguez de Carson subdivision.

  The core area of the Harbor-UCLA Medical Center was a post-1960s improvement cluster. However, in the areas to the west and south of the larger hospital complex, earlier buildings were noted and, in conducting research into the origin of these earlier structures, it was confirmed the area was originally developed as a World War II medical facility. The medical buildings became Los Angeles County Harbor General Hospital, and in 1946 the hospital was dedicated to serve the indigent and the emergency medical care needs of the County's exploding postwar population. In 1951, an affiliation between Harbor General Hospital and the newly founded UCLA School of Medicine was realized, predating by several years the opening of the UCLA Medical Center on the Westwood campus. Financed by a $15.4 million bond measure overwhelmingly passed by Los Angeles County voters, construction of a new acute care facility was begun in 1960 and completed in 1963 as a 553-bed hospital that in 1978 was renamed Harbor-UCLA Medical Center. Today, Harbor-UCLA Medical Center serves a catchment area of

approximately 2 million citizens and offers a full spectrum of tertiary care in all medical and surgical specialties.

The area still exhibits the general characteristics of the 1940s complex and is representative of a period significant to the war effort and the postwar development of this area of Los Angeles County.

Based on the research for the area of Assessor Book 7344 (limited to the project area), the research concluded that Harbor-UCLA Medical Center exhibits elements of the 1940s military hospital, and areas to the south and west of the hospital have shown limited evidence of pre-1930s improvements.

- **Assessor Book 7345.** Assessor Book 7345 covers the portion of the project area bounded by Normandie Avenue (west), Interstate 110 (I-110; east), Carson Street (south), and Javelin Street (north). Twenty-four subdivision maps cover this area. Of these, two date to 1920 and 1923, including a portion of the Victoria Dominguez de Carson subdivision and a portion of the Ana Josefa Dominguez de Guyer subdivision. No other subdivision appears until after World War II (after 1948) until recently (2001) with condominium developments.

  A review showed that the properties in this particular area are all post-1948, and while many could be considered historic (by age; pre-1965), they tend to represent early tract home developments dominated by California Ranch–style single-family residences. Some of the late 1940s residences resemble cottages or bungalows. Many residences reflect their original designs, but others have been significantly altered.

  The only commercial building was on the north side of West Carson Street, east of Budlong Avenue (1029 West Carson Street) and the few commercial structures to the east of this building. According to the County Assessor, commercial buildings at 1019 and 1029 Carson Street were constructed in 1969, and the commercial building at 1017 Carson Street was constructed in 1959. Despite these recorded ages, the structures appear to represent earlier development, and the dates listed by the Assessor may be dates of significant alteration. Architecturally, the building at 1019 Carson Street appears to have been a smaller structure in the past, possibly a small gas station. Additions to the north side have almost doubled the size of the building.

  The Van Deene Street Elementary School at Van Deene and Javelin Streets is considered a standard 1950s elementary school with the addition of modular units to manage the population of students.

  There are no commercial improvements to the west of the Vermont Avenue frontage. The majority of improvements on Vermont Avenue are commercial/industrial sites and many are modern. To the east, between Vermont Avenue and I-110, two trailer parks provide low-cost housing.

  Overall, this area yielded no significant evidence of historical resources and is considered an area of ineligible properties.

- **Assessor Book 7348.** Assessor Book 7348 covers a relatively small area north of Javelin Street, south of Torrance Boulevard, east of New Hampshire Avenue, and west of I-110 (Figure 10). This area is part of the Ana Josefa Dominguez de Guyer subdivision around 1923, with no further subdivisions until 1957,

indicating the residential developments in this area postdate 1957. The area is dominated by early tract home development with California Ranch–style architectural designs. None of these residences are considered historically significant.

Archaeological Resources

An archaeological records search was conducted through the California State University, Fullerton, South Central Coastal Information Center. This research was conducted to understand the extent of previous studies and the potential for the area to yield additional evidence of cultural resources. The records search was conducted out to a half mile from the peripheries of the Specific Plan area.

This search identified 62 cultural resource investigations—the majority involving small cell tower locations—and 5 of the 62 studies were within the boundaries of the Specific Plan: LA-00122, LA-03956, LA-5331, LA-09626, and LA-11482. One of these studies was not available, two were cell tower sites, one was a study of the adjacent I-110, and one was a general overview addressing known prehistoric sites in the general area.

Overall, the entire project area can be considered unsurveyed prior to this investigation, since the areas addressed actually equate to only two cell tower locations. The Harbor-UCLA Medical Center has not been subjected to any historic assessments.

Prehistoric Archaeological Resources

The archaeological records search also identified the presence of two prehistoric archaeological sites: CA-LAN-88 and CA-LAN-106, although neither is within the boundaries of the project area.

- CA-LAN-88: A cluster of small sites around the borders of Lagunas de los Dominguez south of Gardena. The sites were difficult to identify, and the investigation reported few artifacts.

- CA-LAN-106: A shell midden site with some flaked stone tools.

Paleontological Resources

The project area is composed of surficial deposits of younger Quaternary Alluvium, derived primarily as alluvial fan deposits from the slightly elevated terrain to the west, but also possibly as fluvial deposits derived from the drainage in the northern portion of the project area that flows toward the Dominguez Channel. Older Quaternary deposits underlie the project area at various depths. These deeper deposits have been associated with fossil specimens (camel, horse, etc.) at significant depths—up to 35 feet below the current surface. Shallow earth moving is not expected to impact fossil bearing deposits; however, deeper excavations (15 to 18 feet below the present surface) are likely to be sensitive for the presence of significant fossil remains.

A paleontological overview for the project area was prepared by the Natural History Museum of Los Angeles County and confirmed that the project area consists primarily of younger Quaternary alluvium deposits and has not yielded evidence of significant fossil specimens. Nevertheless, the area is underlain by older Quaternary deposits that have been known to yield evidence of camel and horse fossils. Other specimens

further north include mammoth, squirrel, horse, antelope, pond turtle, puffin, turkey, ground sloth, dire wolf, rabbit, deer mouse, pocket gopher, deer, and bison.

5.3.2 Thresholds of Significance

CEQA Guidelines Section 15064.5 provides direction on determining significance of impacts to archaeological and historical resources. Generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources:

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

The fact that a resource is not listed in the California Register of Historical Resources, not determined to be eligible for listing, or not included in a local register of historical resources does not preclude a lead agency from determining that it may be a historical resource.

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

C-1 Cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5.

C-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

C-3 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or contain rock formations indicating potential paleontological resources.

C-4 Disturb any human remains, including those interred outside of formal cemeteries.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold C-4

This impact will not be addressed in the following analysis.

Per Assembly Bill 52, tribal cultural resources, as defined in Public Resources Code Section 21074, must be analyzed in a separate EIR section. Thus, Threshold C-5 is analyzed in Section 5.14, *Tribal Cultural Resources*, of this DEIR.

5.3.3 Plans, Programs, and Policies

There are no applicable project design features or regulatory requirements related to cultural resources.

5.3.4 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.3-1: Development of the project could impact an identified historic resource. [Threshold C-1]

Impact Analysis: As detailed above (see *Historical Subdivisions*), the project area is associated with relatively early Rancho-period ownership and use as well as some early subdivisions and development. With the exception of the modern commercial and residential improvements, the project area can be associated with the establishment of roadways, the Harbor-UCLA Medical Center, and relatively few pre-1930 residential improvements. The majority of the project area improvements date after World War II, with residential developments dominated by single family residences in the late 1940s to 1960s. More recently, some areas have been developed or redeveloped as apartment or condominium complexes. These post–World War II improvements are not considered historically significant.

The project area is sensitive for the presence of historic built environments (standing structures) that predate 1965. The cultural resources study identified a number of structures that have the potential to be historically significant, including eight pre-1930 residential properties, three commercial buildings on Carson Street, and the World War II medical complex on the site of the Harbor-UCLA Medical Center. The potentially historic properties in the Specific Plan area are detailed in Table 5.3-1:

Table 5.3-1 Potentially Historic Properties in the Specific Plan Area

Assessor Parcel Number	Address	Land Use	Approximate Built Year
7344-001-901	Harbor-UCLA Medical Center	Medical	Early 1940s
7344-004-010	958 222nd Street	Multifamily Residential	1921-1923-1927-1952
7344-007-007	1016 Jay Street	Single Family Residential	1915-1920
7344-007-008	1011 222nd Street	Single Family Residential	1922-1947
7344-007-010	1015 222nd Street	Single Family Residential	1908-1929
7344-007-012	1041 222nd Street	Single Family Residential	1929-1938
7344-009-020	1139 Jay Street	Single Family Residential	1930-1975
7344-012-032	22042 Normandie Avenue	Single Family Residential	1926
7344-013-019	1203 223rd Street and Nursery	Single Family Residential	1930-1935
7345-010-011	1029 Carson Street	Commercial	1969
7345-010-012	1019 Carson Street	Commercial	1969
7345-010-013	1017 Carson Street	Commercial	1959

Additionally, all major road alignments in the project area could be considered historic based on age. However, each has been significantly improved via width, pavement, infrastructure, etc., obliterating the original alignments and thereby reducing the likelihood these roadways would be considered historically significant. This is particularly evident along Vermont Avenue, Normandie Avenue, Torrance Boulevard, Carson Street, and 223rd Street. Secondary streets extend from Torrance Avenue (originally 208th Street) to 223rd Street, with some additional north/south cross-streets. The names of some streets have been changed over the years, but the actual alignments appear to be original. There have been some lot-line adjustments, but the majority of the properties reflect their original dimensions and improvements. Modern improvements, such as the I-110 and Harbor-UCLA Medical Center expansions, have resulted in the removal of some earlier structures and interrupted some road alignments.

Overall, the proposed West Carson TOD Specific Plan would not immediately impact the potentially historic properties listed in Table 5.3-1. However, future projects in accordance with the Specific Plan that involve these properties would require a formal assessment of the resources.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.3-1 would be potentially significant.

Impact 5.3-2: Development of the project could impact archaeological resources. [Threshold C-2]

Impact Analysis: The Specific Plan area is mostly built out, and the reconnaissance survey did not find any evidence of archaeological resources. Nonetheless, there is always potential for buried archaeological resources to be uncovered during excavation activities. Therefore, the project area is considered to have moderate sensitivity for buried archaeological resources.

Future projects in accordance with the Specific Plan could uncover previously undiscovered archaeological resources during grading activities.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.3-2 would be potentially significant.

Impact 5.3-3: The proposed project could adversely impact paleontological resources or unique geologic features. [Threshold C-3]

Impact Analysis: Similar to the archaeological resources investigation, the cultural resources investigation concluded that the project area is moderately sensitive for paleontological resources based on findings in the general vicinity and the nature of the soils in the project area. Shallow excavation into areas with younger Quaternary deposits would likely not yield fossils, but deeper excavations may impact older Quaternary alluvium, which is associated with fossil specimens.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.3-3 would be potentially significant.

5.3.5 Cumulative Impacts

The area considered for cumulative impacts to cultural resources is approximately the one-half mile radius around the Specific Plan boundary. Future projects near the project site may involve demolishing or altering existing historic resources that may be eligible for California Register of Historic Resources listing. Some projects would disturb soil and thus could damage archaeological and/or paleontological resources that could be buried under those project sites. However, similar to the proposed project, cumulative projects requiring discretionary approvals would be subject to CEQA review, including studies of historical, archaeological, and paleontological resources that are present or could be present onsite and historic architectural evaluation of structures onsite that could potentially be eligible for listing on the California Register. Where significant or potentially significant impacts are identified, implementation of all feasible mitigation measures would be required to reduce those impacts. Therefore, cumulative impacts to cultural resources would be less than significant after implementation of state law and appropriate mitigation measures.

5.3.6 Level of Significance Before Mitigation

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.3-1** Potentially historic resources may be impacted by development in accordance with the proposed project.
- **Impact 5.3-2** Previously undiscovered archaeological resources may be uncovered during grading activities associated with the proposed project.
- **Impact 5.3-3** Paleontological resources may be impacted by development of the proposed project.

5.3.7 Mitigation Measures

Impact 5.3-1

CUL-1 As a condition of approval, future development or redevelopment projects on any of the properties listed in Table 5.3-1, *Potentially Historic Properties in the Specific Plan Area*, of the West Carson TOD Specific Plan EIR (SCH No. 2017011010) that may involve a substantial adverse change as defined by Public Resources Code 5020.1 shall require the following of the property owner or project applicant/developer:

- Preparation of an intensive-level historical evaluation of the subject property. The evaluation shall be conducted in accordance with all applicable federal, state, and local guidelines for evaluating historical resources. Recommendations for preservation should be considered, if applicable. The historical evaluation shall be submitted to the County of Los Angeles Department of Regional Planning for review and approval.

- Preparation of a Phase I cultural resources investigation that complies with current standards and guidelines for any properties not previously improved (e.g., open space or native soils).

Impact 5.3-2

CUL-2 As a condition of approval for projects involving subterranean levels and/or parking, future project applicants/developers shall provide written evidence to the County of Los Angles that a County-certified archaeologist has been retained to observe grading activities greater than six feet in depth and salvage and catalogue archaeological resources as necessary. The archaeologist shall be present at the pregrade conference; shall establish procedures for archaeological resource surveillance; and shall establish, in cooperation with the applicant, procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts as appropriate.

If the archaeological resources are found to be significant, the archaeological monitor shall determine appropriate actions, in cooperation with the project applicant/developer, for exploration and/or salvage. The archaeologist shall prepare a comprehensive report including appropriate records for the California Department of Parks and Recreation (Building, Structure, and Object Record; Archaeological Site Record; or District Record, as applicable). If any resources are excavated, the project applicant/developer shall prepare excavated material to the point of identification.

Future applicants/developers shall offer excavated finds for curatorial purposes to the County of Los Angeles, or its designee, on a first refusal basis. These actions, as well as final mitigation and disposition of the resources, shall be subject to the approval of the County. The project applicant/developer shall pay curatorial fees if an applicable fee program has been adopted by the Board of Supervisors, and such fee program is in effect at the time of presentation of the materials to the County or its designee, all in a manner meeting the approval of the County.

Impact 5.3-3

CUL-3 As a condition of approval for projects involving subterranean levels and/or parking, the future project applicant/developer shall retain a qualified paleontologist to monitor grading activities greater than six feet in depth. Deep excavations may impact undisturbed deposits in older Quaternary alluvium, which is typically associated with fossils. The qualified paleontologist shall be present during the pre-grading meeting to discuss paleontological sensitivity and to assess whether scientifically important fossils have the potential to be encountered. The paleontologist shall determine, based on consultation with the County, when monitoring of grading activities is needed based on the onsite soils and final grading plans.

All paleontological work to assess and/or recover a potential resource at the project site shall be conducted under the direction of the qualified paleontologist and follow the standard protocols of the Natural History Museum of Los Angeles County. If any fossil remains are uncovered during earth-moving activities, all heavy equipment shall be diverted at least 50 feet from the fossil site until the monitor has had an opportunity to examine the remains and determines that earth-moving can resume. The extent of land area that is prohibited from disturbance shall be at the discretion of the paleontological monitor. Samples of older Quaternary alluvium shall be collected as necessary for processing and shall be examined for very small vertebrate fossils. The paleontologist shall prepare a report of the results of any findings following accepted professional practice and submit the report for review by the County of Los Angeles Department of Regional Planning.

5.3.8 Level of Significance After Mitigation

The mitigation measures identified above would reduce potential impacts to cultural resources to a level that is less than significant. Therefore, no significant unavoidable adverse impacts to cultural resources have been identified.

5.3.9 References

McKenna et al. 2016, August 28. Cultural Resources Overview and Assessment: The City of Los Angeles, West Carson Transit Oriented District (TOD) Specific Plan Project Area, Los Angeles County, California.

5.4 GEOLOGY AND SOILS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the West Carson TOD Specific Plan to impact geological and soil resources in the community of West Carson.

5.4.1 Environmental Setting

5.4.1.1 RELEVANT PROGRAMS AND REGULATIONS

State

California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act requires the state geologist to delineate earthquake fault zones along faults that are "sufficiently active" and "well defined." The act requires that cities and counties withhold development permits for a site in an earthquake fault zone until geologic investigations demonstrate that the site is not threatened by surface displacements from future faulting. An active fault is one showing expression of surface rupture within the last 11,000 years. Pursuant to this act, structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act (SHMA) was adopted by the state in 1990 to protect the public from the effects of nonsurface fault rupture earthquake hazards, including strong ground shaking, liquefaction, seismically induced landslides, or other ground failure caused by earthquakes. The goal of the act is to minimize loss of life and property by identifying and mitigating seismic hazards. The California Geological Survey prepares seismic hazard zone maps and provides them to local governments; these maps identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. SHMA requires responsible agencies to only approve projects within seismic hazard zones following a site-specific investigation to determine if the hazard is present, and if so, the inclusion of appropriate mitigation(s). In addition, the SHMA requires real estate sellers and agents at the time of sale to disclose whether a property is within one of the designated seismic hazard zones.

2016 California Building Code

Current law states that every local agency enforcing building regulations, such as cities and counties, must adopt the provisions of the California Building Code (CBC) within 180 days of its publication. The publication date of the CBC is established by the California Building Standards Commission, and the code is updated every three years. It is in Title 24, Part 2, of the California Code of Regulations. The most recent building standard adopted by the legislature and used throughout the state is the 2016 CBC, which took effect on January 1, 2017. Local jurisdictions may add amendments based on local geographic, topographic, or climatic conditions. These codes provide minimum standards to protect property and people by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC's provisions for

earthquake safety are based on factors such as occupancy type, the types of soil and rock onsite, and the strength of ground motion with a specified probability at the site.

California Building Code Section 1802 (Requirements for Geotechnical Investigations)

Requirements for geotechnical investigations for subdivisions requiring tentative and final maps and for other types of structures are in California Health and Safety Code, Sections 17953 to 17955, and in Section 1802 of the CBC. Testing of samples from subsurface investigations is required, such as from borings or test pits. Studies must be done as needed to evaluate slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on load-bearing capacity, compressibility, liquefaction, differential settlement, and expansiveness.

Local

Los Angeles County Building Code

The Los Angeles County Building Code also contains rules and regulations that govern activities that could result in soil erosion or slope instability. These rules and regulations are in the County Grading Code Ordinance and Regulations, where provisions for excavation, grading, and earthwork construction have been established, permitting procedures are set forth, and plan approval and grading inspection protocols and procedures have been identified.[1] The appendix also contains provisions for construction-related erosion control, including the preparation of cut-and-fill slopes and the implementation of erosion control measures such as check dams, cribbing, riprap, or other devices or methods.

The ordinances also include seismic safety requirements for certain building types, such as older concrete tilt-up buildings and unreinforced masonry buildings. The stated goal of these ordinances is to promote public safety and welfare by reducing the risk of death or injury that could result from earthquake damage to certain types of older buildings during moderate or strong earthquakes. Based on the findings of required structural analyses, deficient buildings may need to be strengthened or demolished.

5.4.1.2 EXISTING CONDITIONS

Regional Setting

The project site is in the Peninsular Ranges Geomorphic Province, a northwest-trending series of mountain ranges and valleys. Within this province, the project site is in the Los Angeles Basin, a coastal plain extending from the Pacific Ocean on the south to the Santa Monica Mountains and Puente Hills on the north. The community of West Carson is in the southwest part of the Los Angeles Basin.

Faults

Active faults in the region include the Newport-Inglewood Fault about 2.8 miles to the northeast; the Palos Verdes Fault, about 4.4 miles to the south; the Cabrillo Fault immediately offshore, about 8.1 miles to the

[1] Los Angeles County Code, Title 26, Appendix J–Grading, https://library.municode.com/index.aspx?clientId=16274, accessed on February 24, 2014.

south; and the Redondo Canyon Fault, offshore approximately three miles to the west. No active faults are mapped within the project site (CGS 2016). The nearest Alquist-Priolo Earthquake Fault Zone to the project site is along the Newport-Inglewood Fault, about 2.7 miles to the northeast (CGS 1986).

Historic Earthquakes

Two earthquakes of magnitude 6.0 or greater have occurred within 50 miles of the project site within the last 50 years:

- The 1994 **Northridge Earthquake**, which occurred on the Northridge Thrust fault and was of magnitude 6.7, caused at least 57 fatalities and property damage estimated between $13 billion and $40 billion (SCEDC 2016a).

- The 1971 **San Fernando Earthquake**, which occurred on the San Fernando Fault Zone and was of magnitude 6.6, caused 65 deaths and over $500 million in property damage (SCEDC 2016b).

Project Site

Geologic Units

Most of the project site—except for its northern edge—consists of Quaternary alluvium (map symbol Qa), which is mostly loamy clay of valley and flood plains.[2] Clay loam soils have approximately similar proportions of sand, silt, and clay; clay particles are smaller than 0.002 millimeters (mm); silt particles are between 0.002 and 0.05 mm; and sand is between 0.05 and 2 mm (NRCS 2017).

The northern edge of the project site in and near the 208th Street Storm Drain is elevated Quaternary alluvium (map symbol Qae), similar to the Quaternary alluvium described above but slightly elevated and locally dissected (Dibblee 1999).

Topography

The site is nearly flat; much of the site is about 40 to 45 feet above mean sea level, declining to about 27 feet above mean sea level at the north end of the site.

Faults

The project site is not in a currently designated State of California Earthquake Fault Zone (Alquist-Priolo Special Studies Zones) for surface fault rupture. No surface faults are known to project through or toward the project site.

Liquefaction

Liquefaction is a sudden decrease in the strength of cohesionless soils due to dynamic or cyclic shaking. Saturated soils behave temporarily as a viscous fluid and, consequently, lose their capacity to support structures. The potential for liquefaction decreases with increasing clay and gravel content, but increases as

[2] The Quaternary Period extends from about 2.59 million years ago to the present.

the ground acceleration and duration of shaking increase. Liquefaction potential is greatest where the groundwater level and loose sands occur within 50 feet of the ground surface.

Depths to groundwater in spring 2016 at four wells within about three miles of the project site ranged from 36.7 feet below ground surface (bgs) at a well in Gardena about 2.3 miles north of the site to 102.45 feet bgs at a well in Torrance about three miles west of the site (DWR 2017). The northern edge of the project site is in a Zone of Required Investigation for Liquefaction mapped by the California Geological Survey (CGS 1999). This portion of the project site is mapped as elevated Quaternary alluvium (map symbol Qae)—that is, mostly loamy clay of valley and flood plains (Dibblee 1999).

Landslides

The project site is relatively flat and not located near any hillside terrain. In the absence of significant ground slopes, the potential for seismically induced landslides to affect the project area is considered negligible.

Collapsible Soils

Collapsible soils shrink upon being wetted and/or subjected to a load. Collapsible soils are highly porous; poorly cemented; occur mostly in arid and semiarid areas; and form through rapid deposition, such as from a flood (NRCS 2004). Native soils at the Harbor-UCLA Medical Center are generally unconsolidated and may be subject to collapse. Fill soils on the sites of existing or historic developments could also be collapsible (DPW 2016).

Lateral Spreading

Seismically induced lateral spreading involves primarily lateral movement of earth materials due to ground shaking. It differs from the slope failure in that complete ground failure involving large movement does not occur due to the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks with predominantly horizontal movement of the soil mass involved. The topography within the Specific Plan area and in its immediate vicinity is relatively flat, with no nearby descending slopes or embankments. Under these circumstances, the potential for lateral spreading at the project site is considered negligible.

Expansive Soils

Expansive soils contain substantial amounts of clay that can absorb large quantities of water and thus swell when wetted and shrink when dried; the swelling or shrinking can shift, crack, or break structures built on such soils. Soil volume may expand 10 percent or more as the clay becomes wet. Arid or semiarid areas with seasonal changes of soil moisture experience a much higher frequency of problems from expansive soils than do areas with higher rainfall and more constant soil moisture (COGS 2011). Repeated fluctuations in soil water content next to a foundation—such as that caused by landscape irrigation—can contribute to soil expansion (NRCS 2004). Soils on most of the project site are mostly loamy clay; thus, expansive soils could be present onsite.

Ground Subsidence

The major cause of ground subsidence is the excessive withdrawal of groundwater. The potential for subsidence in the West Coast Subbasin is considered low (DWR 2017). The potential for subsidence at the Harbor-UCLA Medical Center is also considered low (DPW 2016).

5.4.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

G-1 Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42.)
- ii) Strong seismic ground shaking.
- iii) Seismic-related ground failure, including liquefaction and lateral spreading.
- iv) Landslides.

G-2 Result in substantial soil erosion or the loss of topsoil.

G-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

G-4 Be located on expansive soil, as defined in Table 18-1B of the Uniform building Code (1994), creating substantial risks to life or property.

G-5 Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

G-6 Conflict with the Hillside Management Area Ordinance (L.A. County Code, Title 22, § 22.56.215) or hillside design standards in the County General Plan Conservation and Open Space Element.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold G-1.i
- Threshold G-1.iv

- Threshold G-5
- Threshold G-6

These impacts will not be addressed in the following analysis.

5.4.3 Plans, Programs, and Policies

5.4.3.1 REGULATORY REQUIREMENTS

RR GEO-1 The project will be designed and constructed in accordance with the Los Angeles County's Building Code, which adopts the California Building Code (CBC), which is based on the International Building Code (IBC). New construction, alteration, or rehabilitation shall comply with applicable ordinances set forth by the County and/or by the most recent County building and seismic codes in effect at the time of project design. In accordance with Section 1803.2 of the 2016 CBC, a geotechnical investigation is required that must evaluate soil classification, slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on soil-bearing capacity, compressibility, liquefaction, and expansiveness, as necessary, determined by the County Building Official. The geotechnical investigation must be prepared by registered professionals (i.e., California Registered Civil Engineer or Certified Engineering Geologist). Recommendations of the report, as they pertain to structural design and construction recommendations for earthwork, grading, slopes, foundations, pavements, and other necessary geologic and seismic considerations, must be incorporated into the design and construction of the project.

RR HYD-1 The project will be constructed in accordance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with the Construction and Land Disturbance Activities, Order No 2009- 0009-DWQ, NPDES No. CAS000002 (or the latest approved Construction General Permit). Compliance requires filing a Notice of Intent (NOI); a Risk Assessment; a Site Map; a Storm Water Pollution Prevention Plan (SWPPP) and associated Best Management Practices (BMPs); an annual fee; and a signed certification statement.

5.4.4 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Pursuant to a 2015 California Supreme Court decision (*California Building Industry Association vs. Bay Area Air Quality Management District*, 62 Cal.4th 369), impacts of the environment on a project are now excluded from CEQA with certain exceptions. One exception is where development of a project would exacerbate an existing hazard. Two examples of this are: 1) where ground disturbance by a project could expose people and/or the environment to existing soil contamination and 2) a project contributing to the potential for soil collapse by wetting soil (such as by irrigation) and/or placing a load (such as a building) on soil. However, a

project attracting increased numbers of people to a place affected by an existing hazard, for instance by building structures on an active fault, is no longer an impact within the purview of CEQA. Thus, Threshold G-1.ii is not analyzed below.

Impact 5.4-1: Implementation of the Specific Plan would not substantially exacerbate liquefaction or lateral spreading hazards onsite. [Threshold G-1.iii and G-3(part)]

Impact Analysis: The northern edge of the project site is in a Zone of Required Investigation for Liquefaction mapped by the California Geological Survey (CGS 1999). Development in an area susceptible to liquefaction could exacerbate liquefaction hazard by introducing irrigation into the area (Palm Springs 2007).

The affected portion of the project site is built out with residential and commercial land uses; thus, Specific Plan buildout would not involve development of vacant land in that area. The Specific Plan would not change permitted land uses on the affected part of the site. Existing zoning on the affected area is R-1 (Single-Family Residence), A-1 (Light Agriculture; developed with single-family residential uses), and C-2 (neighborhood commercial). Proposed zoning under the Specific Plan in the same area is West Carson Residential 1 and Neighborhood Commercial. Thus, Specific Plan implementation would not involve land use changes in the Zone of Required Investigation for Liquefaction that could substantially increase liquefaction hazard in that area. Further, future developments in accordance with the Specific Plan would be required to adhere to the Los Angeles County Building Code, CBC, and IBC. According to regulatory requirement RR GEO-1, future projects are required to prepare a geotechnical investigation to evaluate soil classification, stability, strength, and the effect of moisture variation on soil-bearing capacity, liquefaction, and expansiveness. Recommendations in the geotechnical investigation must be incorporated into the design and construction of the project.

Level of Significance before Mitigation: With implementation of regulatory requirements RR GEO-1, Impact 5.4-1 would be less than significant.

Impact 5.4-2: Specific Plan buildout could cause soil erosion or loss of topsoil. [Threshold G-2]

Impact Analysis:

Construction

Construction activities in accordance with the Specific Plan would disturb and expose large amounts of soils susceptible to erosion impact. However, reduction of the erosion potential can be accomplished through compliance with RR HYD-1 requiring a Storm Water Pollution Prevention Plan (SWPPP), which specifies best management practices for temporary erosion controls.

Per the statewide Construction General Permit, Order No. 2012-0006-DWQ, issued by the State Water Resources Control Board, construction projects of one acre or more are required to develop and implement a SWPPP. The SWPPP should estimate sediment risk from construction activities to receiving waters and specify best management practices (BMPs) that would be used by the project to minimize pollution of stormwater. Categories of BMPs required in SWPPPs include:

- **Erosion controls** cover and/or bind soil surface, to prevent soil particles from being detached and transported by water or wind; examples include mulch, geotextiles, mats, hydroseeding, earth dikes, and swales.

- **Sediment controls** filter out soil particles that have been detached and transported in water; examples include barriers such as straw bales, sandbags, fiber rolls, and gravel bag berms; desilting basins; and cleaning measures such as street sweeping.

- **Tracking controls** minimize the tracking of soil offsite by vehicles; examples include stabilized construction roadways and construction entrances/exits, and entrance/outlet tire washes.

- **Nonstorm Water Management Controls** prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Examples include BMPs for specifying methods for: paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; and concrete curing and finishing.

- **Waste Management and Controls** include spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes (CASQA 2003).

Therefore, implementation of RR HYD-1 would prevent construction activities associated with the proposed project from resulting in significant adverse impacts associated with substantial soil erosion and/or loss of topsoil.

Operation

Project applicants are also required to submit a low impact development (LID) plan for review and approval by LA County Public Works pursuant to the Los Angeles County LID Standards Manual. The use of LID BMPs in project planning and design is intended to preserve a site's predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration, evapotranspiration, and runoff detention. LID BMPs try to offset these losses by introducing structural and nonstructural design components into the project's land plan that restore these water quality functions.

LID BMPs and treatment control BMPs are designed to retain, filter, or treat runoff from a 24-hour 85th percentile storm. This is termed the "design capture volume." The LID Standards Manual provides design criteria for combining use of infiltration, retention, and biofiltration BMPs to meet on-site volume retention requirements. Requirements of the LID Standards Manual are explained further in Section 5.7, *Hydrology and Water Quality*, of this DEIR. Impacts would be less than significant after compliance of redevelopment projects with requirements of the LID Standards Manual.

Level of Significance before Mitigation: With implementation of regulatory requirement RR HYD-1, Impact 5.4-2 would be less than significant.

Impact 5.4-3: Specific Plan buildout would not substantially aggravate hazards from subsidence or collapsible soils. [Threshold G-3 (part)]

Impact Analysis: The phenomenon of widespread land sinking, or subsidence, is generally related to substantial overdraft of groundwater or petroleum reserves from underground reservoirs. Collapsible soils may appear to be strong and stable in their natural (dry) state, but they rapidly consolidate under wetting, generating large and often unexpected settlements.

Potential subsidence in the project area is considered low (DWR 2017, 2016). However, native soils at the Harbor-UCLA Medical Center are generally unconsolidated and may be collapsible. Fill soils on the sites of existing or historic developments could also be collapsible (DPW 2016).

As required by RR GEO-1, prior to the completion of final engineering design plans, future design and construction of projects in accordance with the Specific Plan must be conducted with consideration of the effects of potential subsidence and collapsible soils. This could include remedial grading in specific areas to prepare the site to support the proposed structures; providing a relative uniform-bearing material below shallow foundations; and/or allowing for overexcavation and recompaction below planned foundations. Compliance with RR GEO-1 would ensure that the potential for impacts associated with subsidence and collapsible soils would be less than significant.

Moreover, the County's building regulations provide building design criteria to protect the structural integrity of structures and infrastructure against geologic hazards. The 2016 CBC and Los Angeles County Building Code require the preparation by registered professionals (i.e., California Registered Civil Engineer or Certified Engineering Geologist) of a geotechnical investigation to identify the geologic characteristics on specific locations where structures and infrastructure are proposed and to develop engineering and structural recommendations and measures, including measures to reduce hazards from liquefaction, subsidence, collapsible soils, and other soil characteristics so as to maintain structural integrity of the project.

Level of Significance before Mitigation: With implementation of regulatory requirement RR GEO-1, Impact 5.4-3 would be less than significant.

Impact 5.4-4: Specific Plan buildout would not substantially exacerbate hazards from expansive soils. [Threshold G-4]

Impact Analysis: Highly expansive soils swell when they absorb water and shrink as they dry and can cause structural damage to building foundations and roads. Thus, they are less suitable for development than nonexpansive soils.

Most of the soils on the project site are loamy clay; thus, expansive soils could be present onsite. Specific Plan buildout would involve major redevelopment, especially in the proposed Mixed Use Development, Industrial Flex, and Harbor-UCLA Medical Center zoning districts. Thus, Specific Plan implementation could exacerbate expansive soils hazards, such as by infiltration of stormwater or increasing the amount of irrigation on redevelopment sites.

However, RR GEO-1 requires geotechnical reports to be prepared for each development or redevelopment project undertaken pursuant to the Specific Plan. The geotechnical reports would assess expansion potential onsite and would provide recommendations to minimize expansive soil hazards. Compliance with RR GEO-1 would ensure Specific Plan buildout would not substantially increase hazards from expansive soils.

Level of Significance before Mitigation: With implementation of regulatory requirement RR GEO-1, Impact 5.4-4 would be less than significant.

5.4.5 Cumulative Impacts

Geology and soils impacts are site specific and generally do not combine to result in cumulative impacts. Similar to the proposed project, future development projects would be required to comply with applicable state and local building regulations. Future cumulative projects would be designed and built in accordance with applicable standards in the 2016 CBC, Los Angeles County Building Code, RR GEO-1, and RR HYD-1. Site-specific geologic hazards would be addressed in each project's geotechnical investigation. Therefore, no significant cumulative impact would occur.

5.4.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements RR GEO-1 and RR HYD-1, the following impacts would be less than significant: 5.4-1, 5.4-2, 5.4-3, and 5.4-4.

5.4.7 Mitigation Measures

No mitigation measures are necessary because no significant impacts were identified.

5.4.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.4.9 References

California Geological Survey (CGS). 1986. Special Studies Zones Map, Torrance Quadrangle. http://gmw.consrv.ca.gov/shmp/download/quad/TORRANCE/maps/TORRANCE.PDF.

———. 1999, March 25. Seismic Hazard Zones Map, Torrance Quadrangle. http://gmw.consrv.ca.gov/shmp/download/quad/TORRANCE/maps/ozn_tor.pdf.

———. 2014, October 21. Ground Motion Interpolator. http://www.quake.ca.gov/gmaps/PSHA/psha_interpolator.html.

———. 2016, January 12. Fault Activity Map of California (2010). http://maps.conservation.ca.gov/cgs/fam/.

California Water Service Company, Dominguez District (CWSC). 2016, June. 2015 Urban Water Management Plan. https://wuedata.water.ca.gov/public/uwmp_attachments/2878492057/01%5FDOM%5F2015%5FUWMP%5FFINAL%2Epdf.

Colorado Geological Survey (COGS). 2011, April 28. Definition of Swelling Soils. http://geosurvey.state.co.us/hazards/Swelling%20Soils/Pages/Definition.aspx.

Department of Public Works, Los Angeles County (DPW). 2016, August 11. Geology and Soils. Section 4.D in Harbor-UCLA Medical Center Campus Master Plan Project Draft Environmental Impact Report. https://dpw.lacounty.gov/pmd/CampusMasterPlans/docs/HUCLA/Sections/4.D.%20Geology%20and%20Soils.pdf.

Department of Water Resources (DWR). 2017, January 20. Groundwater Information Center Map Interactive Map Application. https://gis.water.ca.gov/app/gicima/.

Dibblee, T. W., et al. 1999. Geologic Map of the Palos Verdes Peninsula and Vicinity, Redondo Beach, Torrance, and San Pedro Quadrangles, Los Angeles County, California. http://ngmdb.usgs.gov/maps/mapview/.

MEC. 2004, April. Dominguez Watershed Management Master Plan. http://www.ladpw.org/wmd/watershed/dc/DCMP/docs/Section%202%20Background%20Information%20Report.pdf.

Natural Resources Conservation Service (NRCS). 2017, January 20. Soil Texture Calculator. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_054167.

———. 2004. Understanding Soil Risks and Hazards: Using Soil Survey to Identify Areas with Risks and Hazards to Human Life and Property. https://www.nature.nps.gov/geology/soils/Understanding%20Soil%20Risks%20and%20Hazards.pdf.

Palm Springs, City of. 2007. Safety Element. Chapter 6 of Palm Springs 2007 General Plan. http://www.ci.palm-springs.ca.us/home/showdocument?id=1975.

Southern California Earthquake Data Center (SCEDC). 2016a, March 24. San Fernando Earthquake. http://scedc.caltech.edu/significant/sanfernando1971.html.

———. 2016b, March 24. Northridge Earthquake. http://scedc.caltech.edu/significant/northridge1994.html.

5. Environmental Analysis
GEOLOGY AND SOILS

This page intentionally left blank.

5.5 GREENHOUSE GAS EMISSIONS

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the implementation of the West Carson TOD Specific Plan (project) to cumulatively contribute to greenhouse gas (GHG) emissions. Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of a project are considered on a cumulative basis. The analysis in this section is based on buildout of the proposed project, as modeled using the California Emissions Estimator Model (CalEEMod) and trip generation and vehicle miles traveled (VMT) provided by IBI Group (see Appendix I to this DEIR). The GHG emissions modeling for construction and operational phases are included in Appendix D of this DEIR.

5.5.1 Environmental Setting

5.5.1.1 GREENHOUSE GASES AND CLIMATE CHANGE

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[1,2] The major GHGs are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

[1] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, because it is considered part of the feedback loop rather than a primary cause of change.

[2] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2017b). However, state and national GHG inventories do not include black carbon yet due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.

    - ***Chlorofluorocarbons (CFCs)*** are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down the ozone layer. These gases are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

    - ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with hydrofluorocarbons (HFCs), to ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high GWP.

    - ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, and slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

    - ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although they are ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs.

    - ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs. (IPCC 1995; USEPA 2017)

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5.5-1, *GHG Emissions and Their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for CH_4, a project that generates 10 metric tons (MT) of CH_4 would be equivalent to 250 MT of CO_2.[3]

[3] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

Table 5.5-1 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report Atmospheric Lifetime (Years)	Fourth Assessment Report Atmospheric Lifetime (Years)	Second Assessment Report Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	50 to 200	50 to 200	1	1
Methane[2] (CH_4)	12 (±3)	12	21	25
Nitrous Oxide (N_2O)	120	114	310	298
Hydrofluorocarbons:				
HFC-23	264	270	11,700	14,800
HFC-32	5.6	4.9	650	675
HFC-125	32.6	29	2,800	3,500
HFC-134a	14.6	14	1,300	1,430
HFC-143a	48.3	52	3,800	4,470
HFC-152a	1.5	1.4	140	124
HFC-227ea	36.5	34.2	2,900	3,220
HFC-236fa	209	240	6,300	9,810
HFC-4310mee	17.1	15.9	1,300	1,030
Perfluoromethane: CF_4	50,000	50,000	6,500	7,390
Perfluoroethane: C_2F_6	10,000	10,000	9,200	12,200
Perfluorobutane: C_4F_{10}	2,600	NA	7,000	8,860
Perfluoro-2-methylpentane: C_6F_{14}	3,200	NA	7,400	9,300
Sulfur Hexafluoride (SF_6)	3,200	NA	23,900	22,800

Source: IPCC 1995; IPCC 2007.

Note: The IPCC has published updated global warming potential (GWP) values in its Fifth Assessment Report (2013) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values identified in the Fourth Assessment Report are used by SCAQMD to maintain consistency in statewide GHG emissions modeling. In addition, the 2014 Scoping Plan Update was based on the GWP values in the Fourth Assessment Report.

1 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

California's GHG Sources and Relative Contribution

California is the 20th largest GHG emitter in the world and the 2nd largest emitter of GHG emissions in the United States, surpassed only by Texas (CARB 2014a). However, California also has over 12 million more people than Texas. Because of more stringent air emission regulations, in 2014, California ranked third lowest in energy-related carbon emissions per capita (EIA 2017).

In 2016, the statewide GHG emissions inventory was updated for 2000 to 2014 emissions using the AR4 GWPs.[4] Based on these GWPs, California produced 442 million metric tons (MMT) of CO_2e GHG emissions in 2014. California's transportation sector remains the single largest generator of GHG emissions, producing 36.1 percent of the state's total emissions; industrial sector emissions made up 21.1 percent, and

[4] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (2006).

electric power generation made up 20.0 percent. Other major sectors of GHG emissions include commercial and residential (8.7 percent), agriculture (8.2 percent), high-GWP GHGs (3.9 percent), and recycling and waste (2.0 percent) (CARB 2016).

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime (IPCC 2007).

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are also hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada. By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase from 4.1 to 8.6°F, depending on emissions levels (CCCC 2012).

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) a shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.5-1), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 5.5-2, *Summary of GHG Emissions Risks to California,* and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy impacts.

Table 5.5-2 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Fewer extremely cold nights Poor air quality made worse Higher temperatures increase ground-level ozone levels
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: CEC 2006; CEC 2009; CCCC 2012; CNRA 2014.

Specific climate change impacts that could affect the project include:

- **Water Resources Impacts.** By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. This drying trend is caused by an apparent decline in the frequency of rain and snowfall. Even in projections with relatively small or no declines in precipitation, central and southern parts of the state can be expected to be drier from the warming effects alone—the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months (CCCC 2012).

- **Wildfire Risks.** Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase from 58

percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location (CCCC 2012).

- **Health Impacts.** Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession and heat waves occurring simultaneously in several regions throughout the state. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California (CCCC 2012).

- **Increase Energy Demand.** Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the state will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand (CCCC 2012).

5.5.1.2 RELEVANT PROGRAMS AND REGULATIONS

This section describes the federal, state, and local regulations applicable to GHG emissions.

Federal Laws

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements, but allowed the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the project's GHG emissions inventory because they constitute the majority of GHG emissions and, per South Coast Air Quality Management District (SCAQMD) guidance, are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO_2e per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2010/2012)

The current Corporate Average Fuel Economy standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be deemed in compliance with state requirements. The federal government issued new standards in 2012 for model years 2017–2025 that will require a fleet average of 54.5 miles per gallon in 2025. However, the EPA is reexamining the 2017–2025 emissions standards.

EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to the President's 2013 Climate Action Plan, the EPA will be directed to develop regulations for existing stationary sources also. However, the EPA is reviewing the Clean Power Plan under President Trump's Energy Independence Executive Order.

State Laws

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05 and B-30-15, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), and SB 375.

Executive Order S-03-05

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill 32, the Global Warming Solutions Act (2006)

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in the Global Warming Solutions Act. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05.

CARB 2008 Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be approximately 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state (CARB 2008). In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan was adopted at the May 22, 2014, board hearing. The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher at 431 $MMTCO_2e$ (CARB 2014b).

As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update also addresses the state's longer-term GHG goals within a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals (CARB 2014b). CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit (CARB 2014b).

Executive Order B-30-15

Executive Order 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. Executive Order B-30-15 also directs CARB 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 as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions

reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan Update

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On January 20, 2017, CARB released the Draft 2017 Climate Change Scoping Plan Update with adoption hearings planned for June of 2017. The Draft 2017 Climate Change Scoping Plan Update includes the potential regulations and programs, including strategies consistent with AB 197 requirements to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017a).

California's climate strategy will require contributions from all sectors of the economy, including the land base, and will include enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, including solar roofs, wind, and other distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for direct GHG reductions at refineries will further support air quality co-benefits in neighborhoods, including in disadvantaged communities historically located adjacent to these large stationary sources, as well as efforts with California's local air pollution control and air quality management districts (air districts) to tighten emission limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZEV buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing methane and hydroflurocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.

- 20 percent reduction in GHG emissions from refineries by 2030.[5]
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to the statewide strategies listed above, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the state's long-term GHG reduction goals and identified local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends that local governments achieve a community-wide goal to achieve emissions of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. For CEQA projects, CARB states that lead agencies may develop evidenced-based bright-line numeric thresholds—consistent with the Scoping Plan and the state's long-term GHG goals—and projects with emissions over that amount may be required to incorporate on-site design features and mitigation measures that avoid or minimize project emissions to the degree feasible, or a performance-based metric using a climate action plan or other plan to reduce GHG emissions as appropriate (CARB 2017a).

The Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what the GHG emissions would look like if the state did nothing at all beyond the existing policies that are required and already in place to achieve the 2020 limit, as shown in Table 5.5-3, *2017 Climate Change Scoping Plan Emissions Reductions Gap to Achieve the 2030 GHG Target*. It includes the existing renewables requirements, advanced clean cars, the "10 percent" Low Carbon Fuel Standard (LCFS), and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years, Also shown in the table, the known commitments are expected to result in emissions that are 50 $MMTCO_2e$ above the target in 2030. In order to make up the difference, a new Post- 2020 Cap-and-Trade Program and refinery measure are key components of the 2017 Scoping Plan.

Table 5.5-3 2017 Climate Change Scoping Plan Emissions Reductions Gap to Achieve the 2030 GHG Target

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	392.4
With Known Commitments	310
2030 GHG Target	260

Source: CARB 2017a.

[5] The plan includes policies to require direct GHG reductions at some of the state's largest stationary sources and mobile sources in accordance with AB 197. These policies include the use of lower GHG fuels, efficiency regulations, and the Cap-and-Trade Program, which constrains and reduces emissions at covered sources.

Table 5.5-4, *2017 Climate Change Scoping Plan Emissions Change by Sector to Achieve the 2030 Target*, provides estimated GHG emissions by sector at 1990 levels, and the range of emissions for each sector estimated for 2030.

Table 5.5-4 2017 Climate Change Scoping Plan Emissions Change by Sector to Achieve the 2030 Target

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24–25	-4% to -8%
Residential and Commercial	44	38–40	-9% to -14%
Electric Power	108	42–62	-43% to -61%
High GWP	3	8–11	167% to 267%
Industrial	98	77–87	-11% to -21%
Recycling and Waste	7	8–9	14% to 29%
Transportation (including TCU)	152	103–111	-27% to -32%
Net Sink[1]	-7	TBD	TBD
Sub Total	431	300–345	-20% to -30%
Cap-and-Trade Program	NA	40–85	NA
Total	431	260	-40%

Source: CARB 2017a.
Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
[1] Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 requires the state board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030, as specified. The bill also establishes targets for reducing organic waste in landfill. On March 14, 2017, CARB adopted the "Final Proposed Short-Lived Climate Pollutant Strategy," which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s despite the tripling of diesel fuel use (CARB 2017b). In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. SCAQMD is one of the air districts that require air pollution control technologies for chain-driven broilers, which reduces particulate emissions from these char broilers by over 80 percent (CARB 2017b). Additionally, SCAQMD Rule 445 limits installation of new fireplaces in the SoCAB.

Senate Bill 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Southern California Association of Governments (SCAG) is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). SB 375 requires CARB to update the targets no later than every 8 years.

The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

CARB is currently in the process of updating the next round of targets and methodology to comply with the requirement for updates every eight years. Considerations for the next round of targets include whether to change the nature or magnitude of the emissions reduction targets for each of the MPOs, and whether the target-setting methodology should account for advances in technologies that reduce emissions. Such changes in methodology would permit cities to account for emissions reductions from advances in cleaner fuels and vehicles and not only from land use and transportation planning strategies. In March 2017, CARB held a series of workshops regarding the SB 375 target update process and updated targets adopted in 2017 are intended to become effective in 2018. Sustainable communities strategies (SCSs) adopted in 2018 would be subject to the updated targets (CARB 2015).

SCAG's 2016-2040 RTP/SCS

SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan. For the SCAG region, the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted on April 7, 2016, and is an update to the 2012 RTP/SCS (SCAG 2016). In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

The 2016-2040 RTP/SCS projects that the SCAG region will meet or exceed the passenger per capita targets set in 2010 by CARB. It is projected that VMT per capita in the region for year 2040 would be reduced by 7.4 percent with implementation of the 2016-2040 RTP/SCS compared to a no-plan year 2040 scenario. Under the 2016-2040 RTP/SCS, SCAG anticipates lowering GHG emissions 8 percent below 2005 levels by 2020, 18 percent by 2035, and 21 percent by 2040. The 18 percent reduction by 2035 over 2005 levels represents a 2 percent increase in reduction compared to the 2012 RTP/SCS projection. Overall, the SCS is meant to provide growth strategies that will achieve the aforementioned regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles (SCAG 2016). However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) 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 EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal Laws*, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the state set a new low carbon fuel standard (LCFS) for transportation fuels sold within the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the RPS established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the state's

Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SBX1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate zero-emissions vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directs the number of zero-emission vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero-emission by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017.

The 2016 Standards continues to improve upon the previous 2013 Standards for new construction of and additions and alterations to residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are 28 and 5 percent more energy efficient than the 2013 Standards, respectively (CEC 2015a). Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the prior 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features. While the 2016 standards do not achieve zero net energy, they do get very close to the state's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve zero net energy for newly constructed residential buildings throughout California (CEC 2015b).

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[6] The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, and were last updated in 2016. The 2016 Standards became effective on January 1, 2017.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Regulations

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2013 California Green Building Standards Code also requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

In October of 2014 Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling

[6] The green building standards became mandatory in the 2010 edition of the code.

program to divert organic waste generated by businesses and multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Water Efficiency Regulations

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Local Laws and Programs

Los Angeles County Community Climate Action Plan

The County of Los Angeles has prepared a Final Unincorporated Los Angeles County Community Climate Action Plan 2020 (CCAP). The CCAP was adopted as part of the Los Angeles County General Plan 2035 on October 6, 2015. The plan addresses the County's local GHG reduction goals for 2020 pursuant to AB 32. The purpose of the CCAP is to: 1) establish a baseline emissions inventory and reduction needed to meet County goals; 2) identify specific actions that will measurably reduce GHG emissions consistent with AB 32; 3) establish a framework for implementing state and local level actions; and 4) provide a mechanism for ongoing tracking and updates to the CCAP.

As part of the CCAP, the County has identified a GHG reduction target of at least 11 percent below 2010 levels by 2020. The CCAP identifies 26 local actions to reduce community-wide GHG reductions in 2020 to reach the GHG reduction goal for the unincorporated areas of Los Angeles County (unincorporated areas). As identified in the CCAP, the community and statewide actions would reduce GHG emissions in the unincorporated areas by more than 1.95 $MMTCO_2e$.

Since adoption of the CCAP, the Los Angeles County Department of Regional Planning has been working collaboratively with other County departments and individually on ordinance amendments to Title 22 in order to implement the CCAP. The Department of Regional Planning is currently working on the following CCAP implementation ordinances for Title 22:

- Title 22 Compatibility for Cool Roofs and Cool Pavement
- Electric Vehicle Infrastructure as an Accessory Use
- Idle Reduction
- Secondary Uses Under High-Voltage Power Lines

5.5.1.3 EXISTING CONDITIONS

The proposed site currently generates direct and indirect GHG emissions from vehicle trips generated by the project, energy use (indirectly from purchased electricity use and directly through fuel consumed for building heating), area sources (e.g., equipment used on-site, consumer products, coatings), water/wastewater generation, and waste disposal. GHG emissions generated within the Specific Plan are shown in Table 5.5-5, *Existing West Carson TOD Specific Plan GHG Emissions*.

Table 5.5-5 Existing West Carson TOD Specific Plan GHG Emissions

Source	GHG Emissions MTCO2e/Year	
	Existing	Percent of Total
Area	343	1%
Energy	9,141	14%
Transportation	54,850	81%
Waste	2,014	3%
Water	968	1%
Total All Sectors	67,316	100%

Source: CalEEMod Version 2016.3.1. Based on 2017 emission rates and IPCC's AR4 GWPs. Totals may not equal 100 percent due to rounding.
Notes: Industrial sources of emissions that require a permit from SCAQMD (permitted sources) are not included in the West Carson TOD Specific Plan community inventory since they have separate emission reduction requirements.

5.5.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

5.5.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, 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 Working

Group identified a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency (SCAQMD 2010):

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **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, SCAQMD requires an assessment of GHG emissions. SCAQMD identified a "bright-line" screening-level threshold of 3,000 $MTCO_2e$ annually for all land use types or the following land-use-specific thresholds: 1,400 $MTCO_2e$ for commercial projects, 3,500 $MTCO_2e$ for residential projects, or 3,000 $MTCO_2e$ for mixed-use projects. These thresholds are based on a review of the Governor's Office of Planning and Research database of 711 CEQA projects, which showed that 90 percent of CEQA projects would exceed the bright-line thresholds. 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.

SCAQMD has identified an efficiency target for projects that exceed the bright-line threshold: a 2020 efficiency target of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan-level analyses (e.g., general plans). Service population is defined as the sum of the residential and employment population of a project. The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.[7]

Since the SCAQMD efficiency targets identified by the Working Group are based on the GHG reduction goals of AB 32 for year 2020, SCAQMD's efficiency targets have been adjusted based on the long-term GHG reduction targets of Senate Bill 32, which set a goal of 40 percent below 1990 levels by 2030 as shown in Table 5.5-6, *2030 GHG Reduction Targets*.

[7] 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.

Table 5.5-6 2030 GHG Reduction Targets

GHG Sector[1]	Scoping Plan Scenario GHG Emissions $MMTCO_2e$
2017 Scoping Plan End Use Sector 2030 – Land Use Only Sectors	
Residential – residential energy consumption	38.4
Commercial – commercial energy consumption	26.8
Transportation – transportation energy consumption	104.1
Transportation Communications and Utilities – energy that supports public infrastructure like street lighting and waste treatment facilities	4.3
Non-Energy Solid Waste – methane emissions from solid waste disposal	9.17
Total 2017 Scoping Plan Land Use Sector Target	182.8
2030 Project-Level Efficiency Target	
2030 Population[2]	44,085,600
2030 Employment[3]	17,394,580
2030 Service Population	61,480,180
2030 Efficiency Target	3.0 $MTCO_2e$/SP
2035 Project-Level Efficiency Target[4]	
2035 Land Use Sector Target Estimate	151,400,000
2035 Population Estimate	18,191,720
2035 Employment Estimate	45,747,645
2035 Service Population Estimate	63,939,365
2035 Efficiency Target	2.4 $MTCO_2e$/SP

Sources:
[1] CARB 2017a.
[2] CDOF 2014.
[3] Caltrans 2016. Without industrial and agricultural sectors.
[4] The 2035 Efficiency target is based on interpolating the 2030 land use emissions target of 182.8 $MMTCO_2e$ (40 percent below 1990 levels by 2030) and the 2050 land use emissions target of 57.4 $MMTCO_2e$ (80 percent below 1990 levels by 2050), which equates to approximately 47 percent below 1990 levels by 2035. The population and employment estimates are based on a similar forecast to estimate the service population in California in 2035.

Because buildout of the project would occur in 2035, the applicable threshold is based on the trajectory needed to achieve the year 2030 GHG reduction target of SB 32 (40 percent below 1990 levels by 2030) and Executive Order S-03-05 (80 percent below 1990 levels by 2050) for the horizon year of the project. Project emissions are compared to the SCAQMD's project-level efficiency threshold of:

- The 2035 GHG estimated efficiency target would be 2.4 $MTCO_2e$ per service population per year, to be on a trajectory to achieve the GHG reduction goal of Executive Order S-03-05.

Project-related GHG emissions include on-road transportation, energy use, water use and wastewater generation, solid waste disposal, area sources, off-road emissions, and construction activities. The SCAQMD Working Group identified that because construction activities would result in a "one-time" net increase in GHG emissions, construction activities should be amortized into the operational phase GHG emissions inventory based on the service life of a building. For buildings, in general, it is reasonable to look at a 30-year time frame, since this is a typical interval before a new building requires the first major renovation. The net increase in proposed project emissions is compared to the SCAQMD's bright-line threshold. If the proposed

project exceeds the bright-line target, total GHG emissions would be compared to the SCAQMD efficiency target for buildout year 2035.

5.5.3 Plans, Programs, and Policies

5.5.3.1 REGULATORY REQUIREMENTS

RR GHG-1 New buildings are required to achieve the current California Building Energy and Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2016 Building and Energy Efficiency Standards are effective starting on January 1, 2017. The Building Energy and Efficiency Standards and CALGreen are updated tri-annually with a goal to achieve net zero energy (NZE) for residential buildings by 2020 and non-residential buildings by 2030. The County's green building standards which implement and exceed CALGreen are identified County Code, Title 31. The County has adopted the Voluntary Tier°1 standards for non-residential construction greater than or equal to 25,000 square feet (Section 301.3.1, *Buildings greater than or equal to 25,000 square feet*).[8] Newly constructed high-rise residential buildings of seven stories or greater are also required to comply with Section 301.3, which requires implementation of the Voluntary Tier°1 standards. Newly constructed low-rise and high-rise residential buildings (six stories or less) are only required to comply with the mandatory measures of CALGreen.

RR GHG-2 New buildings are required to adhere to the California Green Building Standards Code (CALGreen) requirement to provide bicycle parking for new non-residential buildings, or meet local bicycle parking ordinances, whichever is stricter (CALGreen Sections 5.106.4.1, 14.106.4.1, and 5.106.4.1.2). Non-residential construction would be required to provide anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of new visitor motorized vehicle parking spaces being added. For employee, long-term secured bicycle parking is required to be provided for five percent of the tenant-occupied (i.e., staff) motorized vehicle parking spaces being added. The Proposed Project is also required to designate parking for low-emitting, fuel-efficient, and carpool/vanpool spaces identified in CALGreen. Non-residential buildings of 25,000 square feet or more also requires compliance with the Tier°1 voluntary measures in section A5.601.2.4, which require low-emitting, fuel-efficient, and carpool/vanpool spaces for 10 percent of the total parking capacity.

RR GHG-3 New buildings are required to adhere to the California Green Building Standards Code (CALGreen) and Water Efficient Landscape Ordinance (WELO) requirements integrated into the County Code to increase water efficiency and reduce urban per capita water demand. The County's green building standards are identified County Code, Title 31. Non-residential structures and residential structures seven stories and higher are also required to comply with Section 301.3.1, *Nonresidential Buildings greater than or equal to 25,000 square feet*,

[8] With the exception that high-rise non-residential construction would be subject to the mandatory (Table A4.106.5.1(3)), rather than the Tier 1 voluntary, measures for solar reflectance in Table A5.106.11.2.2.

which requires implementation of the Tier°1 voluntary standards (30 percent reduction) for indoor potable water use and 60 percent of Reference evapotranspiration (ETo) for outdoor potable water use; Section 5.106.4, *Low Impact Development*; and Section 4.106.5, *Landscape Design*, which requires use of non-invasive drought tolerant plants. Title 31 requires project designs and practices that will result in the conservation of water and energy resources, such as measures for building commissioning, clean vehicle parking, and solid waste recycling.

RR GHG-4 Construction contractors within Los Angeles County are required to adhere to the County's *Construction & Demolition (C&D) Debris Recycling and Reuse Ordinance*, Chapter 20.87 of the Los Angeles County Code. The County's C&D requirements are consistent with CALGreen requirements and require construction contractors to divert a minimum of 50 percent of the construction generated waste from area landfills, depending on the type and intensity of construction. Construction contractors would be required to divert a minimum of 65 percent of the C&D debris by weight and submit a Recycling and Reuse Plan to the County's Construction & Demolition Unit for review and approval. Additionally, according to the County's Green Building Ordinance, non-residential construction of 25,000 square feet or more requires implementation of CALGreen Tier°1 voluntary standards, the Proposed Project building materials will include a minimum of 10 percent of recycled content based on estimated cost.

RR GHG-5 Construction activities will be conducted in compliance with 13 California Code of Regulations (CCR) Section 2499, which requires that nonessential idling of construction equipment is restricted to five minutes or less.

5.5.3.2 PROJECT DESIGN FEATURES

PDF GHG-1 **Torrance Boulevard.** The West Carson TOD Specific Plan proposes the addition of Class II bicycle facilities along Torrance Boulevard to improve connections to the regional bikeway network, which includes the proposed 208th Street multi-use path and the Dominguez Channel located in the neighboring City of Carson. The Specific Plan also encourages the provision of community facilities, such as community centers, community gardens, and libraries, as well as enhancements to the pedestrian environment such as landscaping, street trees, and lighting to encourage more pedestrian activity and social interactions.

PDF GHG-2 **Vermont Avenue.** The Specific Plan introduces mixed-use and higher density residential development along Vermont Avenue to activate the corridor and encourage more pedestrian activity. The Specific Plan will also introduce streetscape improvements including a striped buffer between existing Class II bicycle facilities and on-street parking in order to improve bicycling safety and landscaped medians to improve overall aesthetics along the corridor.

PDF GHG-3 **Normandie Avenue.** The Specific Plan proposes wider sidewalks along Normandie Avenue to accommodate high levels of pedestrian activity generated from the Harbor-UCLA Medical Center and the adjacent proposed mixed-use land use. The Specific Plan also

introduces a Class II bicycle facility along Normandie Avenue to improve connections to the greater regional bikeway network.

PDF GHG-4 **Carson Street.** The Specific Plan proposes mixed-use and higher density development along and adjacent to Carson Street to lay the foundation for a more livable and sustainable corridor that works to improve air quality, traffic congestion, and mobility. The Specific Plan introduces wider sidewalks, landscaping, street trees, reduced on-street parking, striped buffers between existing bicycle facilities and vehicular traffic, and a multi-use pathway to support active modes of transportation. The Specific Plan also encourages the provision of transit amenities, such as shelters, benches, lighting, wayfinding, service route maps and information, and streetscape improvements that focus on facilitating the safe and efficient movement of transit.

PDF GHG-5 **223rd Street.** The Specific Plan introduces both a Class II and a Class III bicycle facility along various segments of the corridor to improve connectivity to the regional bikeway network. The proposed bicycle facilities are also intended to provide first-last mile solutions to transit within the West Carson area. Additionally, a road diet is proposed along a segment of the corridor, between Normandie Avenue and Vermont Avenue, to decrease traffic volumes and improve safety for bicyclists and pedestrians.

PDF-GHG-6 **Metro Silver Line Transit Stop Relocation Along I-110.** The existing Harbor Freeway/Carson Street transit stop is accessed via a stairway from the Carson Street overpass. Although lighting exists at the transit stop, the stop lacks a sense of transparency, or the degree to which an individual can see or perceive what lies beyond the edge of a street or public space in order to feel safe. Additionally, high travel speeds along the freeway also impact perceived safety as the existing stop fronts I-110. To improve transit access and safety, the Specific Plan encourages coordination with Metro to move the existing transit stop from underneath the Carson Street overpass to a new location along I-110. Relocating the stop from underneath the overpass would enhance visibility of waiting transit patrons and improve safety.

PDF GHG-7 **Bicycle Parking.** The West Carson TOD Specific Plan provides modifications to the existing bicycle parking requirements contained in Chapter 22.52.1225 of Title 22 of the County's Code of Ordinances. The proposed modifications to the existing bicycle parking requirements are intended to provide a bicycle parking supply that supports TOD districts and encourages the use of bicycling as an alternative mode of transportation (see Table 4.1, *Minimum Bicycle Parking Requirements*, in the Specific Plan).

PDF GHG-8 **Parking Standards.** The existing parking supply within the Specific Plan area is comprised of a combination of on-street and off-street parking resources. The West Carson TOD Specific Plan provides modifications to the parking requirements contained in Chapter 22.112 of Title 22 of the County's Code of Ordinances. These modifications are intended to provide a parking supply that supports TOD districts and allows for greater flexibility in the

provision of minimum parking spaces (see Table 4.2, Parking Requirements, in the Specific Plan).

5.5.4 Environmental Impacts

5.5.4.1 METHODOLOGY

This GHG evaluation was prepared in accordance with the requirements of CEQA to determine if significant GHG impacts are likely to occur in conjunction with the proposed project. SCAQMD has published guidelines that are intended to provide local governments with guidance for analyzing and mitigating environmental impacts and which were used in this analysis. Modeling of GHG was conducted using CalEEMod, version 2016.3.1. Life cycle emissions are not included in this analysis because not enough information is available for the proposed project, and therefore life cycle GHG emissions would be speculative.[9] Black carbon emissions are not included in the GHG analysis because CARB does not include this pollutant in the state's AB 32 inventory and treats this short-lived climate pollutant separately.[10] Industrial sources of emissions that require a permit from SCAQMD (permitted sources) are not included in the West Carson TOD Specific Plan community inventory since they have separate emission reduction requirements. Emissions associated with any improvements to the Harbor University of California Los Angeles (UCLA) Medical Center are also not included in the community inventory because they are not a part of the proposed Specific Plan. GHG modeling is included in Appendix D of this Draft EIR.

The analysis in this section is based on buildout of the proposed project as modeled using CalEEMod, version 2016.3.1, for the following sectors:

- **Transportation.** On-road transportation sources are based on trip generation rates and VMT provided by IBI Group (see Appendix I).

- **Energy Use.** Electricity and natural gas use is based on the rates identified in CalEEMod version 2016.3.1 and the carbon intensity for Southern California Edison's (SCE) electricity. Existing residential and nonresidential building energy use modeled using historical energy demand rates in CalEEMod. New buildings would achieve the 2016 Building Energy Efficiency Standards at a minimum, which are 28 percent more energy efficient for residential buildings and 5 percent more energy efficient for non-residential buildings.

[9] 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 lifecycle analyses was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the Proposed Project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).

[10] Particulate matter emissions, which include black carbon, are analyzed in Section 5.2, *Air Quality*. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The State's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within 10 years (CARB 2017b).

- **Water/Wastewater.** GHG emissions from this sector are associated with the embodied energy used to supply water, treat water, distribute water, and then treat wastewater and fugitive GHG emissions from wastewater treatment. Emissions are based on wastewater consumption rates identified in IBI Group's Infrastructure Report (Appendix J).

- **Solid Waste Disposal.** Indirect emissions from waste generation are based on the solid waste generation rates identified in Section 5.15, *Utilities and Service Systems*, which are based on rates identified by CalRecycle.

- **Area Sources.** GHG emissions from this sector are from use of landscaping equipment used for property maintenance and consumer products (e.g., cleaning supplies, etc.).

- **Construction.** GHG emissions are from construction-related vehicle and equipment use are based on a worst-case emissions scenario for buildout of the Specific Plan. Because there is no defined development schedule for these future projects at this time, the maximum daily emissions are based on a very conservative scenario, where several construction projects throughout the West Carson TOD Specific Plan area would occur at the same time and all construction phases would overlap. The amount of construction assumed is consistent with the approximately 20-year anticipated buildout of the West Carson TOD Specific Plan area. Emissions are amortized over a 30-year period and included as part of the overall inventory.

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.5-1: Development of the proposed project would result in a substantial increase of GHG emissions. [Threshold GHG-1]

Impact Analysis: Development under the proposed project would contribute to global climate change through direct and indirect emissions of GHG from land uses within the West Carson TOD Specific Plan. The proposed project would result in a net increase of 2,170 dwelling units, 100 transitional housing units at the Harbor UCLA Medical Center, and 1,704,985 million non-residential square feet, resulting in an increase in 7,024 residents and 3,592 employees in the plan area. Buildout of the proposed project is not linked to a specific development time frame. Development that would be accommodated by the West Carson TOD Specific Plan would generate a net increase of 29,488 weekday average daily trips ends, resulting in 325,052 additional daily VMT at project buildout (see Appendix I). For the purpose of this EIR, buildout is assumed over a 20-year project horizon. GHG emissions from construction activities are amortized into the operational phase GHG emissions inventory to account for one-time emissions from construction in accordance with SCAQMD methodology. The community GHG emissions inventory for West Carson TOD Specific Plan at buildout compared to existing conditions is in Table 5.5-7, *West Carson TOD Specific Plan GHG Emissions Forecast*.

Table 5.5-7 West Carson TOD Specific Plan GHG Emissions Forecast

Sector	GHG Emissions $MTCO_2e$/Year			
	Existing	Specific Plan Buildout	Percent	Change from Existing
Area	343	905	1%	562
Energy[1]	9,141	23,264	21%	14,123
On-Road Transportation[2]	54,850	77,134	71%	22,283
Solid Waste Disposal	2,014	3,990	4%	1,975
Water/Wastewater[3]	968	2,269	2%	1,301
Amortized Construction[4]	0	859	1%	859
Total	67,316	108,420	100%	41,104
Service Population (SP)[5]	10,522	21,138	—	9,015
$MTCO_2e$/SP	6.40	5.13	—	(-1.27)
2035 Efficiency Threshold	—	2.4	—	—
Exceed Threshold?	—	Yes	—	—

Source: CalEEMod 2016.3.1. Based on 2035 emission rates and IPCC's AR4 GWPs. Totals may not equal 100 percent due to rounding.
Notes: Industrial sources of emissions that require a permit from SCAQMD (permitted sources) are not included in the West Carson TOD Specific Plan community inventory since they have separate emission reduction requirements. Emissions associated with any improvements to the Harbor UCLA Medical Center are also not included in the community inventory because they are not a part of the proposed Specific Plan.
Notes: Totals may not add to 100 percent due to rounding. $MTCO_2e$: Metric Tons of Carbon Dioxide-Equivalent.
[1] Existing residential and nonresidential building energy use modeled using historical energy demand rates in CalEEMod. Consistent with RR GHG-1, new buildings would achieve the 2016 Building Energy Efficiency Standards.
[2] Transportation emissions are based on trip generation and VMT provided by IBI Group.
[3] Water use is based on the wastewater demand rates provided by IBI Group.
[4] Short-term (one time) total construction emissions during the 20-year buildout are amortized over a 30-year project lifetime in accordance with SCAQMD guidance and incorporated into the operational emissions analysis.
[5] Existing based on a service population of 3,879 people and 6,643 employees. West Carson TOD Specific Plan buildout based on a service population of 10,903 residents and 13,479 employees.

As shown in Table 5.5-7, the net increase in GHG emissions of 41,104 $MTCO_2e$ annually from project-related operational activities would exceed SCAQMD's draft bright-line screening threshold of 3,000 $MTCO_2e$ for all land use types. The increase in overall land use intensity and associated population and employment growth within the West Carson TOD boundaries is the primary factor for the increase in overall GHG emissions. Under the West Carson TOD Specific Plan, increase in land use development would result in a 101 percent increase in the total service population. Although the West Carson TOD Specific Plan would result in a substantial increase in GHG emissions, it would also result in a 20 percent decrease in GHG emissions per person. As shown in Table 5.5-7, the GHG emissions per service population rate would decrease from 6.40 $MTCO_2e$/year/SP to 5.13 $MTCO_2e$/year/SP.

The improvement in per service population efficiency would be attributable to the overall land use plan and development standards of the West Carson TOD Specific Plan. Placement of land uses that complement each other in addition to improvements in access to alternative transportation options contribute to reducing per capita VMT. Aside from the policies and strategies to reduce VMT/SP, new buildings under the West Carson TOD Specific Plan would be more energy efficient than existing buildings throughout the Specific Plan area. Likewise, new plumbing fixtures and landscaping would result in a decrease in water use on a per capita basis. These aspects of the West Carson TOD Specific Plan would contribute to the overall reduction of GHG emissions per service population.

However, although implementation of West Carson TOD Specific plan would result in a decrease in GHG emissions per service population, it would not meet the forecast target efficiency metric of 2.4 $MTCO_2e$/year/SP based on the long-term GHG reduction goals of SB 32 and trajectory to achieve the Executive Order S-03-05. Additional state and local actions are necessary to achieve the post-2030 GHG reduction goals for the state. At this time, no additional GHG reductions programs have been outlined that get the state to the post-2030 targets identified in Executive Order S-03-05, which are an 80 percent reduction in 1990 emissions by 2050. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advances in technology (CCST 2012). Therefore, the proposed project's cumulative contribution to the long-term GHG emissions in the state would be considered potentially significant.

Level of Significance before Mitigation: Upon implementation of regulatory requirements, Impact 5.5-1 would be potentially significant.

Impact 5.5-2: The proposed project would not conflict with the plans adopted for the purpose of reducing GHG emissions. [Threshold GHG-2]

Impact Analysis: Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan, SCAG's 2016-2040 RTP/SCS, and the Los Angeles County CCAP. A consistency analysis with these plans is presented below.

CARB Scoping Plan

In accordance with AB 32, CARB developed the 2008 Scoping Plan to outline the state's strategy established by AB 32, which is to return to the state's GHG emissions inventory to 1990 levels by year 2020. In September 2016, SB 32 was signed into law, requiring the state's GHG emissions to return to 40 percent below 1990 levels by 2030. Executive Order B-30-15 and SB 32 require CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On January 20, 2017, CARB released the draft 2017 Climate Change Scoping Plan to address the new interim GHG emissions target under Senate Bill 32. The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

The 2017 Climate Change Scoping Plan has adoption hearings planned for June 2017, and provides the strategies for the state to meet the 2030 GHG reduction target as established under SB 32. Statewide strategies to reduce GHG emissions in the 2017 Climate Change Scoping Plan include implementing Senate Bill 350, which expands the Renewables Portfolio Standard to 50 percent by 2030 and doubles energy efficiency savings; expanding the Low Carbon Fuel Standard to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementing the Sustainable Freight Action Plan; implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons 40 percent below 2013 levels by 2030 and black carbon emissions 50 percent below 2013 levels by 2030; continuing to implement Senate Bill 375; creating a post-2020 Cap-and-Trade Program; establishing a new regulation to reduce GHG emissions from the refinery sector by 20 percent; and

developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink (CARB 2017a).

The project GHG emissions shown in Table 5.5-7 include reductions associated with statewide strategies that have been adopted since AB 32 and SB 32. The proposed project would comply with these GHG emissions reduction measures since they are statewide strategies. In addition, future buildings constructed over the lifetime of the project would be subject to the future triannual updates to the Building and Energy Efficiency Standards, which will ultimately require zero net energy (ZNE) construction. Sustainable development practices identified in the West Carson TOD include:

- Policy 7.1. Encourage resource-efficient building techniques, materials, and other principles of green building design in new construction, renovation, and landscaping.

- Policy 7.2. Incorporate "green" building practices into the planning, design, construction, and operation of County-owned facilities.

- Policy 7.3. Promote tree planting in the public and private realm for shade, cooling, and aesthetic benefits.

However, the Scoping Plan itself is not directly applicable to the proposed project. Therefore, the proposed project would not obstruct implementation of the CARB Scoping Plan, and impacts would be less than significant.

SCAG's 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy

SCAG adopted the 2016-2040 RTP/SCS in April 2016 pursuant to the requirements of SB 375. SCAG's RTP/SCS identifies that land use strategies that focus on new housing and job growth in areas served by high quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategy in the 2016 RTP/SCS is to provide for a plan that allows the southern California region to grow in more compact communities in existing urban areas; provide neighborhoods with efficient and plentiful public transit, abundant and safe opportunities to walk, bike, and pursue other forms of active transportation; and preserve more of the region's remaining natural lands (SCAG 2016). The 2016 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, as well as a forecast development that is generally consistent with regional-level general plan data. The projected regional development pattern, when integrated with the proposed regional transportation network identified in the RTP/SCS, would reduce per capita vehicular travel–related GHG emissions and achieve the GHG reduction per capita targets for the SCAG region.

The RTP/SCS does not require that local general plans, specific plans, or zoning be consistent with the RTP/SCS, but provides incentives for consistency for governments and developers. The 2016 RTP/SCS SCAG anticipates lowering GHG emissions below 2005 levels by 8 percent by 2020, 18 percent by 2035, and 22 percent by 2040 (SCAG 2016). Key strategies in the SCAG's RPT/SCS are identified in Table 5.10-3, *Consistency with SCAG's 2016-2040 RTP/SCS Goals,* in Section 5.10, *Land Use and Planning*. Table 5.5-8, *SCAG 2016 RTP/SCS Transportation-Land Use Consistency*, evaluates the project in comparison to the three primary transportation-land use strategies in the RTP/SCS.

Table 5.5-8 SCAG 2016 RTP/SCS Transportation-Land Use Consistency

SCAG Transportation-Land Use Strategies	Implementing Policies/Strategies	Consistency
Focusing new growth around High Quality Transit Areas (HQTA). The 2016 RTP/SCS overall land use pattern reinforces the trend of focusing new housing and employment in the region's HQTAs. The 2016 RTP/SCS assumes that 46 percent of new housing and 55 percent of new employment locations developed between 2012 and 2040 will be located within HQTAs, which comprise only three percent of the total land area in the SCAG region (SCAG 2016).	Additional local policies that ensure that development in HQTAs achieve the intended reductions in VMT and GHG emissions include: ▪ Affordable housing requirements ▪ Reduced parking requirements ▪ Adaptive reuse of existing structures ▪ Density bonuses tied to family housing units such as three- and four bedroom units ▪ development standards that include local serving retail ▪ Increased Complete Streets investments around HQTAs.	Consistent: Nearly the entire Specific Plan area (except a small area in the far northeast corner of the site, southeast of the intersection of Vermont Avenue and Torrance Boulevard) is designated within an HQTA (SCAG 2017a). Additionally, the proposed project is designated within a Transit Priority Area (SCAG 2017b) because it is within a quarter mile of a high frequency transit stop. The proposed project would increase residential land and nonresidential land use intensities within this HQTA. Land use policies of the Specific Plan include: ▪ Policy 5.1. Provide a variety of housing choices within a half-mile distance to the Carson Metro Silver Line Station. ▪ Policy 5.2. Incentivize mixed uses in specific areas to encourage employment-generating uses near the Metro Silver Line Station. ▪ Policy 5.3. Reduce parking standards and incorporate parking garages along major corridors to increase the viability of development. The West Carson TOD would make Carson Street and Vermont Avenue more user friendly for all modes of travel, especially pedestrians and bikes (see PDF GHG-1 through PDF GHG-5).
Plan for growth around Livable Corridors. SCAG's livable corridors strategy seeks to revitalize commercial strips through integrated transportation and land use planning that results in increased economic activity and improved mobility options.	Additional livable corridors strategies include: ▪ Transit improvements, including dedicated lane Bus Rapid Transit (BRT) or semi-dedicated BRT-light. The remaining corridors have the potential to support other features that improve bus performance (enhanced bus shelters, real-time travel information, off-bus	Consistent: Livable corridors are predominantly a subset of the HQTAs; however, 154 miles are not designated as HQTAs in SCAG's RTP/SCS. These additional miles were identified in Sustainability Planning Grant projects, which SCAG proposes for

Table 5.5-8 SCAG 2016 RTP/SCS Transportation-Land Use Consistency

SCAG Transportation-Land Use Strategies	Implementing Policies/Strategies	Consistency
	ticketing, all door boarding, and longer distances between stops to improve speed and reliability). ▪ Active transportation improvements: Livable corridors include increased investments in complete streets to make these corridors and the intersecting arterials safe for biking and walking. ▪ Land use policies: Livable corridor strategies include the development of retail centers at key nodes along the corridors, increasing neighborhood-oriented retail at more intersections and zoning that allows for the replacement of underperforming auto-oriented strip retail between nodes with higher density residential and employment.	active transportation improvement. The Specific Plan incorporates a Mobility and Public Realm Strategy that transforms the current circulation network into one that places a higher priority on the principles of complete streets and multimodal design. The West Carson TOD Specific Plan would make the area more user friendly for all modes of travel. The Specific Plan would establish a connected pedestrian and bicycle network that links the Metro Silver Line Station, Harbor UCLA Medical Center, residential neighborhoods, local schools, and retail corridors (see PDF GHG-1 through PDF GHG-5). To improve transit access and safety, the Specific Plan proposes to coordinate with Metro to move the existing transit stop from underneath the Carson Street overpass to a new location along I-110 to enhance visibility of waiting transit patrons and improve safety (see PDF GHG-6). The Specific Plan would encourage a greater mix of uses along this livable corridor.
Provide more options for short trips in Neighborhood Mobility Areas and Complete Communities: Neighborhood mobility areas have a high intersection density, low to moderate traffic speeds and robust residential retail connections. These areas are suburban in nature, but can support slightly higher density in targeted locations. The land use strategies include shifting retail growth from large centralized retail strip malls to smaller distributed centers throughout a neighborhood mobility area.	▪ Neighborhood mobility area land use strategies include pursuing local policies that encourage replacing motor vehicle use with neighborhood electric vehicle (NEV) use. NEVs are a federally designated class of passenger vehicle rated for use on roads with posted speed limits of 35 miles per hour or less. Steps needed to support NEV use include providing state and regional incentives for purchases, local planning for charging stations, designating a local network of low speed roadways, and adopting local regulations that allow smaller NEV parking stalls. ▪ Complete communities strategies include creation of districts through a concentration of activities with housing, employment, and a mix of retail and services in close proximity to each other. Focusing a mix of land uses in strategic growth areas creates complete communities where most daily needs can be met within a short distance of home, providing residents with the opportunity to patronize their local area and run daily errands by walking or cycling rather than traveling by automobile.	Consistent: The Specific Plan would provide a greater mix of uses in the project area in the vicinity of the Metro Silver Line Station. The West Carson TOD is one of the TOD areas identified in the County of Los Angeles 2035 General Plan for implementing smart growth and providing healthy, livable, and equitable communities. The intent of the West Carson TOD Specific Plan is to expand opportunities for compact, infill development that is compatible with and supports the intensification of Harbor-UCLA Medical Center. The plan facilitates increased housing opportunities and employment-generating uses proximate to the Carson Street (rapid bus transitway) station to take advantage of the significant local and regional transit services already provided in the area. The Specific Plan would improve connections between the Metro Silver Line Station, Harbor-UCLA Medical Center, local schools, and existing residential neighborhoods through

Table 5.5-8 SCAG 2016 RTP/SCS Transportation-Land Use Consistency

SCAG Transportation-Land Use Strategies	Implementing Policies/Strategies	Consistency
		right-of-way and streetscape improvements. The Specific Plan lays the foundation to create a more walkable, transit-oriented area with a mix of land uses that is accessible by all modes of transportation, including transit, walking, and bicycling.

Source: SCAG 2016.

The West Carson Specific Plan would be consistent with SCAG's regional goals of providing infill housing, improving the jobs-housing balance, and integrating land uses near major transportation corridors. Building upon the recommendations of the RTP/SCS, the Specific Plan incorporates a Mobility and Public Realm Strategy that describes the circulation improvements needed to support TOD within the Specific Plan. A key component of the Specific Plan is the transformation of the current circulation network, which largely supports vehicular travel, to a network that places a higher priority on the principles of complete streets and multimodal design. To achieve the West Carson TOD vision, the Specific Plan proposes the following policies:

- Policy 1.1: Implement complete streets designs that contribute to a multi-modal transportation system.
- Policy 1.2: Ensure that roadway improvements allow for easier, safer, and more efficient transit operations, as well as improved passenger safety and accessibility.
- Policy 1.3: Consult with local transit operators to provide attractive and convenient bus stops, including shade/weather protection, seats, transit information, and bus shelters where appropriate.
- Policy 1.4: Consider the interactions between bus and bicyclists and design bus stops that will help minimize conflicts.
- Policy 2.1: Establish a connected pedestrian and bicycle network that links the Metro Silver Line Station, Harbor UCLA Medical Center, residential neighborhoods, local schools, and retail corridors.
- Policy 2.2: Complete bicycle infrastructure improvements that close gaps in the County's Bicycle Master Plan and those providing connections to adjacent communities to enhance regional connectivity.
- Policy 2.3: Identify opportunities to create dedicated bicycle lanes and pedestrian sidewalks that connect the neighborhood and commercial areas to community services.
- Policy 2.4: Establish and maintain attractive and functional sidewalks that maximizes accessibility, enhances the pedestrian environment, and fosters social interaction.

- Policy 2.5: Design bicycle and pedestrian infrastructure in accordance with federal, state, and local design standards, including ADA accessibility standards.

- Policy 3.1: Implement streetscape features such as street lighting, street trees, landscaping, and wayfinding to create safer and attractive corridors.

- Policy 3.2: Integrate pedestrian amenities, such as benches and public art to transform the streetscape and create public space.

- Policy 3.3: Identify new opportunities to incorporate public park and open space improvements within the area that provide small-scale, but well-designed outdoor areas for unstructured play and socializing.

- Policy 4.1: Utilize shared parking where possible and establish guidelines and standards to optimize parking supply.

- Policy 4.2: Encourage and allow shared parking for new development in lieu of the provision of off-street parking spaces.

The West Carson TOD Specific Plan proposes the addition of Class II bicycle facilities along Torrance Boulevard and Normandie Avenue to improve connections to the regional bikeway network. Along Vermont Avenue, the Specific Plan proposes a striped buffer between existing Class II bicycle facilities and on-street parking in order to improve bicycling safety. Along Carson Street, the Specific Plan would reduce on-street parking and provide striped buffers between existing bicycle facilities and vehicular traffic, and a multiuse pathway to support active modes of transportation.

Another key component of the Specific Plan is to improve accessibility to the existing transit system and the overall transit experience. The Specific Plan area encompasses a rich transit network that is serviced by three local transit agencies—Metro, Torrance Transit, and Gardena Municipal. To improve transit access and safety, the Specific Plan proposes to coordinate with Metro to move the existing transit stop from underneath the Carson Street overpass to a new location along I-110 to enhance visibility of waiting transit patrons and improve safety.

As identified in Section 5.14, *Transportation and Traffic*, implementation of West Carson TOD Specific Plan would result in a decrease in annual VMT per service population from 134,863 VMT/SP/Yr to 100,336 VMT/SP/Yr, which is consistent with regional goals to reduce passenger VMT (see Appendix I). Therefore, the proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the 2016-2040 RTP/SCS. No impact would occur and no mitigation measures are required.

Los Angeles County CCAP

The County adopted a CCAP on October 6, 2015. The CCAP identifies and evaluates feasible and effective policies to reduce GHG emissions in order to reduce energy costs, protect air quality, and improve the economy and the environment. The policies identified in the proposed CCAP represent the County's actions to achieve the GHG reduction targets of AB 32 for target year 2020. A consistency analysis with the

proposed project to the applicable measures in the CCAP is shown in Table 5.5-9, *Consistency with the Unincorporated Los Angeles County Community Climate Action Plan*. As identified in the table, the proposed project would be consistent with the measures in the CCAP. Therefore, the proposed project would not conflict with the CCAP and impacts are considered less than significant.

Table 5.5-9 Consistency with the Unincorporated Los Angeles County Community Climate Action Plan

#	Applicable Measure	Consistency
BE-1	Green Building Development. Promote and incentivize at least Tier 1 voluntary standards within CALGreen for all new residential and nonresidential buildings. Develop a heat island reduction plan and facilitate green building development by removing regulatory and procedural barriers.	Consistent: The 2016 Building and Energy Efficiency Standards become effective January 1, 2016, and would be applicable to the proposed project. Pursuant to the County's Green Building Ordinance, nonresidential buildings over 25,000 square feet and residential buildings seven stories high and taller would be required to achieve the Tier 1 energy standards. New buildings would replace existing structures that were constructed prior to adoption of the California Building and Energy Efficiency Code; these newer facilities would achieve the latest Building and Energy Efficiency Standards (see RR GHG-1).
BE-3	Solar Installations. Promote and incentivize solar installations for new and existing homes, commercial buildings, carports and parking areas, water heaters, and warehouses.	Consistent: The current Building and Energy Efficiency Standards do not mandate that new homes have solar panels. However, they require that new buildings be constructed to accommodate the rooftop load and wiring necessary to support solar panels. In accordance with Executive Order B-30-15, approximately 50 percent of total energy demand in the state would be through renewable resources in order to achieve the 50 percent RPS goal by 2030.
LUT-1	Bicycle Programs and Supporting Facilities. Construct and improve bicycle infrastructure to increase biking and bicyclist access to transit and transit stations/hubs. Increase bicycle parking and "end-of-trip" facilities offered through the unincorporated County.	Consistent: (See PDF GHG-1 through PDF GHG -5). The West Carson TOD Specific Plan proposes the addition of Class II bicycle facilities along Torrance Boulevard and Normandie Avenue to improve connections to the regional bikeway network. Along Vermont Avenue, the Specific Plan proposes a striped buffer between existing Class II bicycle facilities and on-street parking in order to improve bicycling safety. Along Carson Street, the Specific Plan would reduce on-street parking and provide striped buffers between existing bicycle facilities and vehicular traffic, and a multiuse pathway to support active modes of transportation. Additionally, the Specific Plan provides modifications to the existing bicycle parking requirements to provide a bicycle parking supply that supports TOD districts and encourages the use of bicycling as an alternative mode of transportation (see PDF GHG-7).

Table 5.5-9 Consistency with the Unincorporated Los Angeles County Community Climate Action Plan

#	Applicable Measure	Consistency
LUT-2	Pedestrian Network. Construct and improve pedestrian infrastructure to increase walking and pedestrian access to transit and transit stations/hubs. Program the construction of pedestrian projects toward the goal of completing 15,000 linear feet of new pedestrian improvements/amenities per year.	Consistent: The Specific Plan incorporates a Mobility and Public Realm Strategy that transforms the current circulation network into one that places a higher priority on the principles of complete streets and multimodal design. The West Carson TOD Specific Plan would make the area more user friendly for all modes of travel. The Specific Plan would establish a connected pedestrian and bicycle network that links the Metro Silver Line Station, Harbor UCLA Medical Center, residential neighborhoods, local schools, and retail corridors (see PDF GHG-1 through PDF GHG-5). The pedestrian bridge that crosses over I-110 and is accessed via a walkway at 220th Street has low levels of visibility and poor lighting conditions. The Specific Plan proposes to improve safety at the bridge by incorporating overhead lighting as well as lighting along the proposed handrails. The Specific Plan also includes design guidelines for streetscape design (street trees, seating, street lights, public art, and furnishings) to encourage this mode of travel.
LUT-3	Transit Expansion. Collaborate with the Los Angeles County Metropolitan Transportation Authority (Metro) on a transit program that prioritizes transit by creating bus priority lanes, improving transit facilities, reducing transit-passenger time, and providing bicycle parking near transit stations. Construct and improve bicycle, pedestrian and transit infrastructure to increase bicyclist and pedestrian access to transit and transit stations/hubs.	Consistent: The West Carson TOD Specific Plan recognizes that station access is a key element in successful TOD station area planning and has identified strategies that focuses on improving accessibility during the first and last miles of a transit rider's journey. These strategies include streetscape improvements, bicycle and pedestrian infrastructure improvements, and signage and wayfinding improvements. Additionally, the Specific Plan would establish a connected pedestrian and bicycle network that links the Metro Silver Line Station, Harbor UCLA Medical Center, residential neighborhoods, local schools, and retail corridors (see PDF GHG-1 through PDF GHG-5). To improve transit access and safety, the Specific Plan proposes to coordinate with Metro to move the existing transit stop from underneath the Carson Street overpass to a new location along I-110 to enhance visibility of waiting transit patrons and improve safety (see PDF GHG-6).
LUT-4	Travel Demand Management. Encourage ride- and bike-sharing programs and employer sponsored vanpools and shuttles. Encourage market-based bike sharing programs that support bicycle use around and between transit stations/hubs. Implement marketing strategies to publicize these programs and reduce commute trips.	Consistent: The Specific Plan includes both short-term and long-term bicycle parking standards for new nonresidential uses to encourage bicycle use around and between transit stations to reduce commute trips (see PDF GHG-7). The Specific Plan would not preclude the future installation of a bike sharing program. Mitigation Measure AQ-5 requires preferential parking for low-emitting, fuel-efficient, and carpool/van vehicles for nonresidential buildings.
LUT-5	Car Sharing Program. Implement a car-sharing program to allow people to have on-demand access to a shared fleet of vehicles.	Consistent: This measure is not directly applicable to the West Carson TOD Specific Plan. However, car-sharing services are available to residents, employees, and visitors in the West Carson area (e.g., ZipCar), as are service-based vehicle programs (e.g., Uber, Lyft) The Specific Plan would not conflict with this GHG reduction measure.
LUT-6	Land Use Design and Density. Promote sustainability in land use design, including diversity of urban and suburban developments.	Consistent: The Specific Plan introduces mixed-use and higher density residential development within West Carson to activate the local corridors and encourage more pedestrian, bicycle, and transit activity. The Specific Plan would accommodate mixed-use and higher density development along and adjacent to Carson Street to lay the foundation for a more livable and sustainable corridor.

Table 5.5-9 Consistency with the Unincorporated Los Angeles County Community Climate Action Plan

#	Applicable Measure	Consistency
LUT-7	Transportation Signalization Program. Improve the network of traffic signals on the major streets throughout LA County.	Consistent: This measure is not directly applicable to the Specific Plan. The County of Los Angeles maintains a traffic signal signalization program (TSSP) to improve the network of traffic signals. The typical TSSP project involves upgrading all the traffic signals along a route to keep the signals synchronized, placing vehicle detectors in the pavement, coordinating the timing of the signals between successive intersections, and automatically adjusting the traffic signals to facilitate the movement of vehicles through the intersections. The Specific Plan would not conflict with this measure.
LUT-8	Electric Vehicle Infrastructure. Install 500 electric vehicle (EV) charging facilities at County owned public venues (e.g., hospitals, beaches, stand-alone parking facilities, cultural institutions, and other facilities) and ensure that at least one-third of these charging stations will be available for visitor use.	Consistent: This measure is not directly applicable to the Specific Plan as it pertains to County-owned facilities (e.g., Harbor UCLA Medical Center). However, CALGreen now requires installation of electric vehicle charging spaces in nonresidential development based on the total number of spaces (2016 CALGreen Table 5.106.5.3.3). Based on a net increase of 1.7 million square feet of nonresidential uses, the proposed minimum parking standards in the Specific Plan (see PDF GHG-8), and the CALGreen requirement that 6 percent of total parking spaces be EV charging spaces, the Specific Plan would result in a minimum of 180 new electric vehicle charging stations within the plan area.
LUT-9	Idling Reduction Goal. Encourage idling limits of 3 minutes for heavy-duty construction equipment, as feasible within manufacturer's specifications.	Consistent: The current idling limit adopted by CARB and local air district regulations is 5 minutes (see RR GHG-5). Compliance with CARB airborne toxic control measures that reduce diesel emissions and Mitigation Measure AQ-1 would also reduce construction vehicle exhaust associated with the proposed project to the extent feasible.
LUT-11	Sustainable Pavements Program. Reduce energy consumption and waste generation associated with pavement maintenance and rehabilitation.	Consistent: This measure is not directly applicable to the Specific Plan. However, pavement maintenance and rehabilitation within the Specific Plan would be conducted in accordance with the latest County policies and procedures. The Los Angeles County Department of Public Works applies a 3-pronged sustainable approach in the rehabilitation, construction, and maintenance of its road network. This approach incorporates principles that (1) focus on taking care of roads that are in good condition first; (2) use recycled materials from recycled tires or aggregates from existing pavement in the treatment selections; and (3) reutilize the existing materials in place by recycling the pavement or adding cement to the subgrade beneath the pavement to improve its strength. The Specific Plan would not conflict with this measure.
LUT-12	Electrify Construction and Landscaping Equipment. Utilize electric equipment wherever feasible for construction projects. Reduce the use of gas-powered landscaping equipment.	Consistent: Pursuant to the California Building Code (Title 24), buildings are now required to include electrical outlets on the exterior of buildings to support the use of electric landscaping equipment.

Table 5.5-9 Consistency with the Unincorporated Los Angeles County Community Climate Action Plan

#	Applicable Measure	Consistency
WAW-1	Per Capita Water Use Reduction Goal. Meet the State established per capita water use reduction goal, as identified by SB X7-7 for 2020.	Consistent: The nonresidential buildings that are 25,000 square feet and larger and residential buildings seven stories or higher would comply with Section 301.3.1, Nonresidential Buildings greater than or equal to 25,000 square feet, which requires implementation of the Tier°1 voluntary standards (30 percent reduction) for indoor potable water use and 60 percent of reference evapotranspiration (ETo) for outdoor potable water use; Section 5.106.4, Low Impact Development; and Section 4.106.5, Landscape Design, which requires use of noninvasive drought-tolerant plants, which would reduce per capita urban water use (see RR GHG-3).
WAW-2	Recycled Water Use, Water Supply Improvement Programs, and Stormwater Runoff. Promote the use of wastewater and gray water to be used for agricultural, industrial, and irrigation purposes. Manage stormwater, reduce potential treatment, and protect local groundwater supplies.	Consistent: The proposed project would not introduce new sources of agriculture or industrial manufacturing. Water used for landscape irrigation would be minimized through implementation of the County's WELO (see RR GHG-3).
SW-1	Waste Diversion Goal. For the County's unincorporated areas, adopt a waste diversion goal to comply with all state mandates associated with diverting from landfill disposal at least 75% of the waste by 2020.	Consistent: In accordance with the County's Construction & Demolition (C&D) Debris Recycling and Reuse Ordinance, Chapter 20.87 of the Los Angeles County Code, development within the Specific Plan would be required to divert a minimum of 65 percent of the C&D debris by weight and submit a Recycling and Reuse Plan to the County's Construction & Demolition Unit for review and approval. Additionally, according to the County's Green Building Ordinance, which requires implementation of CALGreen Tier°1 voluntary standards, the proposed project building materials will include a minimum of 10 percent of recycled content based on estimated cost (see RR GHG-4).
LC-1	Develop Urban Forests. Support and expand urban forest programs within the unincorporated areas.	Consistent. The Specific Plan encourages installation of street trees, especially along pathway arterials. All street trees are required to be planted in accordance with established County planting standards. Street tree standards are identified in the design guidelines for streetscape design.

Source: County of Los Angeles, 2015.
Notes:
Measure BE-2 is a program for existing development and is not applicable to the proposed project. Measure BE-4 is a County-wide program that promotes alternative renewable energies and is not applicable to the proposed project. Measures BE-5 and BE-6 are a County-wide program to encourage use of biogass and energy efficiency retrofits at wastewater treatment facilities and is not applicable to the proposed project. Measure LUT-10 is a Count-wide program for goods movement and it not applicable to the proposed project. Measure LC-2, LC-3, and LC-4 are not applicable to the proposed project because they are County-wide programs that focus on creating and protecting open space areas and promoting the sale of locally grown produce.

Level of Significance before Mitigation: Upon implementation of regulatory requirements, Impact 5.6-2 would be less than significant.

5.5.5 Cumulative Impacts

Project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Therefore, impacts under Impact 5.5-1 are not project-specific impacts, but the proposed project's contribution to the cumulative impact of global warming. Implementation of the proposed project would result in a substantial increase in GHG emissions and would exceed the per service population efficiency

trajectory identified in the 2017 Scoping Plan Update. Thus, the proposed project's GHG emissions and contribution to global climate change impacts are considered cumulatively considerable, and therefore significant.

5.5.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impact would be less than significant: 5.5-2.

- **Impact 5.5-1** Development of the proposed project would result in a substantial increase of GHG emissions.

5.5.7 Mitigation Measures

Impact 5.5-1

The following mitigation measures in Section 5.2, *Air Quality*, apply here and would reduce project-related GHG emissions impacts.

AQ-3 Prior to issuance of a building permit for new development projects within the West Carson TOD Specific Plan, the property owner/developer shall show on the building plans that all major appliances (dishwashers, refrigerators, clothes washers, and dryers) to be provided/installed are Energy Star appliances. Installation of Energy Star appliances shall be verified by the County of Los Angeles prior to issuance of a certificate of occupancy.

Transportation and Motor Vehicles

AQ-4 Prior to issuance of building permits for residential development projects within the West Carson TOD Specific Plan, 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 County of Los Angeles 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.

AQ-5 Prior to issuance of building permits for nonresidential development projects within the West Carson TOD Specific Plan, 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 County of Los Angeles 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 nonresidential building with 30 or more parking spaces. Installation shall be consistent with Section A5.106.5.3 (Nonresidential Voluntary Measures) of the CALGreen Code.

5.5.8 Level of Significance After Mitigation

Impact 5.5-1

RRs GHG-1 through GHG-4 and PDFs GHG-1 through GHG-8 would reduce emissions associated with transportation, energy, and water use within the Specific Plan area. PDFs AIR-1 through AIR-8 identify Specific Plan components that integrate land use and transportation strategies to reduce VMT per service population. Mitigation Measures AQ-3 through AQ-5 would encourage and accommodate use of alternative-fueled vehicles and nonmotorized transportation and ensure that GHG emissions from the buildout of the proposed project would be minimized. However, additional federal, state, and local measures would be necessary to reduce GHG emissions under the proposed project to meet the long-term GHG reduction goals under Executive Order S-03-05 and SB 32. The buildout GHG emissions inventory for the proposed project would generate 5.13 $MTCO_2e$/SP and would exceed the efficiency target of 2.4 $MTCO_2e$/SP. At this time, there is no plan past 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology (CCST 2012). Since no additional statewide measures are currently available, Impact 5.5-1 would remain ***significant and unavoidable***

5.5.9 References

California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model (CalEEMod). Version 2016.3.1. Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

California Air Resources Board (CARB). 2008, October. Climate Change Proposed Scoping Plan: A Framework for Change.

———. 2010a, August. Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375. Staff Report.

———. 2014a, May. California Greenhouse Gas Emission Inventory: 2000-2012. https://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-12_report.pdf.

———. 2014b, May 15. Proposed First Update to the Climate Change Scoping Plan: Building on the Framework. https://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

———. 2015, September 15. ARB Process and Schedule for SB 375 Target Update. http://www.arb.ca.gov/cc/sb375/sb375.htm.

———. 2016, June. 2016 Edition California Greenhouse Gas Inventory for 2000-2014: By Category as Defined in the 2008 Scoping Plan. http://www.arb.ca.gov/cc/inventory/data/data.htm.

———. 2017a, January 20. The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

———. 2017b, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm.

California Climate Action Team (CAT). 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California.

California Council on Science and Technology (CCST). 2012, September. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. http://www.ccst.us/publications/2012/2012ghg.pdf.

California Department of Finance. 2014, December. Report P-1 (County): State and County Total Population Projections, 2010-2060 (5 -year increments). http://www.dof.ca.gov/Forecasting/Demographics/Projections/.

California Department of Transportation. 2016. Long-Term Socio-economic Forecasts by County. http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html.

California Energy Commission (CEC). 2006. Our Changing Climate: Assessing the Risks to California. 2006 Biennial Report. California Climate Change Center. CEC-500-2006-077.

———. 2009. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077.

———. 2015a, June 10. 2016 Building Energy Efficiency Standards: Adoption Hearing Presentation. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents.

———. 2015b. 2016 Building Energy and Efficiency Standards: Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.

California Natural Resources Agency. (CNRA) 2014, July. Safeguarding California: Reducing Climate Risk, An Update to the 2009 California Climate Adaptation Strategy.

Governor's Office of Planning and Research (OPR). 2008, June. CEQA and Climate Change: Addressing Climate Change through CEQA Review. Technical Advisory. http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf.

IBI Group. 2017, March 2010. West Carson Environmental Assessment.

———. 2017, June 9. West Carson TOD Specific Plan Traffic Impact Study.

Intergovernmental Panel on Climate Change (IPCC). 1995. *Second Assessment Report: Climate Change 1995*. New York: Cambridge University Press.

———. 2001. *Third Assessment Report: Climate Change 2001*. New York: Cambridge University Press.

———. 2007. *Fourth Assessment Report: Climate Change 2007*. New York: Cambridge University Press.

———. 2013. *Fifth Assessment Report: Climate Change 2013*. New York: Cambridge University Press.

Los Angeles, County of. 2015, August. Final Unincorporated Los Angeles County Community Climate Action Plan 2020.

South Coast Air Quality Management District (SCAQMD). 2010, September 28. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group: Meeting 15. http://www.aqmd.gov/ceqa/handbook/GHG/2010/sept28mtg/sept29.html.

Southern California Association of Governments (SCAG). 2016, April. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life. http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

———. 2017a. High Quality Transit Areas (2040). SCAG GIS Open Data Portal. Accessed May 1, 2017. http://gisdata-scag.opendata.arcgis.com/datasets/43e6fef395d041c09deaeb369a513ca1_1

———. 2017b. SCAG Transit Priority Areas (2040). GIS Open Data Portal. Accessed May 1, 2017. http://gisdata-scag.opendata.arcgis.com/datasets/c9249b6bba0f49829b67ce104f81ef20_1

US Energy Information Administration (EIA). 2017, January 17. Energy-Related Carbon Dioxide Emissions at the State Level, 2000-2014. https://www.eia.gov/environment/emissions/state/analysis/.

US Environmental Protection Agency (USEPA). 2009, December. EPA: Greenhouse Gases Threaten Public Health and the Environment. http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252.

———. 2017. Overview of Greenhouse Gases. http://www3.epa.gov/climatechange/ghgemissions/gases.html.

5.6 HAZARDS AND HAZARDOUS MATERIALS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts of the West Carson TOD Specific Plan on human health and the environment due to exposure to hazardous materials or conditions associated with the project site, project construction, and project operations. Potential project impacts and appropriate mitigation measures or standard conditions are included as necessary. The analysis in this section is based, in part, upon the following source:

- *Radius Map Report,* Environmental Data Resources, Inc. (EDR), November 10, 2016.

A complete copy of this report is included in the Technical Appendices to this Draft EIR (Volume II, Appendix F).

5.6.1 Environmental Setting

5.6.1.1 RELEVANT PROGRAMS AND REGULATIONS

Federal

Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

Federal hazardous waste laws are generally promulgated under RCRA. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. The California Department of Toxic Substances Control (DTSC) is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency (CUPA) program, the California Environmental Protection Agency (CalEPA) has in turn delegated enforcement authority to the County of Los Angeles for state law regulating hazardous waste producers or generators.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) of 1986

Congress enacted CERCLA, commonly known as Superfund, on December 11, 1980. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. SARA amended the CERCLA on October 17, 1986. SARA stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites; required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; provided new enforcement authorities and settlement tools; increased state involvement in every phase of the Superfund program; increased the focus on human health problems posed by hazardous waste sites; encouraged greater citizen participation in making decisions on how sites should be cleaned up; and increased the size of the trust fund to $8.5 billion.

Emergency Planning Community Right-to-Know Act (EPCRA)

The EPCRA, also known as SARA Title III, was enacted in October 1986. This law requires any infrastructure at the state and local levels to plan for chemical emergencies. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301 through 312 are administered by EPA's Office of Emergency Management. EPA's Office of Information Analysis and Access implements the EPCRA Section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention (CalARP) Program.

Hazardous Materials Transportation Act

The US Department of Transportation (DOT) regulates hazardous materials transportation under Title 49 of the Code of Federal Regulations (CFR). State agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. These agencies also govern permitting for hazardous materials transportation. Title 49 CFR reflects laws passed by Congress as of January 2, 2006.

Federal Response Plan

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies, including the American Red Cross, that: 1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of state and local governments overwhelmed by a major disaster or emergency; 2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and 3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a Presidential declaration of a major disaster or emergency.

Medical Waste Regulations

- Regulations governing hospital, medical, and infectious waste incinerators (40 CFR Parts 60 and 62).
- Regulations governing occupational exposure to blood-borne pathogens administered by the Occupational Safety and Health Administration (OSHA) (29 CFR Part 1910).
- The Food and Drug Administration (FDA) regulates the types of containers used for storing medical wastes (21 CFR Part 864).
- The packaging of medical waste for transport is regulated by the US DOT in 49 CFR Part 173.

State

California Health and Safety Code and Code of Regulations

California Health and Safety Code Chapter 6.95 and 19 California Code of Regulations Section 2729 set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on site. A business that uses hazardous materials or a mixture containing hazardous materials must establish and implement a business plan if the hazardous material is handled in certain quantities.

California Education Code (CEC)

The CEC establishes the law for California public education. CEC requires that the DTSC be involved in the environmental review process for the proposed acquisition and/or construction of school properties that will use state funding. The CEC requires a Phase I Environmental Site Assessment be completed prior to acquiring a school site or engaging in a construction project. Depending on the outcome of the Phase I Environmental Site Assessment, a Preliminary Environmental Assessment and remediation may be required. The CEC also requires potential, future school sites that are proposed within two miles of an airport to be reviewed by Caltrans Division of Aeronautics. If Caltrans does not support the proposed site, no state or local funds can be used to acquire the site or construct the school.

California State Aeronautics Act

The State Aeronautics Act is implemented by Caltrans Division of Aeronautics. The purpose of this act is to: 1) foster and promote safety in aeronautics; 2) ensure the state provides laws and regulations relating to aeronautics are consistent with federal aeronautics laws and regulations; 3) ensure that persons residing in the vicinity of airports are protected against intrusions by unreasonable levels of aircraft noise; and 4) develop informational programs to increase the understanding of current air transportation issues. Caltrans Division of Aeronautics issues permits for and annually inspects hospital heliports and public-use airports, makes recommendations regarding proposed school sites within two miles of an airport runway, and authorizes helicopter landing sites at/near schools.

California Building Code

The State of California provides a minimum standard for building design through the California Building Code (CBC; Part 2 of Title 24 of the California Code of Regulations [CCR]). It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to modification based on local conditions. Commercial and residential buildings are plan-checked by local city and county building officials for compliance with the CBC. Typical fire safety requirements of the CBC include: the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas. The CBC is updated on a three-year cycle; the 2016 CBC took effect on January 1, 2017.

California Fire Code

The California Building Standards Code also contains the California Fire Code (CFC), included as Part 9 of 24 CCR. The CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. The Los Angeles County Fire Department (LACoFD) provides fire protection services for the unincorporated areas of Los Angeles County and implements and enforces the CFC onsite. The CFC is updated on a three-year cycle; the 2016 CFC took effect on January 1, 2017.

Asbestos-Containing Materials Regulations

State-level agencies, in conjunction with the EPA and OSHA, regulate removal, abatement, and transport procedures for asbestos-containing materials. Releases of asbestos from industrial, demolition, or construction activities are prohibited by these regulations, and medical evaluation and monitoring are required for employees performing activities that could expose them to asbestos. Additionally, the regulations include warnings and practices to reduce the risk for asbestos emissions and exposure. Finally, federal, state, and local agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos.

Polychlorinated Biphenyls

The EPA prohibited the use of PCBs in the majority of new electrical equipment starting in 1979 and initiated a phase-out for much of the existing PCB-containing equipment. The inclusion of PCBs in electrical equipment and the handling of those PCBs are regulated by the provisions of the Toxic Substances Control Act (US Code, Title 15, §§ 2601 et seq.). Relevant regulations include labeling and periodic inspection requirements for certain types of PCB-containing equipment and outline highly specific safety procedures for their disposal. The state likewise regulates PCB-laden electrical equipment and materials contaminated above a certain threshold as hazardous waste; these regulations require that such materials be treated, transported, and disposed accordingly. At lower concentrations for nonliquids, regional water quality control boards may exercise discretion over the classification of such wastes.

Lead-Based Paint

Cal/OSHA's Lead in Construction Standard (8 CCR § 1532.1) addresses permissible exposure limits; exposure assessment; compliance methods; respiratory protection; protective clothing and equipment; housekeeping; medical surveillance; medical removal protection; employee information, training, and certification; signage; record keeping; monitoring; and agency notification.

Medical Waste Regulations

Medical Waste Management Act

The Medical Waste Management Act (California Health and Safety Code §§ 117600–118360) sets forth requirements for storage, transport, treatment, and disposal of medical waste and is administered by the California Department of Public Health Medical Waste Management Program.

Assembly Bill 333

Assembly Bill 333 (AB 333; Chapter 564, Statutes of 2014) sets forth additional requirements for transport of medical waste.

Senate Bill 225

Senate Bill 225 (SB 225; Chapter 352, Statutes of 2015) sets forth additional requirements for containment, storage, and transport of medical waste.

Bloodborne Pathogens

CCR Title 8, Section 5193, contains regulations governing occupational exposure of blood-borne pathogens. Guidelines for avoiding and minimizing exposure to blood-borne pathogens are issued by the California Division of Occupational Safety and Health in "Exposure Control Plan for Bloodborne Pathogens" (DOSH 2001a) and "A Best Practices Approach for Reducing Bloodborne Pathogen Exposure" (DOSH 2001b).

Radiologic Safety Regulations

Radiation Control Law

The Radiation Control Law governs sources of ionizing radiation for the protection of occupational and public health and safety (California Health and Safety Code §§ 114960 et seq.). Regulations implementing the Radiation Control Law are in 17 CCR Sections 30100 et seq. and are implemented by the California Department of Public Health.

Radiologic Technology Act

The Radiologic Technology Act (California Health and Safety Code § 27[f]) governs the use of radiologic equipment in health care, including x-ray machines. Regulations implementing the Radiologic Technology Act are in 17 CCR Sections 30400 et seq.

5.6.1.2 REGULATORY AGENCIES

United States Environmental Protection Agency

The EPA is the primary federal agency that regulates hazardous materials and waste. In general, the EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. The agency is responsible for researching and setting national standards for a variety of environmental programs and delegates to states and Native American tribes the responsibility for issuing permits and monitoring and enforcing compliance. EPA programs promote handling hazardous wastes safely, cleaning up contaminated land, and reducing waste volumes through such strategies as recycling. California falls under the jurisdiction of EPA Region 9. Under the authority of RCRA and in cooperation with state and tribal partners, the EPA Region 9 Waste Management and Superfund divisions manage programs for site environmental assessment and cleanup, hazardous and solid waste management, and underground storage tanks.

California Environmental Protection Agency

The CalEPA was created in 1991 by Governor Executive Order W-5-91. Several state regulatory boards, departments, and offices were placed under the CalEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to ensure the coordinated deployment of state resources. Among those responsible for hazardous materials and waste management are the DTSC, Department of Pesticide Regulation, and Office of Environmental Health Hazard Assessment CalEPA also oversees the unified hazardous waste and hazardous materials management regulatory program (Unified Program), which consolidates and coordinates the following six programs:

- Hazardous Materials Release Response Plans and Inventories (Business Plans)
- Underground Storage Tank Program
- Aboveground Petroleum Storage Tank Act
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs
- California Uniform Fire Code: Hazardous Material Management Plans and Inventory Statements
- California Accidental Release Prevention (CalARP) Program

California Department of Toxic Substances Control

DTSC, which is a department of CalEPA, is authorized to carry out the federal RCRA hazardous waste program in California to protect people from exposure to hazardous wastes. The department regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California, primarily under the authority of RCRA and in accordance with the California Hazardous Waste Control Law (Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (22 CCR, Divisions 4 and 4.5). Permitting, inspection, compliance, and corrective action programs ensure that people who manage hazardous waste follow state and federal requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Certified Unified Program Agency

A CUPA is a local agency that has been certified by CalEPA to implement the local Unified Program. The CUPA can be a county, city, or joint powers authority. A participating agency is a local agency that has been designated by the local CUPA to administer one or more of the Unified Programs within their jurisdiction on behalf of the CUPA. A designated agency is a local agency that has not been certified by CalEPA to become a CUPA, but is the responsible local agency that would implement the six Unified Programs until they are certified. Currently, there are 83 CUPAs in California. The LACoFD is the certified CUPA for the project site as well as for many cities throughout Los Angeles County.

Hazardous Materials Business Plans

Both the federal government (Code of Federal Regulations) and the State of California (California Health and Safety Code) require any business that handles more than a specified amount—or "reporting quantity"—of hazardous or extremely hazardous materials to submit a hazardous materials business plan to its CUPA.

Business plans must include an inventory of the hazardous materials at the facility. Businesses must update their business plan at least every three years and the chemical portion every year. Also, business plans must include emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans need to identify the procedures for immediate notification of all appropriate agencies and personnel, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all company emergency coordinators, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel.

California Accidental Release Prevention Program

CalARP became effective on January 1, 1997, in response to Senate Bill 1889 (Chapter 715, Statutes of 1996). CalARP aims to be proactive and therefore requires businesses to prepare risk management plans, which are detailed engineering analyses of the potential accident factors at a business and the mitigation measures that can be implemented to reduce this accident potential. This requirement is coupled with the requirements for preparation of hazardous materials business plans under the Unified Program, implemented by the CUPA.

5.6.1.3 EXISTING CONDITIONS

Historical Land Uses

Historical Topographic Maps

Four historical topographic maps from the National Geologic Map Database maintained by the U.S. Geological Survey were reviewed.[1]

- **1896:** The site is shown as vacant except for three roadways: one north-south near the later alignment of Normandie Avenue; one extending southeast from Normandie Avenue; and a third short east-west roadway connecting the former two.
- **1924:** Several roadways are present, including Normandie Avenue and Carson Street. A Pacific Electric Railroad track extends north-south next to the west side of Normandie Avenue. There are several sparsely scattered buildings in the part of the site south of Carson Street.

[1] The titles, dates, and scales of the topographic maps reviewed are:
- Redondo; 1896; 1:62,500 (USGS 1896)
- Compton; 1924; 1:24,000 (USGS 1924)
- Torrance; 1964; 1:24,000 (USGS 1964)
- Torrance; 1981; 1:24,000 (USGS 1981)

- **1951:** Los Angeles Harbor General Hospital is shown in the center of the project site. Several roadways are shown, including a small network of roadways in and surrounding the hospital site. Most of the site north and south of the hospital is vacant except for three short rows of buildings—one north of the hospital and two south—and sparsely scattered buildings elsewhere. The Pacific Electric Railway is present.

- **1981:** The project site is entirely built out with urban uses. The I-110 is shown next to the east site boundary. The former Pacific Electric railroad track now extends south only to 213th Street and is mapped as a branch of a Southern Pacific railroad track. The 223rd Street School is mapped in the southwest part of the site, Van Deene Avenue School in the northeast part of the site, and a shopping center next to the north side of Carson Street.

Historical Aerial Photographs

Historical aerial photographs from Nationwide Environmental Title Research were also reviewed.

- **1952:** There are scattered developed land uses in the southern part of the site; most uses appear to be residential, some scattered and some in rows. Much of the Los Angeles County Harbor General Hospital site is developed with rows of small buildings—barracks remaining from use as a US Army hospital during World War Two (HUCLAMC 2016). The northern part of the site was mostly vacant except for a few structures in the northeast, rows of houses along Berendo Avenue extending north from the hospital, and rows of houses along a loop road extending west from Vermont Avenue about where 214th Street is today.

- **1963:** The majority of the site is built out with hospital, residential, industrial, commercial, and school uses as it is today. There are limited vacant areas in the eastern part of the site—both south and north of the hospital—and in the southwest part of the site.

- **1980:** The site is built out similarly to current conditions. (NETR 2016)

Environmental Database Search

An environmental database search for the project site was conducted by Environmental Data Resources (EDR) on November 10, 2016 (see Appendix F of this DEIR for the full database search report). Table 5.6-1 summarizes properties in the Specific Plan area that are listed on environmental hazards databases.

Table 5.6-1 Onsite Environmental Database Listings

Map No.	Site Address	Database and Reason for Listing
H75	Gardena Valley #4 Landfill 833 W Torrance Blvd	EnviroStor evaluation site. Inactive; action required as of 2015. EnviroStor lists hazardous materials/waste cleanup, permitting, enforcement and investigation sites.
H358	Berada Corp. 801 Torrance Carson, Ca	WMUDS/SWAT
E363	Alpine Texaco 701 Torrance Blvd	EDR Historical Auto Stations
C59	Gardena Valley Dump #3 20800 S Vermont Ave	Los Angeles Co. HMS
C60	Rowland Ngyuen 20800 Doble Ave	Haznet: 1 shipment in 2014
49	Bob Mckewen 20811 Doble Ave	Haznet: 1 shipment in 2010
C58	VFW Post #10166 20820 S Vermont Ave	Los Angeles Co. HMS
45	Tammy Clark 818 Greenhedge St	Haznet: 1 shipment in 2012
E26	Catherine Altobello 717 Greenhedge St	Haznet: 1 shipment in 2012
E32	Carl Servino 20812 Orchard Ave	Haznet: 1 shipment in 2013
F53	Villareal, Aaron 708 W. 209th St.	Haznet: 1 shipment in 2014
I67	Sal Cenatiempo 907 Javelin St	Haznet: 1 shipment in 2014
B50	Van Deene Ave Elementary School 826 Javelin St	RCRA database: LQG
65	21127 Doble Ave	EDR Historical Auto Stations
D70	Vivian Le 808 Clarion Dr	Haznet: 1 shipment in 2014
D62	Rhonda Thibault 712 W 213th St	Haznet: 1 shipment in 2014
D66	Roxie Jones 21242 Menlo Ave	Haznet: 1 shipment in 2013
37	Donna Asari 1223 W 213th St	Haznet: 1 shipment in 2013
23	Lisa Genady 21305 Payne Ave	Haznet: 1 shipment in 2013
18	Osmar Serrano 21312 Budlong Ave	Haznet: 1 shipment in 2014
19	Justin Lee 21315 Broadwell Ave	Haznet: 1 shipment in 2014
31	Dale Kaneshiro 941 W. 214th St.	Haznet: 1 shipment in 2012

Table 5.6-1 Onsite Environmental Database Listings

Map No.	Site Address	Database and Reason for Listing
G41	21414 Vermont Ave Unincorporated County Area, Carson	CHMIRS (California Hazardous Materials Incident Reporting System) Sewage overflowed into storm drain 2007; contained and cleaned up.
361	21600 Normandie Ave	EDR Historic Cleaners
J73	Jimmy Quiroz 1228 Desford St	Haznet: 1 shipment in 2014
43	Pete Mamea 21403 Berendo Ave	Haznet: 1 shipment in 2012
71	Rosemary Almanza 21420 Broadwell Ave	Haznet: 1 shipment in 2014
G69	Heritage Legacy LLC 21414 Vermont	LA Co. Site Mitigation
J187	John Piper 1207 Ritner St	Haznet: 1 shipment in 2013
V151	John Bates 21602 S Vermont Ave	Los Angeles Co. HMS
V347	John Bates 21600 Vermont Ave	LUST; Aviation fuel affected soil (case closed in 1996)
V354	US Storage Centers 735 W Carson St	Los Angeles Co. HMS
K141	Polly's Pies Restaurant 819 W Carson St	Los Angeles Co. HMS
K110	Fiesta Car Wash 21611 S Vermont Ave	Los Angeles Co. HMS
0277	Smile Care Dental Group 923 W Carson St	Haznet: 20 shipments in 1993-2003
A193	C C Donuts 1001 W Carson St #C	Los Angeles Co. HMS
M320	Peter Horvath Et Al 1123 W Carson St	Los Angeles Co. HMS
Q166	Genkai Grill 1249 W Carson St	Los Angeles Co. HMS
Q121	Sungs Bbq House 1225 W Carson St	Los Angeles Co. HMS
U189	Phil's Fish-Grill 1175 W Carson St	Los Angeles Co. HMS
P290	Dry Cleaners 114-1259 W Carson 1161 W Carson St	Los Angeles Co. HMS
P94	Fiesta Grill Mediterranean 1153 W Carson St	Los Angeles Co. HMS
M155	Lee's Sandwiches 1145 W Carson St	Los Angeles Co. HMS
M88	Wienerschnitzel Restaurant #38 1125 W Carson St	Los Angeles Co. HMS
M337	T Shirt Warehouse 1101 West Carson	Haznet: 2 shipments in 1995
A173	1012 Carson St Store for Lease	ERNS: Leak of about 600 pounds of several hazardous materials in 1988

Table 5.6-1 Onsite Environmental Database Listings

Map No.	Site Address	Database and Reason for Listing
A283	Fortune Bowl 1029 W Carson St	Los Angeles Co. HMS
O92	941 W Carson St	EDR Historical Auto Stations
K339	Vermont & Carson St Carson	Clandestine drug lab (CDL)
K313	Hong Kong Garden Restaurant 21718 S Vermont Ave	Los Angeles Co. HMS
R107	Hayashi Restaurant 800 W Carson St #38	Los Angeles Co. HMS
R324	Videosonic Labs Inc 733 W Carson St	Los Angeles Co. HMS
N108	Photo Finest Inc 21720 S Vermont Ave #104	Los Angeles Co. HMS
N106	Industrial Technology Inc 21822 S Vermont Ave	Los Angeles Co. HMS
350	LA Port o Emb Station Hosp *[Now Harbor-Ucla MC]*	EnviroStor: Formerly Used Defense Sites (FUDS)
AC360	Harbor UCLA Diagnostic Imaging 21828 S Normandie Ave	SQG listed on RCRA database; Haznet: 9 shipments, 1993-1997
W254	Natl Supply Co Dump (Dest) 22000 Normandie Ave	Los Angeles Co. HMS
79	Barbara Holland 946 W 220th St Unit 210	Haznet: 1 shipment in 2013
L99	Bepo Auto Repair 802 W 220th St	Haznet: 1 shipment in 2011
L331	Pacific Bell 826 W Second Hundred Twenty St	RCRA database: NONGEN
T127	Debra Johnson 1211 W 221st St	Haznet: 1 shipment in 2014
156	John Naito Nursery 22102 Normandie Ave	Los Angeles Co. HMS
T164	Nawaid Rana 22114 Kenwood Ave	Haznet: 2 shipments in 2011
202	Larry Billoups 1220 W 222nd St	Haznet: 1 shipment in 2014
172	Metal Cleaning Ind Inc (Dest) 1120 Jay St	Los Angeles Co. HMS
295	LAUSD/ Meyler St Elem 1123 W 223rd St	Haznet: 5 shipments in 2000-2005
260	Mikamo Nursery 1029 W 223rd St	Los Angeles Co. HMS
S124	Semiconductor Materials Inc 22108 S Vermont Ave #101	Los Angeles Co. HMS
S162	Bickerton Iron Works 22118 S Vermont Ave	Haznet: 6 shipments in 1998-2010

Table 5.6-1 Onsite Environmental Database Listings

Map No.	Site Address	Database and Reason for Listing
X175	United Microwave Products Inc 22129 S Vermont Ave	Los Angeles Co. HMS
X179	Mechanical Seal Repair 22122 S Vermont	Haznet: 1 shipment in 1998
X219	Delta Conversion 22203 S Vermont Ave #B	Los Angeles Co. HMS
X204	Alfra Industries Inc 22134 S Vermont Ave #C	Los Angeles Co. HMS
Y233	CM Auto Detail 22209 S Vermont Ave	Los Angeles Co. HMS
Y273	925 West 223rd Street	CHMIRS: Release from electric pole transformer entered storm drain (contained and cleaned up in 2010)
AB297	The Soft Touch Pet Lodge 951 W 223rd St	Los Angeles Co. HMS
AA292	Jr Jansen Inc 22231 S Vermont Ave	Los Angeles Co. HMS

Source: EDR 2016.
Note: Addresses in West Carson show Torrance as the city because the post office for West Carson (90502) is in Torrance. All addresses are in West Carson unless specified otherwise.
Acronyms: CDL: Clandestine drug lab
CHMIRS: California Hazardous Materials Incident Reporting System
EnviroStor: hazardous materials/waste cleanup, permitting, enforcement and investigation sites
ERNS: Emergency Response Notification System
FUDS: Formerly Used Defense Sites
Haznet: hazardous waste shipment manifests
LOS ANGELES CO. HMS: Los Angeles County Department of Public Works database of Industrial waste and underground storage tank sites
LQG: Large Quantity Generator of hazardous wastes
LUST: Leaking Underground Storage Tank
NONGEN: Non-generator of hazardous waste
RCRA: Resource Conservation and Recovery Act
SQG: Small Quantity Generator of hazardous wastes
WMUDS/SWAT: Waste Management Unit Database/Solid Waste Assessment Test

Selected Offsite Hazardous Materials Listings

Offsite environmental database listings within 0.25 mile of the project site are listed in Table 5.6-2.

Table 5.6-2 Offsite Environmental Database Listings within 0.25 Mile of the Project Site

Map No.	Site Address	Database/Reason for Listing/Regulatory Status
AN420	Penske Truck Leasing Co., LP 20425 S Hamilton Ave	AST
417	Rollins Leasing Corp Faci 20425 Hamilton	HIST CORTESE
403	Gardena Valley 1 & 2 20740 S. Figueroa, 225-305w Torrance Bl Carson	SWIS: Landfill closed in 1959
428	Royal Boulevard Class III Disposal Site Royal Boulevard Between 209th & 210th Streets	CA BOND EXP. PLAN: Historical database of expenditure plans per the state Hazardous Substance Cleanup Bond Act of 1984.
AK411	Royal Blvd. Dump 20950 S. Royal Blvd	WMUDS/SWAT

Table 5.6-2 Offsite Environmental Database Listings within 0.25 Mile of the Project Site

Map No.	Site Address	Database/Reason for Listing/Regulatory Status
409	Royal Boulevard Class III Disposal Site Royal Blvd Btwn 209th And 210th Streets	EnviroStor: Historic landfill (no further action in 2010)
AL418	City of Carson - Hicks Family Property 315 Torrance Blvd Carson	SLIC
AL416	City of Carson - Hicks Family Property Carson, Ca 90745	SLIC
429	Gardena Valley #5 (Golden Eagle) 306 West Torrance Boulevard Carson	SWIS: Landfill closed in 1963
AF380	Carson Tank Farm 21000 Figueroa Carson	State Water Resources Control Board: ENF
AF382	CWD, Llc 21046 S Figueroa St Carson	LQG
AE381	Dewey Pest Control 21111 S Figueroa Street Carson	SQG; UST; SWEEPS UST, HIST UST, CA FID UST
AE376	D and N Concrete Pumping Inc 21125 Figueroa St Carson	SQG Haznet: 1 shipment in 1995
AM415	Mcdonnell Douglas Aerospace Ta 21000 S Normandie Ave	SQG
AH389	Service Station 2529 600 W Carson Carson	HIST UST
408	K & K Auto Parts 1407 W Carson Street	SQG
AG396	LAUSD White Junior High School 22102 S Figueroa St Carson	SQG
AG388	Shell 22235 S Figueroa Carson	HIST UST
407	Aero Arc 22433 S Vermont Ave	SQG
412	M CS Unlimited 22517 Normandie Ave	SQG
406	Simpson Sports 22412 South Normandie Ave	SQG

Source: EDR 2016.

Note: Addresses in West Carson show Torrance as the city because the post office for West Carson (90502) is in Torrance. All addresses are in Torrance unless specified otherwise.

Acronyms: AST: Aboveground Storage Tank
CA BOND EXP. PLAN: Historic database of expenditure plans per the state Hazardous Substance Cleanup Bond Act of 1984.
ENF: Enforcement Action Listing, State Water Resources Control Board
HIST CORTESE: historic database of hazardous materials release sites
HIST UST: historic underground storage tank sites
SLIC: Spills Leaks Investigations and Cleanup
SQG: Small Quantity Generator of hazardous wastes
SWIS: Solid Waste Information System: solid waste disposal, transfer, recycling, composting, and transformation sites
WMUDS/SWAT: Waste Management Unit Database/Solid Waste Assessment Test

Del Amo Superfund Site

The Del Amo Superfund Site is about 1,500 feet north of the project site. The site was used for manufacturing synthetic rubber by several manufacturers from 1943 until 1972. Contamination consisting of hydrocarbon solvents, unspecified aqueous solution, and unspecified solvent mixtures has affected groundwater. Contaminated soil from part of the site has been removed, and remediation via soil vapor extraction is underway (Corps 2015).

Other Hazardous Materials Potentially Onsite

Asbestos

Asbestos is the name of a group of silicate minerals that are heat resistant and thus were commonly used as insulation and fire retardant. Inhaling asbestos fibers has been shown to cause lung disease (asbestosis) and lung cancer (mesothelioma) (DTSC 2016). Beginning in the early 1970s, a series of bans on the use of certain asbestos-containing materials in construction were established by the EPA and the Consumer Product Safety Commission. Most US manufacturers voluntarily discontinued the use of asbestos in certain building products during the 1980s. Requirements for limiting asbestos emissions from building demolition and renovation activities are specified in South Coast Ari Quality Management District (SCAQMD) Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities).

Since much of the site was built out by 1963, asbestos-containing materials could be present in some buildings onsite.

Lead

Lead was formerly used as an ingredient in paint (before 1978) and as a gasoline additive; both of these uses have been banned. Lead is listed as a reproductive toxin and a cancer-causing substance; it also impairs the development of the nervous system and blood cells in children (DTSC 2016). Paint containing lead at concentrations of 5,000 milligrams per kilogram (mg/Kg or parts per million) is considered lead-based paint. Structures built before 1978 are presumed to contain lead-based paint.

Schools within 0.25 Mile of the Project Site

Two schools are in the Specific Plan area, and two additional schools are within 0.25 mile of the Specific Plan.

- Van Deene Avenue Elementary School, 826 Javelin Street, West Carson (onsite)
- Halldale Elementary School, 21514 Halldale Avenue, Los Angeles (opposite Normandie Avenue from the western project boundary)
- Meyler Street Elementary School, 1123 West 223rd Street, West Carson (onsite)
- White Middle School, 22102 South Figueroa Street, Carson (about 580 feet east of the project site)

Heliports

One heliport is onsite atop the 2 South building in the east-central part of the Harbor-UCLA Medical Center campus. No other heliports are within two miles of the project site (Airnav.com 2016).

Emergency Response Planning

The Los Angeles County Office of Emergency Management maintains the Los Angeles County Operational Area Emergency Response Plan and the County of Los Angeles All-Hazard Mitigation Plan. The Office of Emergency Management leads and coordinates disaster plans and disaster preparedness exercises for all cities and special districts in Los Angeles County.

Disaster Routes designated by the Los Angeles County Department of Public Works are freeways, highways, or arterial routes identified for use during times of crisis. These routes bring in emergency personnel, equipment, and supplies to impacted areas in order to save lives, protect property, and minimize impact to the environment. During a disaster, these routes have priority over all other roads for clearing, repairing, and restoration. Western Avenue, about 0.5 miles west of the site, and I-110 are designated primary disaster routes, and Carson Street is a secondary disaster route (DPW 2012).

Harbor-UCLA Medical Center is one of five Level I trauma centers in Los Angeles County. A Level I trauma center is capable of providing total care for every aspect of injury—from prevention through rehabilitation (ATS 2016).

5.6.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

H-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

H-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

H-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.

H-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

H-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, would result in a safety hazard for people residing or working in the project area.

H-6 For a project in the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.

H-7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

H-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to the urbanized areas or where residences are intermixed with wildlands.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold H-5
- Threshold H-8

These impacts will not be addressed in the following analysis.

5.6.3 Plan, Programs, and Policies

5.6.3.1 REGULATORY REQUIREMENTS

RR HAZ-1 Any project-related hazardous materials and hazardous wastes will be transported to and/or from the project in compliance with any applicable state and federal requirements, including the U.S. Department of Transportation regulations listed in the Code of Federal Regulations (Title 49, Hazardous Materials Transportation Act); California Department of Transportation (Caltrans) standards; and the California Occupational Safety and Health Administration (Cal/OSHA) standards.

RR HAZ-2 Any project-related hazardous waste generation, transportation, treatment, storage, and disposal will be conducted in compliance with Subtitle C of the Resource Conservation and Recovery Act (RCRA) (Code of Federal Regulations, Title 40, Part 263), including the management of nonhazardous solid wastes and underground tanks storing petroleum and other hazardous substances. The project will be designed and constructed in accordance with the regulations of the Los Angeles County Fire Department, which serves as the designated CUPA and which implements state and federal regulations for the following programs: (1) Hazardous Materials Release Response Plans and Inventory Program, (2) UST Program, (3) AST Program, (4) Hazardous Waste Generator and Onsite Hazardous Waste Treatment Program, (5) California Uniform Fire Code, and (6) CalARP Program.

RR HAZ-3 Any project-related underground storage tank (UST) repairs and/or removals will be conducted in accordance with the California Underground Storage Tank Regulations (Title 23, Chapter 16 of the California Code of Regulations). Any unauthorized release of hazardous materials will require release reporting, initial abatement, and corrective actions

that will be completed with oversight from the RWQCB, DTSC, LACoFD, SCAQMD, and/or other regulatory agencies, as necessary. Any project-related use of existing USTs will also have to be conducted (i.e., used, maintained, and monitored) in accordance with the California Underground Storage Tank Regulations (Title 23, Chapter 16 of the California Code of Regulations).

RR HAZ-4 Any project-related new construction, excavations, and/or new utility lines within 10 feet or crossing existing high pressure pipelines, natural gas/petroleum pipelines, or electrical lines greater than 60,000 volts, will be designed and constructed in accordance with the California Code of Regulations (Title 8, Section 1541).

RR HAZ-5 Any project-related demolition activities that have the potential to expose construction workers and/or the public to asbestos-containing materials (ACMs) or lead-based paint (LBP) will be conducted in accordance with applicable regulations, including, but not limited to:

- South Coast Air Quality Management District's (SCAQMD's) Rule 1403
- California Health and Safety Code (Section 39650 et seq.)
- California Code of Regulations (Title 8, Section 1529)
- California Occupational Safety and Health Administration (Cal/OSHA) regulations (California Code of Regulations, Title 8, Section 1529 [Asbestos] and Section 1532.1 [Lead])

RR HAZ-6 The project will be designed and constructed in accordance with Part 77 of the Federal Aviation Regulations (FAR), which requires the County to notify the Federal Aviation Administration of proposed construction or alteration within 20,000 feet from the nearest point of the nearest runway of an airport where the structure would extend into a slope of a 100:1 and within 5,000 feet of a heliport where the structure would extend into a slope of a 25:1 from the nearest landing and take-off area of the heliport.

5.6.4 Environmental Impacts

The following impact analysis addresses thresholds of significance for potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.6-1: Project construction and operations would involve the transport, use, and/or disposal of hazardous materials. [Thresholds H-1 (part), H-2 (part), and H-3]

Impacts during construction and operation are assessed in the following analysis. Impacts during the demolition phase of the project are analyzed in Impact 5.6-2.

Impact Analysis:

Routine Transport, Use, Storage and Disposal of Hazardous Materials

Construction

Construction in accordance with the Specific Plan would involve demolition, grading, and construction of new buildings. Potentially hazardous materials used during construction include substances such as paints, sealants, solvents, adhesives, cleaners, and diesel fuel. There is potential for these materials to spill or to create hazardous conditions. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard. These activities would also be short term or one time in nature. Project construction workers would be trained in safe handling and hazardous materials use.

To prevent hazardous conditions, existing local, state, and federal laws—such as those listed under Section 5.6.1.1, *Regulatory Background*—are to be enforced at the construction sites. For example, compliance with existing regulations would ensure that construction workers and the general public are not exposed to any risks related to hazardous materials during demolition and construction activities. Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, exposure warnings, availability of safety equipment, and preparation of emergency action/prevention plans. For example, all spills or leakage of petroleum products during construction activities are required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable state and local regulations for the cleanup and disposal of that contaminant. All contaminated waste encountered would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility.

Furthermore, strict adherence to all emergency response plan requirements set forth by LACoFD would be required throughout the duration of project construction. Construction activities would be in and near existing sensitive uses, including Harbor-UCLA Medical Center and four schools.

Regulatory requirement RR HAZ-1 also ensures compliance with the USDOT and Cal/OSHA standards for hazardous materials and hazardous waste transportation. RR HAZ-2 requires all hazardous waste generation, transportation, treatment, storage, and disposal to be in compliance with the RCRA and the LACoFD as the designated CUPA. RR HAZ-3 requires all UST repairs or removals to be conducted in accordance with the California Underground Storage Tank Regulations with oversight from the RWQCB, DTSC, LACoFD, SCAQMD and/or other regulatory agencies, as needed. RR HAZ-4 ensures any project construction within 10 feet of or crossing existing high pressure pipelines, natural gas/petroleum pipelines, electrical lines greater than 60,000 volts are designed in accordance with California Code of Regulations, Title 9, Section 1541.

Upon compliance with federal, state, and County regulatory requirements RR HAZ-1 through RR HAZ-4, construction activities in accordance with the proposed project would not pose substantial hazards to the public or the environment, and impacts would be less than significant.

Operation

Chemical Hazards

Operation of the proposed facilities would involve use of hazardous chemicals such as chemotherapy medicines, sterilants, disinfectants, laboratory chemicals, pesticides, and compressed gases and would generate wastes containing such chemicals. Hazardous chemicals would be used in compliance with existing regulations and guidelines of OSHA, Cal/OSHA, National Institute for Occupational Safety and Health (NIOSH), US DOT, the EPA, California Department of Public Health, and LACoFD.

Biohazards

Operation of the proposed facilities would involve use of biohazardous substances such as biotherapy agents, human tissues or organs, human blood, and microbiological cultures and specimens. Project operation would also generate all six categories of biohazardous wastes listed above (human tissues, organs, or body parts; human blood and other body fluids; microbiological waste; sharps; isolation waste; and animal wastes). Therefore, project operation could pose hazards to existing and future workers, patients, and visitors. The use of biohazardous substances and the storage and transport of biohazardous wastes would be conducted in compliance with existing regulations and guidelines, including the Medical Waste Management Act, AB 333, SB 225, CCR Title 8 Section 5193, and OSHA and NIOSH guidelines.

Radioactive Materials

Operation of the proposed facilities would involve increased use of radioactive materials in diagnosis and treatment. Thus, project operation could pose radiologic hazards to Harbor-UCLA Medical Center workers, patients, and visitors. Radioactive materials would be used, stored, transported, and disposed of in compliance with CFR Title 10, Chapter 1; the Radiation Control Law; the Radiologic Technology Act; and regulations implementing the latter two laws.

Accidental Release of Hazardous Materials

The use, storage, and transport of hazardous materials and hazardous wastes in compliance with the laws and regulations mentioned above would minimize the potential for releases of hazardous materials that could pose substantial hazards to the public or the environment and would entail prompt containment and cleanup of spills.

Businesses handling reporting quantities of hazardous or extremely hazardous materials would maintain business plans with procedures in the event of a hazardous materials release, including immediate notification of all appropriate agencies and personnel, identification of local emergency medical assistance, contact information for company emergency coordinators, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel.

Construction contractors would maintain equipment and supplies on their construction sites for containing and cleaning up hazardous materials spills and would train their staffs on such containment and cleanup.

In addition, regulatory requirements RR HAZ-1 and RR HAZ-2 would further enforce compliance with US DOT, Cal/OSHA, and LACoFD pertaining to hazardous materials and wastes.

Hazards to Persons at Schools on and near the Site

Project buildout would result in increased usage and storage of hazardous materials onsite and increased transportation of hazardous materials to and from the site. Thus, project operation could subject people on and near the site, including at the four schools on or near the site, to increased hazards from hazardous materials. Compliance with the regulations described above would reduce hazards from hazardous materials emissions and handling such that no substantial health risks to persons at the four schools would occur, and impacts would be less than significant.

Level of Significance before Mitigation: With implementation of regulatory requirements RR HAZ-1 through RR HAZ-4, Impact 5.6-1 would be less than significant.

Impact 5.6-2: Demolition of existing buildings could expose people to asbestos-containing materials and/or lead-based paint. [Thresholds H-1 (part), H-2 (part)]

Impact Analysis: Demolition of buildings has the potential to expose and disturb asbestos containing materials (ACMs) and lead-based paint (LBP). Demolition can cause encapsulated ACMs (if present) to become friable and, once airborne, they are considered a carcinogen.[2] Demolition of the existing buildings and structures can also release lead into the air if LBP is not properly removed and handled. The EPA has classified lead and inorganic lead compounds as "probable human carcinogens" (USEPA 2015). Such releases could pose significant risks to persons living and working in and around project site as well as to project construction workers.

Abatement of all ACM and LBP encountered during any future building demolition would be required to be conducted in accordance with all applicable laws and regulations, including those of the EPA (which regulates disposal), OSHA, US Department of Housing and Urban Development, Cal/OSHA (which regulates employee exposure), and SCAQMD. County regulatory requirement RR HAZ-5 also enforces any demolition activities that have the potential to release ACMs and LBP to be conducted in accordance with SCAQMD, California Health and Safety Code Section 39650 et seq., California Code of Regulations (Title 8, Section 1529), and Cal/OSHA regulations.

The EPA requires that all asbestos work performed within regulated areas be supervised by a competent person who is trained as an asbestos supervisor (EPA Asbestos Hazard Emergency Response Act, 40 CFR 763). SCAQMD's Rule 1403 requires that buildings undergoing demolition or renovation be surveyed for ACMs prior to any demolition or renovation activities. Should ACMs be identified, Rule 1403 requires that ACMs be safely removed and disposed of at a regulated site, if possible. If it is not possible to safely remove ACMs, Rule 1403 requires that safe procedures be used to demolish the building with asbestos in place without resulting in a significant release of asbestos. Additionally, during demolition, grading, and excavation,

[2] When dry, an ACM is considered friable if it can be crumbled, pulverized, or reduced to powder by hand pressure. If it cannot, it is considered a nonfriable ACM. It is possible for nonfriable ACMs to become friable when subjected to unusual conditions, such as when demolishing a building or removing an ACM that has been glued into place.

all construction workers would be required to comply with the requirements of CCR Title 8, Section 1529 (Asbestos), which provides for exposure limits, exposure monitoring, respiratory protection, and good working practices by workers exposed to asbestos.

Cal/OSHA regulates the demolition, renovation, or construction of buildings involving lead-based materials. It includes requirements for the safe removal and disposal of lead, and the safe demolition of buildings containing LBP or other lead materials. Additionally, during demolition, grading, and excavation, all construction workers would be required to comply with the requirements of CCR Title 8, Section 1532.1 (Lead), which provides for exposure limits, exposure monitoring, respiratory protection, and good working practice by workers exposed to lead.

The potential exposure of construction workers to ACMs or LBP is a potentially significant impact. Survey of existing structures prior to demolition would be required to characterize the potential exposure and further prevent impacts from the potential release of ACM or LBP associated with individual development projects.

Level of Significance before Mitigation: Without mitigation, Impact 5.6-2 would be potentially significant.

Impact 5.6-3: Several properties within the Specific Plan area are listed on hazardous materials databases. [Threshold H-4]

Impact Analysis: Table 5.6-1 above lists 77 hazardous materials sites within the Specific Plan area. Four of those sites – two listed on the California Hazardous Materials Incident Reporting System (CHMIRS), one LUST site, and one Emergency Response Notification System (ERNS) site – document past hazardous materials releases. All past releases are known to regulatory agencies. The two releases listed on CHMRIS were contained and cleaned up, and the LUST case was closed in 1996.

However, redevelopment of individual properties within the Specific Plan area could have unknown recognized environmental conditions related to soils, groundwater, and vapors/gases. Thus, development in accordance with the Specific Plan could create a significant hazard to the public or the environment.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.6-3 would be potentially significant.

Impact 5.6-4: One heliport is in the Specific Plan area in the Harbor-UCLA Medical Center campus. [Threshold H-6]

Impact Analysis: One heliport is in the Specific Plan area atop the 2 South building in the east-central part of the Harbor-UCLA Medical Center campus. No other heliports are within one mile of the project site (Airnav.com 2016). Specific Plan implementation could involve relocation of the heliport, as the 2 South building is slated for demolition in the Harbor-UCLA Medical Center Master Plan. Development within the Harbor-UCLA Medical Center campus in accordance with the Specific Plan would require the medical center staff responsible for safety and security to review any proposed new locations for the heliport and building heights near that location to identify safe approach and departure routes for helicopters. Specific Plan buildout would not cause substantial hazards to people onsite, and impacts would be less than significant.

Additionally, County regulatory requirement RR HAZ-6 requires all projects to be designed and constructed in accordance with Part 77 of the FAR, which requires the County to notify the Federal Aviation Administration of proposed construction or alteration within 20,000 feet from the nearest point of the nearest runway of an airport where the structure would extend into a slope of a 100:1 and within 5,000 feet of a heliport where the structure would extend into a slope of a 25:1 from the nearest landing and take-off area of the heliport.

Level of Significance before Mitigation: With implementation of regulatory requirement RR HAZ-6, Impact 5.6-4 would be less than significant.

Impact 5.6-5: Project development could affect the implementation of an emergency responder or evacuation plan. [Threshold H-7]

Impact Analysis: Specific Plan buildout would involve construction activities and construction traffic that could impede emergency access to the project site and surrounding neighborhoods. DPW designates I-110 as a primary disaster route, and Carson Street as a secondary disaster route. Many construction projects are required to submit construction traffic management plans to the Los Angeles County Public Works Traffic and Lighting Division for review and approval. The Traffic and Lighting Division would require that any construction activities do not block emergency access to Harbor-UCLA Medical Center or surrounding neighborhoods.

Harbor-UCLA Medical Center is one of five Level I trauma centers in Los Angeles County. A Level I trauma center is capable of providing total care for every aspect of injury—from prevention through rehabilitation (ATS 2016). Specific Plan buildout would permit development of up to 2.7 million square feet of nonresidential development, which may include health care, research, medical office, transitional housing, and incidental retail uses. Thus, Specific Plan buildout would have some favorable impact on emergency response capacity in southern Los Angeles County.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.6-5 would be less than significant.

5.6.5 Cumulative Impacts

Hazardous Materials

Cumulative impacts occur when the potential impacts of one project are compounded with impacts of other development projects or from growth in the area. Hazards and hazardous materials impacts are compounded when multiple development projects would increase the presence of hazardous materials near the proposed project or the potential for hazardous accidents to occur.

However, use, transport, storage, and disposal of hazardous materials by other projects in the project area would be governed by the same regulations and agencies governing such uses by the proposed project. Implementation of existing regulations would minimize potential hazards from accidental release of hazardous materials. Other projects would be subject to independent CEQA review, and projects that could

expose persons at schools within one-quarter mile to substantial hazards through emissions of hazardous substances would be required to implement feasible mitigation measures to reduce those hazards.

Other projects may be proposed on sites listed on environmental databases. CEQA review for such projects would include environmental site assessments (e.g., Phase I, II, or III ESAs). When contaminated soil, soil vapor, or water are discovered on a site, cleanup to appropriate regulatory levels would be required before proposed land uses could be approved where people could come into contact with the contaminated material.

Overall, compliance with laws and regulations governing hazardous materials and hazardous wastes described above in Section 5.6.1.1 and with County regulatory requirements RR HAZ-1 through HAZ-5 would ensure impacts on hazards and hazardous materials are not cumulatively considerable.

Emergency Response Planning

Other projects in the region would involve grading and construction operations entailing staging of trucks and construction materials; trucks and construction equipment entering and exiting roadways; and soil haul truck trips. Thus, other projects could affect emergency access to properties and neighborhoods surrounding their project sites. Primary disaster routes in the community of West Carson include Interstates 405, 105, and 110 and State Routes 1, 107 (Hawthorne Boulevard) and 213 (Western Avenue); several other arterial roadways are designated secondary disaster routes (DPW 2012). Other projects would be required to submit construction traffic management plans to the Los Angeles County Public Works Traffic and Lighting Division for review and approval prior to construction activities. The Traffic and Lighting Division would ensure that emergency access to surrounding neighborhoods would be maintained. Cumulative impacts to emergency response plans would be less than significant.

5.6.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements RR HAZ-1 through RR HAZ-6, the following impacts would be less than significant: 5.6-1, 5.6-4, and 5.6-5.

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.6-2** Demolition of existing structures onsite could expose asbestos-containing materials and lead-based paint.

- **Impact 5.6-3** Properties within the Specific Plan area are included on a list of hazardous materials sites, and could create a significant hazard to the public or the environment.

5.6.7 Mitigation Measures

Impact 5.6-2

HAZ-1 In the event that building materials are encountered during demolition activities that are suspected of being asbestos-containing materials (ACMs), these materials shall be assumed to contain asbestos and shall be handled, removed, transported, and/or disposed of in

accordance with applicable ACM regulations. Any required removal of asbestos shall be made under the direction of a Cal/OSHA-certified asbestos consultant.

Impact 5.6-3

HAZ-2 As a condition of approval for individual development projects on former or existing commercial or industrial sites, the project applicant shall prepare and submit a Phase I Environmental Site Assessment (ESA) to the County of Los Angeles to identify environmental conditions of the development site and determine whether contamination is present. The Phase I ESA shall be prepared by an Environmental Professional in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527.13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." If recognized environmental conditions related to soils or groundwater are identified in the Phase I ESA, the project applicant shall have soil and soil gas sampling performed, as required, as a part of a Phase II ESA. If contamination is found at significant levels, the project applicant shall remediate all contaminated soils in accordance with state and local agency requirements and with the oversight of the California Department of Toxic Substances Control, Regional Water Quality Control Board, Los Angeles County Fire Department, etc. All contaminated soils and/or material encountered shall be disposed of at a regulated site and in accordance with applicable laws and regulations prior to the completion of grading.

Each Phase I ESA conducted for projects that involve demolition activities shall include an inspection for lead-based paint conducted by a licensed or certified lead inspector/assessor and a survey for asbestos-containing materials conducted by a California Certified Asbestos Consultant.

Prior to the issuance of building permits, a report documenting the completion, results, and follow-up remediation on the recommendations, if any, shall be provided to the Los Angeles County Department of Regional Planning evidencing that all site remediation activities have been completed.

5.6.8 Level of Significance After Mitigation

The mitigation measures identified above would reduce potential impacts associated with hazards and hazardous materials to less than significant. Therefore, no significant unavoidable adverse impacts relating to hazards and hazardous materials have been identified for the proposed project.

5.6.9 References

Airnav.com. 2016, November 23. Airport Information. http://www.airnav.com/airports/.

California Department of Transportation (Caltrans). 2016, March 28. 2016 California Public Use Airports and Federal Airfields. http://www.dot.ca.gov/hq/planning/aeronaut/documents/maps/PublicUseAirports_MilitaryAirfieldsMap.pdf.

Department of Public Works, Los Angeles County (DPW). 2012, September 24. Disaster Routes with Road Districts: South Los Angeles County. http://dpw.lacounty.gov/dsg/disasterroutes/map/disaster_rdm-South.pdf.

Federal Motor Carrier Safety Administration (FMCSA). 2017, February 1. Hazardous Materials Routes (FMCSA). https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=8c665f66734e4933a02c9157ea9d6e61.

Federal Railway Administration (FRA). 2017, February 1. FRA Safety Map. http://fragis.fra.dot.gov/GISFRASafety/.

Nationwide Environmental Title Research, LLC (NETR). 2016, November 10. Historical aerial photographs. Historicaerials.com.

Southern California Association of Governments (SCAG). 2014, April 21. Regional Planning & Local Perspectives: Economic and Demographic Trends for the City of Hermosa Beach. http://hermosabeach.granicus.com/MetaViewer.php?view_id=6&clip_id=3027&meta_id=148821.

U.S. Army Corps of Engineers (Corps), Seattle District. 2015, September 30. Third Five-Year Review Report for Del Amo Superfund Site, Operable Unit #1 and #2, Los Angeles County, California. https://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/c8e1baac141d3acd88257ed8007093f5/$FILE/DelAmoOU1-2%20FYRSigned_report_all.pdf.

U.S. Geological Survey (USGS). 1896. Redondo Sheet Topographic Map. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Redondo_298753_1896_62500.jpg.

———. 1924. Compton Quadrangle Topographic Map. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Compton_289448_1924_24000.jpg.

———. 1964. Torrance Quadrangle Topographic Map. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Torrance_300911_1964_24000.jpg.

———. 1981. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Torrance_102041_1964_24000.jpg.

This page intentionally left blank

5.6 HAZARDS AND HAZARDOUS MATERIALS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts of the West Carson TOD Specific Plan on human health and the environment due to exposure to hazardous materials or conditions associated with the project site, project construction, and project operations. Potential project impacts and appropriate mitigation measures or standard conditions are included as necessary. The analysis in this section is based, in part, upon the following source:

- *Radius Map Report,* Environmental Data Resources, Inc. (EDR), November 10, 2016.

A complete copy of this report is included in the Technical Appendices to this Draft EIR (Volume II, Appendix F).

5.6.1 Environmental Setting

5.6.1.1 RELEVANT PROGRAMS AND REGULATIONS

Federal

Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

Federal hazardous waste laws are generally promulgated under RCRA. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. The California Department of Toxic Substances Control (DTSC) is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency (CUPA) program, the California Environmental Protection Agency (CalEPA) has in turn delegated enforcement authority to the County of Los Angeles for state law regulating hazardous waste producers or generators.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) of 1986

Congress enacted CERCLA, commonly known as Superfund, on December 11, 1980. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. SARA amended the CERCLA on October 17, 1986. SARA stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites; required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; provided new enforcement authorities and settlement tools; increased state involvement in every phase of the Superfund program; increased the focus on human health problems posed by hazardous waste sites; encouraged greater citizen participation in making decisions on how sites should be cleaned up; and increased the size of the trust fund to $8.5 billion.

Emergency Planning Community Right-to-Know Act (EPCRA)

The EPCRA, also known as SARA Title III, was enacted in October 1986. This law requires any infrastructure at the state and local levels to plan for chemical emergencies. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301 through 312 are administered by EPA's Office of Emergency Management. EPA's Office of Information Analysis and Access implements the EPCRA Section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention (CalARP) Program.

Hazardous Materials Transportation Act

The US Department of Transportation (DOT) regulates hazardous materials transportation under Title 49 of the Code of Federal Regulations (CFR). State agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. These agencies also govern permitting for hazardous materials transportation. Title 49 CFR reflects laws passed by Congress as of January 2, 2006.

Federal Response Plan

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies, including the American Red Cross, that: 1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of state and local governments overwhelmed by a major disaster or emergency; 2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and 3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a Presidential declaration of a major disaster or emergency.

Medical Waste Regulations

- Regulations governing hospital, medical, and infectious waste incinerators (40 CFR Parts 60 and 62).
- Regulations governing occupational exposure to blood-borne pathogens administered by the Occupational Safety and Health Administration (OSHA) (29 CFR Part 1910).
- The Food and Drug Administration (FDA) regulates the types of containers used for storing medical wastes (21 CFR Part 864).
- The packaging of medical waste for transport is regulated by the US DOT in 49 CFR Part 173.

State

California Health and Safety Code and Code of Regulations

California Health and Safety Code Chapter 6.95 and 19 California Code of Regulations Section 2729 set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on site. A business that uses hazardous materials or a mixture containing hazardous materials must establish and implement a business plan if the hazardous material is handled in certain quantities.

California Education Code (CEC)

The CEC establishes the law for California public education. CEC requires that the DTSC be involved in the environmental review process for the proposed acquisition and/or construction of school properties that will use state funding. The CEC requires a Phase I Environmental Site Assessment be completed prior to acquiring a school site or engaging in a construction project. Depending on the outcome of the Phase I Environmental Site Assessment, a Preliminary Environmental Assessment and remediation may be required. The CEC also requires potential, future school sites that are proposed within two miles of an airport to be reviewed by Caltrans Division of Aeronautics. If Caltrans does not support the proposed site, no state or local funds can be used to acquire the site or construct the school.

California State Aeronautics Act

The State Aeronautics Act is implemented by Caltrans Division of Aeronautics. The purpose of this act is to: 1) foster and promote safety in aeronautics; 2) ensure the state provides laws and regulations relating to aeronautics are consistent with federal aeronautics laws and regulations; 3) ensure that persons residing in the vicinity of airports are protected against intrusions by unreasonable levels of aircraft noise; and 4) develop informational programs to increase the understanding of current air transportation issues. Caltrans Division of Aeronautics issues permits for and annually inspects hospital heliports and public-use airports, makes recommendations regarding proposed school sites within two miles of an airport runway, and authorizes helicopter landing sites at/near schools.

California Building Code

The State of California provides a minimum standard for building design through the California Building Code (CBC; Part 2 of Title 24 of the California Code of Regulations [CCR]). It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to modification based on local conditions. Commercial and residential buildings are plan-checked by local city and county building officials for compliance with the CBC. Typical fire safety requirements of the CBC include: the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas. The CBC is updated on a three-year cycle; the 2016 CBC took effect on January 1, 2017.

California Fire Code

The California Building Standards Code also contains the California Fire Code (CFC), included as Part 9 of 24 CCR. The CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. The Los Angeles County Fire Department (LACoFD) provides fire protection services for the unincorporated areas of Los Angeles County and implements and enforces the CFC onsite. The CFC is updated on a three-year cycle; the 2016 CFC took effect on January 1, 2017.

Asbestos-Containing Materials Regulations

State-level agencies, in conjunction with the EPA and OSHA, regulate removal, abatement, and transport procedures for asbestos-containing materials. Releases of asbestos from industrial, demolition, or construction activities are prohibited by these regulations, and medical evaluation and monitoring are required for employees performing activities that could expose them to asbestos. Additionally, the regulations include warnings and practices to reduce the risk for asbestos emissions and exposure. Finally, federal, state, and local agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos.

Polychlorinated Biphenyls

The EPA prohibited the use of PCBs in the majority of new electrical equipment starting in 1979 and initiated a phase-out for much of the existing PCB-containing equipment. The inclusion of PCBs in electrical equipment and the handling of those PCBs are regulated by the provisions of the Toxic Substances Control Act (US Code, Title 15, §§ 2601 et seq.). Relevant regulations include labeling and periodic inspection requirements for certain types of PCB-containing equipment and outline highly specific safety procedures for their disposal. The state likewise regulates PCB-laden electrical equipment and materials contaminated above a certain threshold as hazardous waste; these regulations require that such materials be treated, transported, and disposed accordingly. At lower concentrations for nonliquids, regional water quality control boards may exercise discretion over the classification of such wastes.

Lead-Based Paint

Cal/OSHA's Lead in Construction Standard (8 CCR § 1532.1) addresses permissible exposure limits; exposure assessment; compliance methods; respiratory protection; protective clothing and equipment; housekeeping; medical surveillance; medical removal protection; employee information, training, and certification; signage; record keeping; monitoring; and agency notification.

Medical Waste Regulations

Medical Waste Management Act

The Medical Waste Management Act (California Health and Safety Code §§ 117600–118360) sets forth requirements for storage, transport, treatment, and disposal of medical waste and is administered by the California Department of Public Health Medical Waste Management Program.

Assembly Bill 333

Assembly Bill 333 (AB 333; Chapter 564, Statutes of 2014) sets forth additional requirements for transport of medical waste.

Senate Bill 225

Senate Bill 225 (SB 225; Chapter 352, Statutes of 2015) sets forth additional requirements for containment, storage, and transport of medical waste.

Bloodborne Pathogens

CCR Title 8, Section 5193, contains regulations governing occupational exposure of blood-borne pathogens. Guidelines for avoiding and minimizing exposure to blood-borne pathogens are issued by the California Division of Occupational Safety and Health in "Exposure Control Plan for Bloodborne Pathogens" (DOSH 2001a) and "A Best Practices Approach for Reducing Bloodborne Pathogen Exposure" (DOSH 2001b).

Radiologic Safety Regulations

Radiation Control Law

The Radiation Control Law governs sources of ionizing radiation for the protection of occupational and public health and safety (California Health and Safety Code §§ 114960 et seq.). Regulations implementing the Radiation Control Law are in 17 CCR Sections 30100 et seq. and are implemented by the California Department of Public Health.

Radiologic Technology Act

The Radiologic Technology Act (California Health and Safety Code § 27[f]) governs the use of radiologic equipment in health care, including x-ray machines. Regulations implementing the Radiologic Technology Act are in 17 CCR Sections 30400 et seq.

5.6.1.2 REGULATORY AGENCIES

United States Environmental Protection Agency

The EPA is the primary federal agency that regulates hazardous materials and waste. In general, the EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. The agency is responsible for researching and setting national standards for a variety of environmental programs and delegates to states and Native American tribes the responsibility for issuing permits and monitoring and enforcing compliance. EPA programs promote handling hazardous wastes safely, cleaning up contaminated land, and reducing waste volumes through such strategies as recycling. California falls under the jurisdiction of EPA Region 9. Under the authority of RCRA and in cooperation with state and tribal partners, the EPA Region 9 Waste Management and Superfund divisions manage programs for site environmental assessment and cleanup, hazardous and solid waste management, and underground storage tanks.

California Environmental Protection Agency

The CalEPA was created in 1991 by Governor Executive Order W-5-91. Several state regulatory boards, departments, and offices were placed under the CalEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to ensure the coordinated deployment of state resources. Among those responsible for hazardous materials and waste management are the DTSC, Department of Pesticide Regulation, and Office of Environmental Health Hazard Assessment CalEPA also oversees the unified hazardous waste and hazardous materials management regulatory program (Unified Program), which consolidates and coordinates the following six programs:

- Hazardous Materials Release Response Plans and Inventories (Business Plans)
- Underground Storage Tank Program
- Aboveground Petroleum Storage Tank Act
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs
- California Uniform Fire Code: Hazardous Material Management Plans and Inventory Statements
- California Accidental Release Prevention (CalARP) Program

California Department of Toxic Substances Control

DTSC, which is a department of CalEPA, is authorized to carry out the federal RCRA hazardous waste program in California to protect people from exposure to hazardous wastes. The department regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California, primarily under the authority of RCRA and in accordance with the California Hazardous Waste Control Law (Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (22 CCR, Divisions 4 and 4.5). Permitting, inspection, compliance, and corrective action programs ensure that people who manage hazardous waste follow state and federal requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Certified Unified Program Agency

A CUPA is a local agency that has been certified by CalEPA to implement the local Unified Program. The CUPA can be a county, city, or joint powers authority. A participating agency is a local agency that has been designated by the local CUPA to administer one or more of the Unified Programs within their jurisdiction on behalf of the CUPA. A designated agency is a local agency that has not been certified by CalEPA to become a CUPA, but is the responsible local agency that would implement the six Unified Programs until they are certified. Currently, there are 83 CUPAs in California. The LACoFD is the certified CUPA for the project site as well as for many cities throughout Los Angeles County.

Hazardous Materials Business Plans

Both the federal government (Code of Federal Regulations) and the State of California (California Health and Safety Code) require any business that handles more than a specified amount—or "reporting quantity"—of hazardous or extremely hazardous materials to submit a hazardous materials business plan to its CUPA.

Business plans must include an inventory of the hazardous materials at the facility. Businesses must update their business plan at least every three years and the chemical portion every year. Also, business plans must include emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans need to identify the procedures for immediate notification of all appropriate agencies and personnel, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all company emergency coordinators, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel.

California Accidental Release Prevention Program

CalARP became effective on January 1, 1997, in response to Senate Bill 1889 (Chapter 715, Statutes of 1996). CalARP aims to be proactive and therefore requires businesses to prepare risk management plans, which are detailed engineering analyses of the potential accident factors at a business and the mitigation measures that can be implemented to reduce this accident potential. This requirement is coupled with the requirements for preparation of hazardous materials business plans under the Unified Program, implemented by the CUPA.

5.6.1.3 EXISTING CONDITIONS

Historical Land Uses

Historical Topographic Maps

Four historical topographic maps from the National Geologic Map Database maintained by the U.S. Geological Survey were reviewed.[1]

- **1896:** The site is shown as vacant except for three roadways: one north-south near the later alignment of Normandie Avenue; one extending southeast from Normandie Avenue; and a third short east-west roadway connecting the former two.
- **1924:** Several roadways are present, including Normandie Avenue and Carson Street. A Pacific Electric Railroad track extends north-south next to the west side of Normandie Avenue. There are several sparsely scattered buildings in the part of the site south of Carson Street.

[1] The titles, dates, and scales of the topographic maps reviewed are:
- Redondo; 1896; 1:62,500 (USGS 1896)
- Compton; 1924; 1:24,000 (USGS 1924)
- Torrance; 1964; 1:24,000 (USGS 1964)
- Torrance; 1981; 1:24,000 (USGS 1981)

- **1951:** Los Angeles Harbor General Hospital is shown in the center of the project site. Several roadways are shown, including a small network of roadways in and surrounding the hospital site. Most of the site north and south of the hospital is vacant except for three short rows of buildings—one north of the hospital and two south—and sparsely scattered buildings elsewhere. The Pacific Electric Railway is present.

- **1981:** The project site is entirely built out with urban uses. The I-110 is shown next to the east site boundary. The former Pacific Electric railroad track now extends south only to 213th Street and is mapped as a branch of a Southern Pacific railroad track. The 223rd Street School is mapped in the southwest part of the site, Van Deene Avenue School in the northeast part of the site, and a shopping center next to the north side of Carson Street.

Historical Aerial Photographs

Historical aerial photographs from Nationwide Environmental Title Research were also reviewed.

- **1952:** There are scattered developed land uses in the southern part of the site; most uses appear to be residential, some scattered and some in rows. Much of the Los Angeles County Harbor General Hospital site is developed with rows of small buildings—barracks remaining from use as a US Army hospital during World War Two (HUCLAMC 2016). The northern part of the site was mostly vacant except for a few structures in the northeast, rows of houses along Berendo Avenue extending north from the hospital, and rows of houses along a loop road extending west from Vermont Avenue about where 214th Street is today.

- **1963:** The majority of the site is built out with hospital, residential, industrial, commercial, and school uses as it is today. There are limited vacant areas in the eastern part of the site—both south and north of the hospital—and in the southwest part of the site.

- **1980:** The site is built out similarly to current conditions. (NETR 2016)

Environmental Database Search

An environmental database search for the project site was conducted by Environmental Data Resources (EDR) on November 10, 2016 (see Appendix F of this DEIR for the full database search report). Table 5.6-1 summarizes properties in the Specific Plan area that are listed on environmental hazards databases.

Table 5.6-1 Onsite Environmental Database Listings

Map No.	Site Address	Database and Reason for Listing
H75	Gardena Valley #4 Landfill 833 W Torrance Blvd	EnviroStor evaluation site. Inactive; action required as of 2015. EnviroStor lists hazardous materials/waste cleanup, permitting, enforcement and investigation sites.
H358	Berada Corp. 801 Torrance Carson, Ca	WMUDS/SWAT
E363	Alpine Texaco 701 Torrance Blvd	EDR Historical Auto Stations
C59	Gardena Valley Dump #3 20800 S Vermont Ave	Los Angeles Co. HMS
C60	Rowland Ngyuen 20800 Doble Ave	Haznet: 1 shipment in 2014
49	Bob Mckewen 20811 Doble Ave	Haznet: 1 shipment in 2010
C58	VFW Post #10166 20820 S Vermont Ave	Los Angeles Co. HMS
45	Tammy Clark 818 Greenhedge St	Haznet: 1 shipment in 2012
E26	Catherine Altobello 717 Greenhedge St	Haznet: 1 shipment in 2012
E32	Carl Servino 20812 Orchard Ave	Haznet: 1 shipment in 2013
F53	Villareal, Aaron 708 W. 209th St.	Haznet: 1 shipment in 2014
I67	Sal Cenatiempo 907 Javelin St	Haznet: 1 shipment in 2014
B50	Van Deene Ave Elementary School 826 Javelin St	RCRA database: LQG
65	21127 Doble Ave	EDR Historical Auto Stations
D70	Vivian Le 808 Clarion Dr	Haznet: 1 shipment in 2014
D62	Rhonda Thibault 712 W 213th St	Haznet: 1 shipment in 2014
D66	Roxie Jones 21242 Menlo Ave	Haznet: 1 shipment in 2013
37	Donna Asari 1223 W 213th St	Haznet: 1 shipment in 2013
23	Lisa Genady 21305 Payne Ave	Haznet: 1 shipment in 2013
18	Osmar Serrano 21312 Budlong Ave	Haznet: 1 shipment in 2014
19	Justin Lee 21315 Broadwell Ave	Haznet: 1 shipment in 2014
31	Dale Kaneshiro 941 W. 214th St.	Haznet: 1 shipment in 2012

Table 5.6-1 Onsite Environmental Database Listings

Map No.	Site Address	Database and Reason for Listing
G41	21414 Vermont Ave Unincorporated County Area, Carson	CHMIRS (California Hazardous Materials Incident Reporting System) Sewage overflowed into storm drain 2007; contained and cleaned up.
361	21600 Normandie Ave	EDR Historic Cleaners
J73	Jimmy Quiroz 1228 Desford St	Haznet: 1 shipment in 2014
43	Pete Mamea 21403 Berendo Ave	Haznet: 1 shipment in 2012
71	Rosemary Almanza 21420 Broadwell Ave	Haznet: 1 shipment in 2014
G69	Heritage Legacy LLC 21414 Vermont	LA Co. Site Mitigation
J187	John Piper 1207 Ritner St	Haznet: 1 shipment in 2013
V151	John Bates 21602 S Vermont Ave	Los Angeles Co. HMS
V347	John Bates 21600 Vermont Ave	LUST; Aviation fuel affected soil (case closed in 1996)
V354	US Storage Centers 735 W Carson St	Los Angeles Co. HMS
K141	Polly's Pies Restaurant 819 W Carson St	Los Angeles Co. HMS
K110	Fiesta Car Wash 21611 S Vermont Ave	Los Angeles Co. HMS
0277	Smile Care Dental Group 923 W Carson St	Haznet: 20 shipments in 1993-2003
A193	C C Donuts 1001 W Carson St #C	Los Angeles Co. HMS
M320	Peter Horvath Et Al 1123 W Carson St	Los Angeles Co. HMS
Q166	Genkai Grill 1249 W Carson St	Los Angeles Co. HMS
Q121	Sungs Bbq House 1225 W Carson St	Los Angeles Co. HMS
U189	Phil's Fish-Grill 1175 W Carson St	Los Angeles Co. HMS
P290	Dry Cleaners 114-1259 W Carson 1161 W Carson St	Los Angeles Co. HMS
P94	Fiesta Grill Mediterranean 1153 W Carson St	Los Angeles Co. HMS
M155	Lee's Sandwiches 1145 W Carson St	Los Angeles Co. HMS
M88	Wienerschnitzel Restaurant #38 1125 W Carson St	Los Angeles Co. HMS
M337	T Shirt Warehouse 1101 West Carson	Haznet: 2 shipments in 1995
A173	1012 Carson St Store for Lease	ERNS: Leak of about 600 pounds of several hazardous materials in 1988

Table 5.6-1 Onsite Environmental Database Listings

Map No.	Site Address	Database and Reason for Listing
A283	Fortune Bowl 1029 W Carson St	Los Angeles Co. HMS
O92	941 W Carson St	EDR Historical Auto Stations
K339	Vermont & Carson St Carson	Clandestine drug lab (CDL)
K313	Hong Kong Garden Restaurant 21718 S Vermont Ave	Los Angeles Co. HMS
R107	Hayashi Restaurant 800 W Carson St #38	Los Angeles Co. HMS
R324	Videosonic Labs Inc 733 W Carson St	Los Angeles Co. HMS
N108	Photo Finest Inc 21720 S Vermont Ave #104	Los Angeles Co. HMS
N106	Industrial Technology Inc 21822 S Vermont Ave	Los Angeles Co. HMS
350	LA Port o Emb Station Hosp *[Now Harbor-Ucla MC]*	EnviroStor: Formerly Used Defense Sites (FUDS)
AC360	Harbor UCLA Diagnostic Imaging 21828 S Normandie Ave	SQG listed on RCRA database; Haznet: 9 shipments, 1993-1997
W254	Natl Supply Co Dump (Dest) 22000 Normandie Ave	Los Angeles Co. HMS
79	Barbara Holland 946 W 220th St Unit 210	Haznet: 1 shipment in 2013
L99	Bepo Auto Repair 802 W 220th St	Haznet: 1 shipment in 2011
L331	Pacific Bell 826 W Second Hundred Twenty St	RCRA database: NONGEN
T127	Debra Johnson 1211 W 221st St	Haznet: 1 shipment in 2014
156	John Naito Nursery 22102 Normandie Ave	Los Angeles Co. HMS
T164	Nawaid Rana 22114 Kenwood Ave	Haznet: 2 shipments in 2011
202	Larry Billoups 1220 W 222nd St	Haznet: 1 shipment in 2014
172	Metal Cleaning Ind Inc (Dest) 1120 Jay St	Los Angeles Co. HMS
295	LAUSD/ Meyler St Elem 1123 W 223rd St	Haznet: 5 shipments in 2000-2005
260	Mikamo Nursery 1029 W 223rd St	Los Angeles Co. HMS
S124	Semiconductor Materials Inc 22108 S Vermont Ave #101	Los Angeles Co. HMS
S162	Bickerton Iron Works 22118 S Vermont Ave	Haznet: 6 shipments in 1998-2010

Table 5.6-1 Onsite Environmental Database Listings

Map No.	Site Address	Database and Reason for Listing
X175	United Microwave Products Inc 22129 S Vermont Ave	Los Angeles Co. HMS
X179	Mechanical Seal Repair 22122 S Vermont	Haznet: 1 shipment in 1998
X219	Delta Conversion 22203 S Vermont Ave #B	Los Angeles Co. HMS
X204	Alfra Industries Inc 22134 S Vermont Ave #C	Los Angeles Co. HMS
Y233	CM Auto Detail 22209 S Vermont Ave	Los Angeles Co. HMS
Y273	925 West 223rd Street	CHMIRS: Release from electric pole transformer entered storm drain (contained and cleaned up in 2010)
AB297	The Soft Touch Pet Lodge 951 W 223rd St	Los Angeles Co. HMS
AA292	Jr Jansen Inc 22231 S Vermont Ave	Los Angeles Co. HMS

Source: EDR 2016.
Note: Addresses in West Carson show Torrance as the city because the post office for West Carson (90502) is in Torrance. All addresses are in West Carson unless specified otherwise.
Acronyms: CDL: Clandestine drug lab
CHMIRS: California Hazardous Materials Incident Reporting System
EnviroStor: hazardous materials/waste cleanup, permitting, enforcement and investigation sites
ERNS: Emergency Response Notification System
FUDS: Formerly Used Defense Sites
Haznet: hazardous waste shipment manifests
LOS ANGELES CO. HMS: Los Angeles County Department of Public Works database of Industrial waste and underground storage tank sites
LQG: Large Quantity Generator of hazardous wastes
LUST: Leaking Underground Storage Tank
NONGEN: Non-generator of hazardous waste
RCRA: Resource Conservation and Recovery Act
SQG: Small Quantity Generator of hazardous wastes
WMUDS/SWAT: Waste Management Unit Database/Solid Waste Assessment Test

Selected Offsite Hazardous Materials Listings

Offsite environmental database listings within 0.25 mile of the project site are listed in Table 5.6-2.

Table 5.6-2 Offsite Environmental Database Listings within 0.25 Mile of the Project Site

Map No.	Site Address	Database/Reason for Listing/Regulatory Status
AN420	Penske Truck Leasing Co., LP 20425 S Hamilton Ave	AST
417	Rollins Leasing Corp Faci 20425 Hamilton	HIST CORTESE
403	Gardena Valley 1 & 2 20740 S. Figueroa, 225-305w Torrance Bl Carson	SWIS: Landfill closed in 1959
428	Royal Boulevard Class III Disposal Site Royal Boulevard Between 209th & 210th Streets	CA BOND EXP. PLAN: Historical database of expenditure plans per the state Hazardous Substance Cleanup Bond Act of 1984.
AK411	Royal Blvd. Dump 20950 S. Royal Blvd	WMUDS/SWAT

Table 5.6-2 Offsite Environmental Database Listings within 0.25 Mile of the Project Site

Map No.	Site Address	Database/Reason for Listing/Regulatory Status
409	Royal Boulevard Class III Disposal Site Royal Blvd Btwn 209th And 210th Streets	EnviroStor: Historic landfill (no further action in 2010)
AL418	City of Carson - Hicks Family Property 315 Torrance Blvd Carson	SLIC
AL416	City of Carson - Hicks Family Property Carson, Ca 90745	SLIC
429	Gardena Valley #5 (Golden Eagle) 306 West Torrance Boulevard Carson	SWIS: Landfill closed in 1963
AF380	Carson Tank Farm 21000 Figueroa Carson	State Water Resources Control Board: ENF
AF382	CWD, Llc 21046 S Figueroa St Carson	LQG
AE381	Dewey Pest Control 21111 S Figueroa Street Carson	SQG; UST; SWEEPS UST, HIST UST, CA FID UST
AE376	D and N Concrete Pumping Inc 21125 Figueroa St Carson	SQG Haznet: 1 shipment in 1995
AM415	Mcdonnell Douglas Aerospace Ta 21000 S Normandie Ave	SQG
AH389	Service Station 2529 600 W Carson Carson	HIST UST
408	K & K Auto Parts 1407 W Carson Street	SQG
AG396	LAUSD White Junior High School 22102 S Figueroa St Carson	SQG
AG388	Shell 22235 S Figueroa Carson	HIST UST
407	Aero Arc 22433 S Vermont Ave	SQG
412	M CS Unlimited 22517 Normandie Ave	SQG
406	Simpson Sports 22412 South Normandie Ave	SQG

Source: EDR 2016.

Note: Addresses in West Carson show Torrance as the city because the post office for West Carson (90502) is in Torrance. All addresses are in Torrance unless specified otherwise.

Acronyms: AST: Aboveground Storage Tank
CA BOND EXP. PLAN: Historic database of expenditure plans per the state Hazardous Substance Cleanup Bond Act of 1984.
ENF: Enforcement Action Listing, State Water Resources Control Board
HIST CORTESE: historic database of hazardous materials release sites
HIST UST: historic underground storage tank sites
SLIC: Spills Leaks Investigations and Cleanup
SQG: Small Quantity Generator of hazardous wastes
SWIS: Solid Waste Information System: solid waste disposal, transfer, recycling, composting, and transformation sites
WMUDS/SWAT: Waste Management Unit Database/Solid Waste Assessment Test

Del Amo Superfund Site

The Del Amo Superfund Site is about 1,500 feet north of the project site. The site was used for manufacturing synthetic rubber by several manufacturers from 1943 until 1972. Contamination consisting of hydrocarbon solvents, unspecified aqueous solution, and unspecified solvent mixtures has affected groundwater. Contaminated soil from part of the site has been removed, and remediation via soil vapor extraction is underway (Corps 2015).

Other Hazardous Materials Potentially Onsite

Asbestos

Asbestos is the name of a group of silicate minerals that are heat resistant and thus were commonly used as insulation and fire retardant. Inhaling asbestos fibers has been shown to cause lung disease (asbestosis) and lung cancer (mesothelioma) (DTSC 2016). Beginning in the early 1970s, a series of bans on the use of certain asbestos-containing materials in construction were established by the EPA and the Consumer Product Safety Commission. Most US manufacturers voluntarily discontinued the use of asbestos in certain building products during the 1980s. Requirements for limiting asbestos emissions from building demolition and renovation activities are specified in South Coast Ari Quality Management District (SCAQMD) Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities).

Since much of the site was built out by 1963, asbestos-containing materials could be present in some buildings onsite.

Lead

Lead was formerly used as an ingredient in paint (before 1978) and as a gasoline additive; both of these uses have been banned. Lead is listed as a reproductive toxin and a cancer-causing substance; it also impairs the development of the nervous system and blood cells in children (DTSC 2016). Paint containing lead at concentrations of 5,000 milligrams per kilogram (mg/Kg or parts per million) is considered lead-based paint. Structures built before 1978 are presumed to contain lead-based paint.

Schools within 0.25 Mile of the Project Site

Two schools are in the Specific Plan area, and two additional schools are within 0.25 mile of the Specific Plan.

- Van Deene Avenue Elementary School, 826 Javelin Street, West Carson (onsite)
- Halldale Elementary School, 21514 Halldale Avenue, Los Angeles (opposite Normandie Avenue from the western project boundary)
- Meyler Street Elementary School, 1123 West 223rd Street, West Carson (onsite)
- White Middle School, 22102 South Figueroa Street, Carson (about 580 feet east of the project site)

Heliports

One heliport is onsite atop the 2 South building in the east-central part of the Harbor-UCLA Medical Center campus. No other heliports are within two miles of the project site (Airnav.com 2016).

Emergency Response Planning

The Los Angeles County Office of Emergency Management maintains the Los Angeles County Operational Area Emergency Response Plan and the County of Los Angeles All-Hazard Mitigation Plan. The Office of Emergency Management leads and coordinates disaster plans and disaster preparedness exercises for all cities and special districts in Los Angeles County.

Disaster Routes designated by the Los Angeles County Department of Public Works are freeways, highways, or arterial routes identified for use during times of crisis. These routes bring in emergency personnel, equipment, and supplies to impacted areas in order to save lives, protect property, and minimize impact to the environment. During a disaster, these routes have priority over all other roads for clearing, repairing, and restoration. Western Avenue, about 0.5 miles west of the site, and I-110 are designated primary disaster routes, and Carson Street is a secondary disaster route (DPW 2012).

Harbor-UCLA Medical Center is one of five Level I trauma centers in Los Angeles County. A Level I trauma center is capable of providing total care for every aspect of injury—from prevention through rehabilitation (ATS 2016).

5.6.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

H-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

H-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

H-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.

H-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

H-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, would result in a safety hazard for people residing or working in the project area.

H-6 For a project in the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.

H-7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

H-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to the urbanized areas or where residences are intermixed with wildlands.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold H-5
- Threshold H-8

These impacts will not be addressed in the following analysis.

5.6.3 Plan, Programs, and Policies

5.6.3.1 REGULATORY REQUIREMENTS

RR HAZ-1 Any project-related hazardous materials and hazardous wastes will be transported to and/or from the project in compliance with any applicable state and federal requirements, including the U.S. Department of Transportation regulations listed in the Code of Federal Regulations (Title 49, Hazardous Materials Transportation Act); California Department of Transportation (Caltrans) standards; and the California Occupational Safety and Health Administration (Cal/OSHA) standards.

RR HAZ-2 Any project-related hazardous waste generation, transportation, treatment, storage, and disposal will be conducted in compliance with Subtitle C of the Resource Conservation and Recovery Act (RCRA) (Code of Federal Regulations, Title 40, Part 263), including the management of nonhazardous solid wastes and underground tanks storing petroleum and other hazardous substances. The project will be designed and constructed in accordance with the regulations of the Los Angeles County Fire Department, which serves as the designated CUPA and which implements state and federal regulations for the following programs: (1) Hazardous Materials Release Response Plans and Inventory Program, (2) UST Program, (3) AST Program, (4) Hazardous Waste Generator and Onsite Hazardous Waste Treatment Program, (5) California Uniform Fire Code, and (6) CalARP Program.

RR HAZ-3 Any project-related underground storage tank (UST) repairs and/or removals will be conducted in accordance with the California Underground Storage Tank Regulations (Title 23, Chapter 16 of the California Code of Regulations). Any unauthorized release of hazardous materials will require release reporting, initial abatement, and corrective actions

that will be completed with oversight from the RWQCB, DTSC, LACoFD, SCAQMD, and/or other regulatory agencies, as necessary. Any project-related use of existing USTs will also have to be conducted (i.e., used, maintained, and monitored) in accordance with the California Underground Storage Tank Regulations (Title 23, Chapter 16 of the California Code of Regulations).

RR HAZ-4 Any project-related new construction, excavations, and/or new utility lines within 10 feet or crossing existing high pressure pipelines, natural gas/petroleum pipelines, or electrical lines greater than 60,000 volts, will be designed and constructed in accordance with the California Code of Regulations (Title 8, Section 1541).

RR HAZ-5 Any project-related demolition activities that have the potential to expose construction workers and/or the public to asbestos-containing materials (ACMs) or lead-based paint (LBP) will be conducted in accordance with applicable regulations, including, but not limited to:

- South Coast Air Quality Management District's (SCAQMD's) Rule 1403
- California Health and Safety Code (Section 39650 et seq.)
- California Code of Regulations (Title 8, Section 1529)
- California Occupational Safety and Health Administration (Cal/OSHA) regulations (California Code of Regulations, Title 8, Section 1529 [Asbestos] and Section 1532.1 [Lead])

RR HAZ-6 The project will be designed and constructed in accordance with Part 77 of the Federal Aviation Regulations (FAR), which requires the County to notify the Federal Aviation Administration of proposed construction or alteration within 20,000 feet from the nearest point of the nearest runway of an airport where the structure would extend into a slope of a 100:1 and within 5,000 feet of a heliport where the structure would extend into a slope of a 25:1 from the nearest landing and take-off area of the heliport.

5.6.4 Environmental Impacts

The following impact analysis addresses thresholds of significance for potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.6-1: Project construction and operations would involve the transport, use, and/or disposal of hazardous materials. [Thresholds H-1 (part), H-2 (part), and H-3]

Impacts during construction and operation are assessed in the following analysis. Impacts during the demolition phase of the project are analyzed in Impact 5.6-2.

Impact Analysis:

Routine Transport, Use, Storage and Disposal of Hazardous Materials

Construction

Construction in accordance with the Specific Plan would involve demolition, grading, and construction of new buildings. Potentially hazardous materials used during construction include substances such as paints, sealants, solvents, adhesives, cleaners, and diesel fuel. There is potential for these materials to spill or to create hazardous conditions. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard. These activities would also be short term or one time in nature. Project construction workers would be trained in safe handling and hazardous materials use.

To prevent hazardous conditions, existing local, state, and federal laws—such as those listed under Section 5.6.1.1, *Regulatory Background*—are to be enforced at the construction sites. For example, compliance with existing regulations would ensure that construction workers and the general public are not exposed to any risks related to hazardous materials during demolition and construction activities. Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, exposure warnings, availability of safety equipment, and preparation of emergency action/prevention plans. For example, all spills or leakage of petroleum products during construction activities are required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable state and local regulations for the cleanup and disposal of that contaminant. All contaminated waste encountered would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility.

Furthermore, strict adherence to all emergency response plan requirements set forth by LACoFD would be required throughout the duration of project construction. Construction activities would be in and near existing sensitive uses, including Harbor-UCLA Medical Center and four schools.

Regulatory requirement RR HAZ-1 also ensures compliance with the USDOT and Cal/OSHA standards for hazardous materials and hazardous waste transportation. RR HAZ-2 requires all hazardous waste generation, transportation, treatment, storage, and disposal to be in compliance with the RCRA and the LACoFD as the designated CUPA. RR HAZ-3 requires all UST repairs or removals to be conducted in accordance with the California Underground Storage Tank Regulations with oversight from the RWQCB, DTSC, LACoFD, SCAQMD and/or other regulatory agencies, as needed. RR HAZ-4 ensures any project construction within 10 feet of or crossing existing high pressure pipelines, natural gas/petroleum pipelines, electrical lines greater than 60,000 volts are designed in accordance with California Code of Regulations, Title 9, Section 1541.

Upon compliance with federal, state, and County regulatory requirements RR HAZ-1 through RR HAZ-4, construction activities in accordance with the proposed project would not pose substantial hazards to the public or the environment, and impacts would be less than significant.

Operation

Chemical Hazards

Operation of the proposed facilities would involve use of hazardous chemicals such as chemotherapy medicines, sterilants, disinfectants, laboratory chemicals, pesticides, and compressed gases and would generate wastes containing such chemicals. Hazardous chemicals would be used in compliance with existing regulations and guidelines of OSHA, Cal/OSHA, National Institute for Occupational Safety and Health (NIOSH), US DOT, the EPA, California Department of Public Health, and LACoFD.

Biohazards

Operation of the proposed facilities would involve use of biohazardous substances such as biotherapy agents, human tissues or organs, human blood, and microbiological cultures and specimens. Project operation would also generate all six categories of biohazardous wastes listed above (human tissues, organs, or body parts; human blood and other body fluids; microbiological waste; sharps; isolation waste; and animal wastes). Therefore, project operation could pose hazards to existing and future workers, patients, and visitors. The use of biohazardous substances and the storage and transport of biohazardous wastes would be conducted in compliance with existing regulations and guidelines, including the Medical Waste Management Act, AB 333, SB 225, CCR Title 8 Section 5193, and OSHA and NIOSH guidelines.

Radioactive Materials

Operation of the proposed facilities would involve increased use of radioactive materials in diagnosis and treatment. Thus, project operation could pose radiologic hazards to Harbor-UCLA Medical Center workers, patients, and visitors. Radioactive materials would be used, stored, transported, and disposed of in compliance with CFR Title 10, Chapter 1; the Radiation Control Law; the Radiologic Technology Act; and regulations implementing the latter two laws.

Accidental Release of Hazardous Materials

The use, storage, and transport of hazardous materials and hazardous wastes in compliance with the laws and regulations mentioned above would minimize the potential for releases of hazardous materials that could pose substantial hazards to the public or the environment and would entail prompt containment and cleanup of spills.

Businesses handling reporting quantities of hazardous or extremely hazardous materials would maintain business plans with procedures in the event of a hazardous materials release, including immediate notification of all appropriate agencies and personnel, identification of local emergency medical assistance, contact information for company emergency coordinators, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel.

Construction contractors would maintain equipment and supplies on their construction sites for containing and cleaning up hazardous materials spills and would train their staffs on such containment and cleanup.

In addition, regulatory requirements RR HAZ-1 and RR HAZ-2 would further enforce compliance with US DOT, Cal/OSHA, and LACoFD pertaining to hazardous materials and wastes.

Hazards to Persons at Schools on and near the Site

Project buildout would result in increased usage and storage of hazardous materials onsite and increased transportation of hazardous materials to and from the site. Thus, project operation could subject people on and near the site, including at the four schools on or near the site, to increased hazards from hazardous materials. Compliance with the regulations described above would reduce hazards from hazardous materials emissions and handling such that no substantial health risks to persons at the four schools would occur, and impacts would be less than significant.

Level of Significance before Mitigation: With implementation of regulatory requirements RR HAZ-1 through RR HAZ-4, Impact 5.6-1 would be less than significant.

Impact 5.6-2: Demolition of existing buildings could expose people to asbestos-containing materials and/or lead-based paint. [Thresholds H-1 (part), H-2 (part)]

Impact Analysis: Demolition of buildings has the potential to expose and disturb asbestos containing materials (ACMs) and lead-based paint (LBP). Demolition can cause encapsulated ACMs (if present) to become friable and, once airborne, they are considered a carcinogen.[2] Demolition of the existing buildings and structures can also release lead into the air if LBP is not properly removed and handled. The EPA has classified lead and inorganic lead compounds as "probable human carcinogens" (USEPA 2015). Such releases could pose significant risks to persons living and working in and around project site as well as to project construction workers.

Abatement of all ACM and LBP encountered during any future building demolition would be required to be conducted in accordance with all applicable laws and regulations, including those of the EPA (which regulates disposal), OSHA, US Department of Housing and Urban Development, Cal/OSHA (which regulates employee exposure), and SCAQMD. County regulatory requirement RR HAZ-5 also enforces any demolition activities that have the potential to release ACMs and LBP to be conducted in accordance with SCAQMD, California Health and Safety Code Section 39650 et seq., California Code of Regulations (Title 8, Section 1529), and Cal/OSHA regulations.

The EPA requires that all asbestos work performed within regulated areas be supervised by a competent person who is trained as an asbestos supervisor (EPA Asbestos Hazard Emergency Response Act, 40 CFR 763). SCAQMD's Rule 1403 requires that buildings undergoing demolition or renovation be surveyed for ACMs prior to any demolition or renovation activities. Should ACMs be identified, Rule 1403 requires that ACMs be safely removed and disposed of at a regulated site, if possible. If it is not possible to safely remove ACMs, Rule 1403 requires that safe procedures be used to demolish the building with asbestos in place without resulting in a significant release of asbestos. Additionally, during demolition, grading, and excavation,

[2] When dry, an ACM is considered friable if it can be crumbled, pulverized, or reduced to powder by hand pressure. If it cannot, it is considered a nonfriable ACM. It is possible for nonfriable ACMs to become friable when subjected to unusual conditions, such as when demolishing a building or removing an ACM that has been glued into place.

all construction workers would be required to comply with the requirements of CCR Title 8, Section 1529 (Asbestos), which provides for exposure limits, exposure monitoring, respiratory protection, and good working practices by workers exposed to asbestos.

Cal/OSHA regulates the demolition, renovation, or construction of buildings involving lead-based materials. It includes requirements for the safe removal and disposal of lead, and the safe demolition of buildings containing LBP or other lead materials. Additionally, during demolition, grading, and excavation, all construction workers would be required to comply with the requirements of CCR Title 8, Section 1532.1 (Lead), which provides for exposure limits, exposure monitoring, respiratory protection, and good working practice by workers exposed to lead.

The potential exposure of construction workers to ACMs or LBP is a potentially significant impact. Survey of existing structures prior to demolition would be required to characterize the potential exposure and further prevent impacts from the potential release of ACM or LBP associated with individual development projects.

Level of Significance before Mitigation: Without mitigation, Impact 5.6-2 would be potentially significant.

Impact 5.6-3: Several properties within the Specific Plan area are listed on hazardous materials databases. [Threshold H-4]

Impact Analysis: Table 5.6-1 above lists 77 hazardous materials sites within the Specific Plan area. Four of those sites – two listed on the California Hazardous Materials Incident Reporting System (CHMIRS), one LUST site, and one Emergency Response Notification System (ERNS) site – document past hazardous materials releases. All past releases are known to regulatory agencies. The two releases listed on CHMRIS were contained and cleaned up, and the LUST case was closed in 1996.

However, redevelopment of individual properties within the Specific Plan area could have unknown recognized environmental conditions related to soils, groundwater, and vapors/gases. Thus, development in accordance with the Specific Plan could create a significant hazard to the public or the environment.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.6-3 would be potentially significant.

Impact 5.6-4: One heliport is in the Specific Plan area in the Harbor-UCLA Medical Center campus. [Threshold H-6]

Impact Analysis: One heliport is in the Specific Plan area atop the 2 South building in the east-central part of the Harbor-UCLA Medical Center campus. No other heliports are within one mile of the project site (Airnav.com 2016). Specific Plan implementation could involve relocation of the heliport, as the 2 South building is slated for demolition in the Harbor-UCLA Medical Center Master Plan. Development within the Harbor-UCLA Medical Center campus in accordance with the Specific Plan would require the medical center staff responsible for safety and security to review any proposed new locations for the heliport and building heights near that location to identify safe approach and departure routes for helicopters. Specific Plan buildout would not cause substantial hazards to people onsite, and impacts would be less than significant.

Additionally, County regulatory requirement RR HAZ-6 requires all projects to be designed and constructed in accordance with Part 77 of the FAR, which requires the County to notify the Federal Aviation Administration of proposed construction or alteration within 20,000 feet from the nearest point of the nearest runway of an airport where the structure would extend into a slope of a 100:1 and within 5,000 feet of a heliport where the structure would extend into a slope of a 25:1 from the nearest landing and take-off area of the heliport.

Level of Significance before Mitigation: With implementation of regulatory requirement RR HAZ-6, Impact 5.6-4 would be less than significant.

Impact 5.6-5: Project development could affect the implementation of an emergency responder or evacuation plan. [Threshold H-7]

Impact Analysis: Specific Plan buildout would involve construction activities and construction traffic that could impede emergency access to the project site and surrounding neighborhoods. DPW designates I-110 as a primary disaster route, and Carson Street as a secondary disaster route. Many construction projects are required to submit construction traffic management plans to the Los Angeles County Public Works Traffic and Lighting Division for review and approval. The Traffic and Lighting Division would require that any construction activities do not block emergency access to Harbor-UCLA Medical Center or surrounding neighborhoods.

Harbor-UCLA Medical Center is one of five Level I trauma centers in Los Angeles County. A Level I trauma center is capable of providing total care for every aspect of injury—from prevention through rehabilitation (ATS 2016). Specific Plan buildout would permit development of up to 2.7 million square feet of nonresidential development, which may include health care, research, medical office, transitional housing, and incidental retail uses. Thus, Specific Plan buildout would have some favorable impact on emergency response capacity in southern Los Angeles County.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.6-5 would be less than significant.

5.6.5 Cumulative Impacts

Hazardous Materials

Cumulative impacts occur when the potential impacts of one project are compounded with impacts of other development projects or from growth in the area. Hazards and hazardous materials impacts are compounded when multiple development projects would increase the presence of hazardous materials near the proposed project or the potential for hazardous accidents to occur.

However, use, transport, storage, and disposal of hazardous materials by other projects in the project area would be governed by the same regulations and agencies governing such uses by the proposed project. Implementation of existing regulations would minimize potential hazards from accidental release of hazardous materials. Other projects would be subject to independent CEQA review, and projects that could

expose persons at schools within one-quarter mile to substantial hazards through emissions of hazardous substances would be required to implement feasible mitigation measures to reduce those hazards.

Other projects may be proposed on sites listed on environmental databases. CEQA review for such projects would include environmental site assessments (e.g., Phase I, II, or III ESAs). When contaminated soil, soil vapor, or water are discovered on a site, cleanup to appropriate regulatory levels would be required before proposed land uses could be approved where people could come into contact with the contaminated material.

Overall, compliance with laws and regulations governing hazardous materials and hazardous wastes described above in Section 5.6.1.1 and with County regulatory requirements RR HAZ-1 through HAZ-5 would ensure impacts on hazards and hazardous materials are not cumulatively considerable.

Emergency Response Planning

Other projects in the region would involve grading and construction operations entailing staging of trucks and construction materials; trucks and construction equipment entering and exiting roadways; and soil haul truck trips. Thus, other projects could affect emergency access to properties and neighborhoods surrounding their project sites. Primary disaster routes in the community of West Carson include Interstates 405, 105, and 110 and State Routes 1, 107 (Hawthorne Boulevard) and 213 (Western Avenue); several other arterial roadways are designated secondary disaster routes (DPW 2012). Other projects would be required to submit construction traffic management plans to the Los Angeles County Public Works Traffic and Lighting Division for review and approval prior to construction activities. The Traffic and Lighting Division would ensure that emergency access to surrounding neighborhoods would be maintained. Cumulative impacts to emergency response plans would be less than significant.

5.6.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements RR HAZ-1 through RR HAZ-6, the following impacts would be less than significant: 5.6-1, 5.6-4, and 5.6-5.

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.6-2** Demolition of existing structures onsite could expose asbestos-containing materials and lead-based paint.

- **Impact 5.6-3** Properties within the Specific Plan area are included on a list of hazardous materials sites, and could create a significant hazard to the public or the environment.

5.6.7 Mitigation Measures

Impact 5.6-2

HAZ-1 In the event that building materials are encountered during demolition activities that are suspected of being asbestos-containing materials (ACMs), these materials shall be assumed to contain asbestos and shall be handled, removed, transported, and/or disposed of in

accordance with applicable ACM regulations. Any required removal of asbestos shall be made under the direction of a Cal/OSHA-certified asbestos consultant.

Impact 5.6-3

HAZ-2 As a condition of approval for individual development projects on former or existing commercial or industrial sites, the project applicant shall prepare and submit a Phase I Environmental Site Assessment (ESA) to the County of Los Angeles to identify environmental conditions of the development site and determine whether contamination is present. The Phase I ESA shall be prepared by an Environmental Professional in accordance with the American Society for Testing and Materials (ASTM) Standard E 1527.13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." If recognized environmental conditions related to soils or groundwater are identified in the Phase I ESA, the project applicant shall have soil and soil gas sampling performed, as required, as a part of a Phase II ESA. If contamination is found at significant levels, the project applicant shall remediate all contaminated soils in accordance with state and local agency requirements and with the oversight of the California Department of Toxic Substances Control, Regional Water Quality Control Board, Los Angeles County Fire Department, etc. All contaminated soils and/or material encountered shall be disposed of at a regulated site and in accordance with applicable laws and regulations prior to the completion of grading.

Each Phase I ESA conducted for projects that involve demolition activities shall include an inspection for lead-based paint conducted by a licensed or certified lead inspector/assessor and a survey for asbestos-containing materials conducted by a California Certified Asbestos Consultant.

Prior to the issuance of building permits, a report documenting the completion, results, and follow-up remediation on the recommendations, if any, shall be provided to the Los Angeles County Department of Regional Planning evidencing that all site remediation activities have been completed.

5.6.8 Level of Significance After Mitigation

The mitigation measures identified above would reduce potential impacts associated with hazards and hazardous materials to less than significant. Therefore, no significant unavoidable adverse impacts relating to hazards and hazardous materials have been identified for the proposed project.

5.6.9 References

Airnav.com. 2016, November 23. Airport Information. http://www.airnav.com/airports/.

California Department of Transportation (Caltrans). 2016, March 28. 2016 California Public Use Airports and Federal Airfields. http://www.dot.ca.gov/hq/planning/aeronaut/documents/maps/PublicUseAirports_MilitaryAirfieldsMap.pdf.

Department of Public Works, Los Angeles County (DPW). 2012, September 24. Disaster Routes with Road Districts: South Los Angeles County. http://dpw.lacounty.gov/dsg/disasterroutes/map/disaster_rdm-South.pdf.

Federal Motor Carrier Safety Administration (FMCSA). 2017, February 1. Hazardous Materials Routes (FMCSA). https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=8c665f66734e4933a02c9157ea9d6e61.

Federal Railway Administration (FRA). 2017, February 1. FRA Safety Map. http://fragis.fra.dot.gov/GISFRASafety/.

Nationwide Environmental Title Research, LLC (NETR). 2016, November 10. Historical aerial photographs. Historicaerials.com.

Southern California Association of Governments (SCAG). 2014, April 21. Regional Planning & Local Perspectives: Economic and Demographic Trends for the City of Hermosa Beach. http://hermosabeach.granicus.com/MetaViewer.php?view_id=6&clip_id=3027&meta_id=148821.

U.S. Army Corps of Engineers (Corps), Seattle District. 2015, September 30. Third Five-Year Review Report for Del Amo Superfund Site, Operable Unit #1 and #2, Los Angeles County, California. https://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/c8e1baac141d3acd88257ed8007093f5/$FILE/DelAmoOU1-2%20FYRSigned_report_all.pdf.

U.S. Geological Survey (USGS). 1896. Redondo Sheet Topographic Map. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Redondo_298753_1896_62500.jpg.

———. 1924. Compton Quadrangle Topographic Map. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Compton_289448_1924_24000.jpg.

———. 1964. Torrance Quadrangle Topographic Map. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Torrance_300911_1964_24000.jpg.

———. 1981. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Torrance_102041_1964_24000.jpg.

This page intentionally left blank

5.7 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts of the proposed West Carson TOD Specific Plan to hydrology and water quality conditions in the community of West Carson. Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface- and groundwater. Surface water includes lakes, rivers, streams, and creeks; groundwater is under the earth's surface. The analysis in this section is based in part on the following technical report:

- West Carson Storm Water Area Study, IBI Group, August 13, 2017

A Complete copy of this study is included in Appendix G of this Draft EIR.

5.7.1 Environmental Setting

5.7.1.1 RELEVANT PROGRAMS AND REGULATIONS

Federal

Clean Water Act

The federal Water Pollution Control Act (or Clean Water Act [CWA]) is the principal statute governing water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the US Environmental Protection Agency (EPA) authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to completely end all discharges and to restore, maintain, and preserve the integrity of the nation's waters. The CWA regulates direct and indirect discharge of pollutants; sets water quality standards for all contaminants in surface waters; and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges; requires states to establish site-specific water quality standards for navigable bodies of water; and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA funds the construction of sewage treatment plants and recognizes the need for planning to address nonpoint sources of pollution. Section 402 of the CWA requires a permit for all point source (a discernible, confined, and discrete conveyance, such as a pipe, ditch, or channel) discharges of any pollutant (except dredge or fill material) into waters of the United States.

National Pollutant Discharge Elimination System

Under the National Pollutant Discharge Elimination System (NPDES) program (under Section 402 of the CWA), all facilities that discharge pollutants from any point source into waters of the United States must have a NPDES permit. The term "pollutant" broadly applies to any type of industrial, municipal, and agricultural waste discharged into water. Point sources can be publicly owned treatment works (POTWs), industrial facilities, and urban runoff. (The NPDES program addresses certain agricultural activities, but the majority are considered nonpoint sources and are exempt from NPDES regulation.) Direct sources discharge directly

to receiving waters, and indirect sources discharge to POTWs, which in turn discharge to receiving waters. Under the national program, NPDES permits are issued only for direct, point-source discharges. The National Pretreatment Program addresses industrial and commercial indirect dischargers. Municipal sources are POTWs that receive primarily domestic sewage from residential and commercial customers. Specific NPDES program areas applicable to municipal sources are the National Pretreatment Program, the Municipal Sewage Sludge Program, Combined Sewer Overflows, and the Municipal Storm Water Program. Nonmunicipal sources include industrial and commercial facilities. Specific NPDES program areas applicable to these industrial/commercial sources are: Process Wastewater Discharges, Non-process Wastewater Discharges, and the Industrial Storm Water Program. NPDES issues two basic permit types: individual and general. Also, the EPA has recently focused on integrating the NPDES program further into watershed planning and permitting (USEPA 2012).

The NPDES has a variety of measures designed to minimize and reduce pollutant discharges. All counties with storm drain systems that serve a population of 100,000 or more, as well construction sites one acre or more in size, must file for and obtain an NPDES permit. Another measure for minimizing and reducing pollutant discharges to a publicly owned conveyance or system of conveyances (including roadways, catch basins, curbs, gutters, ditches, man-made channels, and storm drains designed or used for collecting and conveying stormwater) is the EPA's Storm Water Phase I Final Rule. The Phase I Final Rule requires an operator (such as a city) of a regulated municipal separate storm sewer system (MS4) to develop, implement, and enforce a program (e.g., best management practices [BMPs], ordinances, or other regulatory mechanisms) to reduce pollutants in postconstruction runoff to the County's storm drain system from new development and redevelopment projects that result in land disturbance greater than or equal to one acre. The MS4 Permit in effect for West Carson is Order No. R4-2012-0175 issued by the Los Angeles Regional Water Quality Control Board in 2012.

The County of Los Angeles Public Works Department enforces conditions of the MS4 NPDES permit on development and redevelopment projects in the County's jurisdiction.

State

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code §§ 13000 et seq.) is the basic water quality control law for California. Under this act, the State Water Resources Control Board (SWRCB) has ultimate control over state water rights and water quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The state is divided into nine regions related to water quality and quantity characteristics. The SWRCB, through its nine Regional Water Quality Control Boards, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems.

The Specific Plan area is in the jurisdiction of Los Angeles Regional Water Quality Control Board, Region 4, which encompasses the Los Angeles and Santa Monica Bay watersheds. The Basin Plan for Region 4 was adopted in 1995 and updated in 2011. This Basin Plan gives direction on the beneficial uses of the state

waters in Region 4, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards in the Basin Plan.

Construction General Permit Order No. 2009-0009-DWQ

Pursuant to the CWA, in 2001, the SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and 2012-0006-DWQ; NPDES No. CAS000002). Under this Statewide General Construction Activity permit, discharges of stormwater from construction sites with a disturbed area of one acre or more are required to either obtain individual NPDES permits for stormwater discharges or be covered by the General Permit. Coverage by the General Permit is accomplished by completing and filing a Notice of Intent with the SWRCB and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). Each applicant under the General Construction Activity Permit must ensure that a SWPPP is prepared prior to grading and is implemented during construction. The SWPPP must list BMPs implemented on the construction site to protect stormwater runoff and must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a monitoring plan if the site discharges directly to a water body listed on the state's 303(d) list of impaired waters.

Local

NPDES Permit No. CAS004001 (Municipal Separate Storm Sewer System Permit)

The project area is subject to the waste discharge requirements of the NPDES Permit No. CAS004001 and the Los Angeles County MS4 Permit (Order No. R4-2012-0175), as amended by Order WQ 2015-0075. The Los Angeles County Flood Control District, the County of Los Angeles, and 84 incorporated cities in Los Angeles County (except Long Beach) are permittees under the MS4 Permit. The permit covers approximately 3,100 square miles and serves a population of about 10 million. Permittees are required to comply with applicable water-quality-based effluent limitations, develop and implement procedures necessary to reduce the discharge of pollutants into the MS4s to the maximum extent practicable, and implement BMPs. The proposed project is required to comply with the Los Angeles County MS4 Permit and the County's stormwater management program.

Los Angeles County's MS4 permit also requires new development and redevelopment projects to retain onsite a specified volume of stormwater runoff from a design storm event. The County has adopted a low impact development (LID) ordinance and prepared a LID manual as a guideline for implementation of these requirements.

Los Angeles County Low Impact Development Standards Manual

The County prepared the 2014 Low Impact Development Standards Manual to comply with the requirements of the MS4 permit. The LID manual is an update and compilation of the following documents:

- Development Planning for Storm Water Management: A Manual for the Standard Urban Storm Water Mitigation Plan (SUSMP Manual, September 2002)

- Technical Manual for Stormwater Best Management Practices in the County of Los Angeles (2004 Design Manual, February 2004)
- Stormwater Best Management Practice Design and Maintenance Manual (2010 Design Manual, August 2010)
- Low Impact Development Standards Manual (2009 LID Manual, January 2009)

The LID manual addresses the following objectives and goals:

- Lessen the adverse impacts of stormwater runoff from development and urban runoff on natural drainage systems, receiving waters, and other water bodies.
- Minimize pollutant loadings from impervious surfaces by requiring development projects to incorporate properly designed, technically appropriate BMPs and other LID strategies.
- Minimize erosion and other hydrologic impacts on all projects located within natural drainage systems that have not been improved by requiring projects to incorporate properly designed, technically appropriate hydromodification control development principles and technologies.

The use of LID BMPs in project planning and design is intended to preserve a site's predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration, evapotranspiration, and runoff detention. LID BMPs try to offset these losses by introducing structural and non-structural design components that restore these water quality functions into the project's land plan.

5.7.1.2 EXISTING CONDITIONS

Regional Drainage

The project site is in the Dominguez Watershed, which spans 133 square miles in the southwestern Los Angeles Basin (MEC 2004; see Figure 5.7-1, *Dominguez Watershed*). The primary drainage channel in the watershed is Dominguez Channel, which extends for about 16 miles and discharges into San Pedro Bay. The Dominguez Channel passes about 0.9 mile northeast of the project site.

Local Surface Waters and Drainage

The 208th Street Drain Flood Control Channel forms much of the northern site boundary, continues eastward from the site, and discharges into the Dominguez Channel about 1.3 miles east of the project site. Storm drains conveying runoff from approximately the northern two-thirds of the project site are tributary to the 208th Street Drain Flood Control Channel. Storm drains in the south end of the site are part of a network of drains tributary to the Wilmington Drain Channel, which begins about 1.2 miles south of the site and continues south to Harbor Lake (LACDPW 2016).

Water Quality

Surface Water Quality

Water quality impairments listed on the CWA Section 303(d) List of Water Quality Limited Segments for receiving waters for the project site are identified below in Table 5.7-1.

Table 5.7-1 Pollutants in Receiving Water Bodies Listed on Section 303(d) List

Water Body	Segment	Pollutant	Total Maximum Daily Load (TMDL) Status
208th Street Channel	Entire	Coliform bacteria	Estimated completion 2007
		Copper	Estimated completion 2019
		Lead	Estimated completion 2019
Dominguez Channel	Below Vermont Avenue	Ammonia	Estimated completion 2019
		Benthic [channel bottom water and soil] community effects	Estimated completion 2019
		Benzo(a)anthracene *polyaromatic hydrocarbon; found in emissions from combustion of gasoline, diesel, and other hydrocarbons; suspected human carcinogen*	Estimated completion 2019
		Benzo(a)pyrene *Polyaromatic hydrocarbon; formed during incomplete combustion of organic matter; potent mutagen and carcinogen*	Estimated completion 2019
		Chlordane *highly toxic organochlorine insecticide; possible human carcinogen*	Estimated completion 2019
		Chrysene *aromatic hydrocarbon in coal tar; toxic*	Estimated completion 2019
		Coliform bacteria	Estimated completion 2019
		DDT (dichlorodiphenyltrichloroethane) *Organochlorine insecticide; toxic; endocrine disruptor; suspected human carcinogen*	Estimated completion 2019
		Dieldrin *Organochlorine insecticide; toxic*	Estimated completion 2019
		Lead	Estimated completion 2019
		Polychlorinated biphenyls (PCBs) *Organic chlorine compounds*	Estimated completion 2019
		Phenanthrene *polyaromatic hydrocarbon*	Estimated completion 2019
		Pyrene *polyaromatic hydrocarbon*	Estimated completion 2019
		Sediment toxicity	Estimated completion 2021
		Zinc	Estimated completion 2019
Los Angeles/ Long Beach Inner Harbor	Entire	Beach closures	Estimated completion 2004
		Benthic community effects	Estimated completion 2019
		Benzo(a)pyrene	Estimated completion 2021
		Chrysene	Estimated completion 2021
		Copper	Estimated completion 2019

Table 5.7-1 Pollutants in Receiving Water Bodies Listed on Section 303(d) List

Water Body	Segment	Pollutant	Total Maximum Daily Load (TMDL) Status
		DDT	Estimated completion 2019
		Polychlorinated biphenyls (PCBs)	Estimated completion 2019
		Sediment Toxicity	Estimated completion 2009
		Zinc	Estimated completion 2008
Wilmington Drain	Entire	Coliform bacteria	Estimated completion 2007
		Copper	Estimated completion 2019
		Lead	Estimated completion 2019
Machado Lake	Entire	Algae	Approved 2009
		Ammonia	Approved 2009
		ChemA[1]	Estimated completion 2019
		Chlordane	Estimated completion 2019
		DDT	Estimated completion 2019
		Dieldrin	Estimated completion 2019
		Eutrophic *Depletion of oxygen in water due to presence of excess nutrients*	Approved 2009
		Odor	Approved 2009
		PCBs	Estimated completion 2019
		Trash	Approved 2008

Sources: SWRCB 2016; NCBI 2016.
[1] ChemA refers to the sum of the chemicals aldrin, dieldrin. chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane (HCH; including lindane), endosulfan, and toxaphene, all of which are organochlorine insecticides.

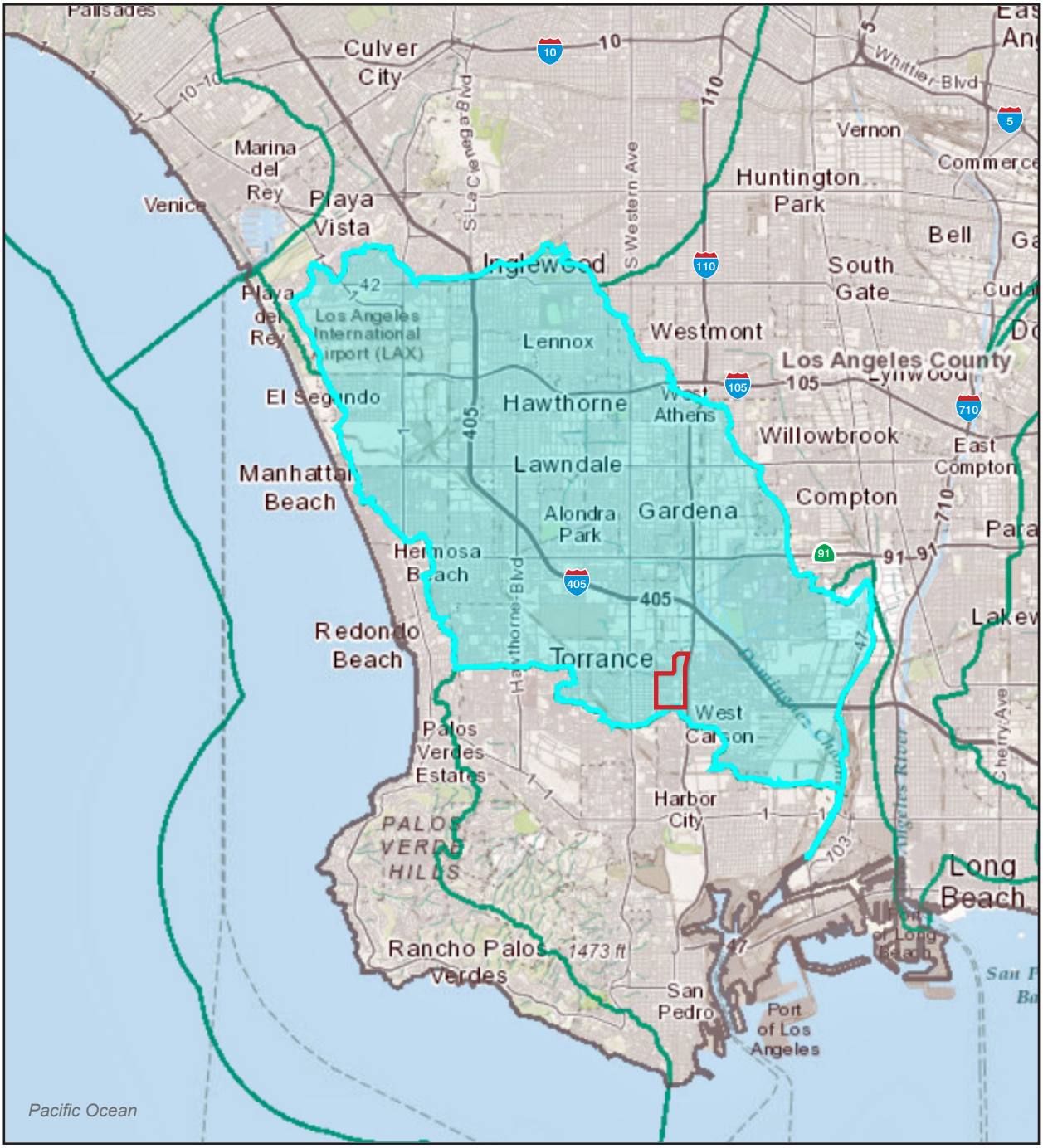
Groundwater Quality

The project site is over the West Coast Subbasin of the Coastal Plain of Los Angeles Groundwater Basin; the West Coast Subbasin spans about 143 square miles in the southwestern part of the Los Angeles Basin (CDFW 2016; see Figure 5.7-2, *West Coast Subbasin*).

Wellhead treatment is used at some wells in the West Coast Subbasin to remove volatile organic compound contaminants. Brackish groundwater—slightly salty due to seawater intrusion into the groundwater basin—is treated at two facilities. The Brewer Desalting Facility in Torrance has a capacity of 2.1 million gallons per day (mgd) capacity and is operated by the West Basin Municipal Water District. The Goldsworthy Desalter, also in Torrance, is operated by the Water Replenishment District of Southern California; an expansion of that facility to 5 mgd capacity is scheduled for completion in 2017 (WBMWD 2016).

The Del Amo Superfund Site is about 1,500 feet north of the project site. The site was used for manufacturing synthetic rubber by several manufacturers from 1943 until 1972. Contamination consisting of hydrocarbon solvents, unspecified aqueous solution, and unspecified solvent mixtures has affected groundwater. Contaminated soil from part of the site has been removed, and remediation via soil vapor extraction is underway (Corps 2015).

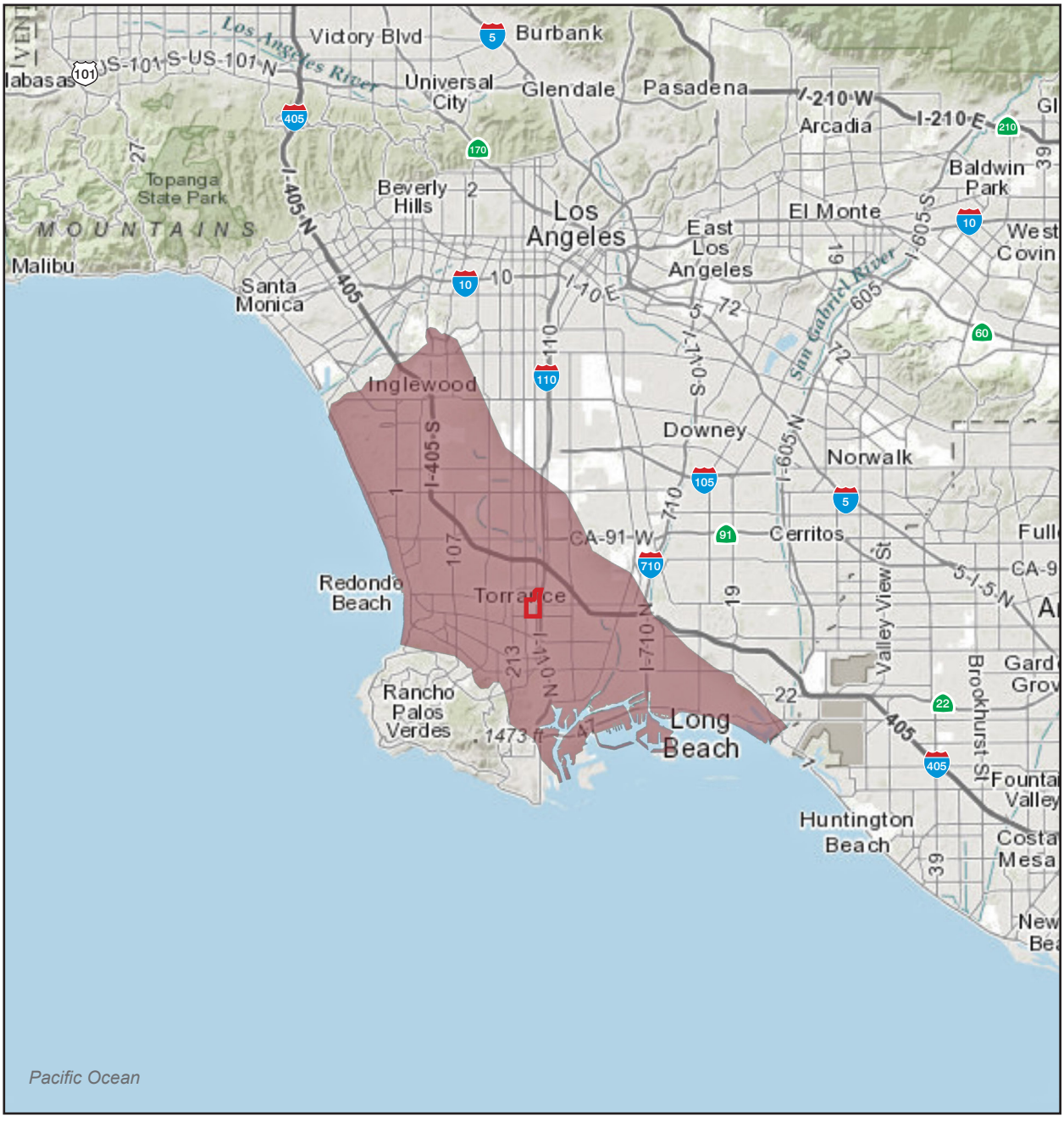
Figure 5.7-1 - Dominguez Watershed
5. Environmental Analysis



This page intentionally left blank.

Figure 5.7-2 - West Coast Subbasin

5. Environmental Analysis



Specific Plan Boundary

West Coast Subbasin

0 10

Scale (Miles)

Base Map Source: ESRI, 2017

This page intentionally left blank.

5.7.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

HYD-1 Violate any water quality standards or waste discharge requirements.

HYD-2 Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted.

HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site.

HYD-4 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

HYD-5 Add water features or create conditions in which standing water can accumulate that could increase habitat for mosquitoes and other vectors that transmit diseases such as the West Nile virus and result in increased pesticide use?

HYD-6 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

HYD-7 Generate construction or post-construction runoff that would violate applicable stormwater NPDES permits or otherwise significantly affect surface water or groundwater quality?

HYD-8 Conflict with the Los Angeles County Low Impact Development Ordinance (L.A. County Code, Title 12, Ch. 12.84 and Title 22, Ch. 22.52)?

HYD-9 Result in point or nonpoint source pollutant discharges into State Water Resources Control Board-designated Areas of Special Biological Significance?

HYD-10 Use onsite wastewater treatment systems in areas with known geological limitations (e.g. high groundwater) or in close proximity to surface water (including, but not limited to, streams, lakes, and drainage course)?

HYD-11 Otherwise substantially degrade water quality.

HYD-12 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

HYD-13 Place structures, which would impede or redirect flood flows, within a 100-year flood hazard area, floodway, or floodplain?

HYD-14 Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

HYD-15 Be subject to inundation by seiche, tsunami, or mudflow.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold HYD-5
- Threshold HYD-9
- Threshold HYD-10
- Threshold HYD-12
- Threshold HYD-13
- Threshold HYD-14
- Threshold HYD-15

These impacts will not be addressed in the following analysis.

5.7.3 Plans, Programs, and Policies

5.7.3.1 REGULATORY REQUIREMENTS

RR HYD-1 The project will be constructed in accordance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with the Construction and Land Disturbance Activities, Order No 2009-0009-DWQ, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ. Compliance requires filing a Notice of Intent (NOI), a risk assessment, a site map, a Storm Water Pollution Prevention Plan (SWPPP) and associated best management practices (BMPs), an annual fee, and a signed certification statement. Also, Los Angeles County requires preparation of an erosion and sediment control plan (ESCP) for projects that disturb more than one acre of land and implementation of BMPs to control erosion, debris, and construction-related pollutants.

RR HYD-2 The project will be constructed and operated in accordance with the Los Angeles County MS4 Permit (Order No. R4-2012-0175), as amended by Order WQ 2015-0075. The MS4 Permit requires new development and redevelopment projects to retain on-site a specified volume of stormwater runoff from a design storm event. The Low Impact Development Standards Manual provides the guidance on how new development and redevelopment projects can meet these on-site retention requirements through the use of stormwater quality control measures.

5.7.4 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.7-1: Development pursuant to the proposed project would be subject to the County's Low Impact Development (LID) Ordinance and would therefore minimize or reduce surface water flows into drainage systems in the watershed. [Thresholds HYD-4 and HYD-6 (part)]

Impact Analysis: Nearly the entire project site is built out with urban land uses; only three parcels totaling about 0.75 acre of the 318-acre Specific Plan area are vacant.

Each development or redevelopment project under the Specific Plan would be required to have site-specific hydrology and hydraulic studies to determine capacity of the existing storm drain systems and project impacts on such systems prior to approval by the Los Angeles County Department of Public Works. Each project would be required to comply with site-specific "allowable discharge rates," as identified by the Department of Public Works, that limit peak flow discharges compared to existing conditions, thus minimizing potential for flooding on- or off-site.

As required by regulatory requirement RR HYD-2, future projects in accordance with the Specific Plan must be constructed and operated in accordance with the Los Angeles County MS4 Permit (Order No. R4-2012-0175), as amended by Order WQ 2015-0075. The MS4 Permit requires new development and redevelopment projects to retain on-site a specified volume of stormwater runoff from a design storm event. The LID Standards Manual provides guidance on how new development and redevelopment projects can meet these on-site retention requirements through the use of stormwater quality control measures.

In addition, projects that are identified as Designated Projects are required to implement site design/LID and source control BMPs applicable to their specific Designated Project categories and treatment control BMPs where necessary. Designated projects include new industrial or commercial developments of 10,000 square feet or more; restaurants, gas stations, or parking lots 5,000 square feet or more; and projects creating or replacing 5,000 square feet or more of impervious surfaces. Selection of LID and additional treatment control BMPs is based on the pollutants of concern for the specific project site and the BMP's ability to effectively treat those pollutants.

The LID Plan must include the following information:

- Identification of whether the proposed project is a Designated Project or not. If the proposed project is a Designated Project, identification of the project category.
- Feasibility of infiltration, including a percolation report as part of a geotechnical report prepared by a geotechnical engineer.
- Source control measure(s) proposed to be implemented.

- Calculation of the stormwater quality design volume.
- Discussion on whether stormwater runoff harvest and use are feasible.
- Stormwater quality control measure(s) proposed to be implemented.
- Discussion of how the applicable water quality standards and total maximum daily loads will be addressed (off-site mitigation projects only).
- Proposed hydromodification controls and calculations (if necessary).
- Proposed maintenance plan (if necessary).

The LID Plan can be a section of or appendix to the hydrology report that must be submitted to the Los Angeles County Land Development Division; a section of or appendix to the grading report submitted to the Los Angeles County Building and Safety Division; or a separate plan.

Specific Plan buildout would not cause a substantial increase in stormwater runoff and would not result in flooding on- or off-site after implementation of regulatory requirement RR HYD-2, LID BMPs, and compliance with site-specific allowable discharge rates.

Level of Significance before Mitigation: Upon implementation of regulatory requirements RR HYD-2, Impact 5.7-1 would be less than significant.

Impact 5.7-2:	Development pursuant to the proposed project is not expected to substantially increase the amount of impervious surfaces on the site and therefore would not substantially reduce groundwater recharge. [Threshold HYD-2]

Impact Analysis: Only three parcels totaling approximately 0.75 acres are vacant in the Specific Plan area; the remaining project area is built out with urban land uses. Therefore, redevelopment in the Specific Plan area would not substantially increase the amount of impervious surfaces onsite. The amount of impervious surfaces would likely be similar at full buildout and thus is not expected to reduce groundwater recharge on- or off-site.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.7-2 would be less than significant.

Impact 5.7-3:	Construction and operation of projects in accordance with the Specific Plan would not adversely impact water quality and contribute pollutant sources to the stormwater drainage system. [Thresholds HYD-1, HYD-3, HYD-6 (part), HYD-7, HYD-8, and HYD-11]

Impact Analysis: Urban runoff resulting from storms or nuisance flows (runoff during dry periods) from development projects can carry pollutants to receiving waters. Runoff can contain pollutants such as oil, fertilizers, pesticides, trash, soil, and animal waste. This runoff can flow directly into local streams or lakes or into storm drains and released untreated into a local waterway and eventually the ocean. Untreated

stormwater runoff degrades water quality in surface waters and groundwater and can affect drinking water, human health, and plant and animal habitats. Additionally, increased runoff from urban surfaces can increase the intensity of flooding and erosion. Construction activities could also result in the degradation of water quality, releasing sediment, oil and greases, and other chemicals to nearby water bodies. Finally, site preparation and grading may result in the exposure of soils to erosion and could release sediment into off-site drainage systems.

Construction

Construction activities, including clearing, grading, and excavation, have the potential to impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Construction materials, such as solvents, paints, oils, and grease, may also present risks to surface water quality.

Construction projects under the Specific Plan must provide evidence that the development of projects disturbing one acre or more of soil comply with the most current General Construction Permit and associated local NPDES regulations to ensure that the potential for soil erosion is minimized. In accordance with the updated General Construction Permit (Order No. 2012-0006-DWQ) and regulatory requirement RR HYD-1, the following permit registration documents are to be submitted to the SWRCB prior to commencement of construction activities:

- Notice of Intent
- Risk Assessment (standard or site specific)
- Particle Size Analysis (if site-specific risk assessment is performed)
- Site Map
- Stormwater Pollution Prevention Plan
- Active Treatment System Design Documentation (if determined necessary)
- Annual Fee and Certification

Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the permit registration documents with the SWRCB, including preparation of a SWPPP describing the BMPs to be implemented during the project's construction activities. The SWPPP's construction BMPs shall address pollutant source reduction and provide measures/controls necessary to minimize potential pollutants. These include, but are not limited to: erosion controls, sediment controls, tracking controls, nonstorm water management, materials and waste management, and good housekeeping practices.

- **Erosion controls** cover and/or bind soil surface, to prevent soil particles from being detached and transported by water or wind; examples include mulch, geotextiles, mats, hydroseeding, earth dikes, and swales.

- **Sediment controls** filter out soil particles that have been detached and transported in water; examples include barriers such as straw bales, sandbags, fiber rolls, and gravel bag berms; desilting basins; and cleaning measures such as street sweeping.

- **Tracking controls** minimize the tracking of soil offsite by vehicles; examples include stabilized construction roadways and construction entrances/exits, and entrance/outlet tire washes.

- **Non-storm Water Management Controls** prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Examples include BMPs for specifying methods for: paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; and concrete curing and finishing.

- **Waste Management and Controls** include spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes. (CASQA 2003)

The SWPPP must be implemented at the project site and revised as necessary as administrative or physical conditions change. With the implementation of the SWPPP and BMPs pursuant to regulatory requirement RR HYD-1, impacts to water quality during construction activities would be less than significant.

Operations

Operations of projects developed under the Specific Plan could generate the same categories of pollutants as construction activities. For example, runoff from buildings and parking lots typically contain oils, grease, fuel, antifreeze, byproducts of combustion (such as lead, cadmium, nickel, and other metals), fertilizers, herbicides, pesticides, and other pollutants. Precipitation at the beginning of the rainy season may result in an initial stormwater runoff (first flush) with high pollutant concentrations.

Project applicants are required under regulatory requirement RR HYD-2 and the County's LID Standards Manual to submit an LID plan for review and approval by the Los Angeles County Department of Public Works and to implement the LID plan during project design and operations (see further discussion of LID plans under Impact 5.7-1).

Water quality impacts from operations of projects under the Specific Plan would be less than significant.

Level of Significance before Mitigation: Upon implementation of regulatory requirements RR HYD-1 and RR HYD-2, Impact 5.7-3 would be less than significant.

5.7.5 Cumulative Impacts

Surface Water: Drainage and Water Quality

The area considered for cumulative impacts to drainage and surface water quality is the Dominguez Watershed. Approximately 91 percent of the land area of the Dominguez Watershed is developed (MEC 2004). Thus, future cumulative projects in the watershed are more likely to be redevelopment projects than new developments on vacant land. These projects would create or replace impervious area and thus could affect the amount of runoff in the watershed. These projects would also generate pollutants that could contaminate stormwater. However, similar to the proposed project, future cumulative projects would be required to implement regulatory requirements RR HYD-1 and RR HYD-2, LID BMPs, and SWPPP BMPs

in accordance with the MS4 Permit and the Los Angeles County LID Standards Manual. Thus, cumulative impacts would be less than significant, and project impacts would not be cumulatively considerable.

Groundwater Recharge and Groundwater Quality

The area considered for cumulative impacts to groundwater recharge and groundwater quality is the West Coast Subbasin, which is mostly built out with urban land uses. Other projects in the subbasin are likely to be redevelopment projects that would create or replace impervious area and thus could affect the amount of groundwater recharge in the watershed. These other projects would also generate pollutants that could contaminate groundwater, and they would be required to implement LID BMPs and, where required, treatment control BMPs in accordance with the MS4 Permit and the Los Angeles County LID Standards Manual. Among the requirements of the LID Standards Manual are infiltration and/or retention of the stormwater design capacity volume. Compliance by other projects with the MS4 Permit and the LID Standards Manual would also minimize discharge of pollutants that could contaminate groundwater. Cumulative impacts would be less than significant, and project impacts would not be cumulatively considerable.

5.7.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements RR HYD-1 and RR HYD-2, the following impacts would be less than significant: 5.7-1, 5.7-2, and 5.7-3.

5.7.7 Mitigation Measures

No mitigation measures are required.

5.7.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.7.9 References

California Department of Fish and Wildlife (CDFW). 2016, November 9. "Groundwater Basins Layer." Biogeographic Information and Observation System (BIOS). https://www.wildlife.ca.gov/Data/BIOS.

California Stormwater Quality Association (CASQA). 2003, January. Stormwater Best Management Practice Handbook: Construction.

Federal Emergency Management Agency (FEMA). 2016, November 10. Flood Map Service Center. https://msc.fema.gov/portal.

Los Angeles County Department of Public Works (LACDPW). 2016, November 7. Los Angeles County Storm Drain System. http://dpw.lacounty.gov/fcd/stormdrain/index.cfm.

MEC Analytical Systems, Inc. 2004, April. Dominguez Watershed Management Master Plan. http://www.ladpw.org/wmd/watershed/dc/DCMP/docs/Section%202%20Background%20Information%20Report.pdf.

National Center for Biotechnology Information (NCBI). PubChem Compound Database. https://www.ncbi.nlm.nih.gov/pccompound.

Office of Emergency Services (OES). 2016, February 23. Dam Inundation. DVD.

State Water Resources Control Board (SWRCB). 2016, May 5. Impaired Water Bodies. http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2012.shtml.

US Army Corps of Engineers (Corps), Seattle District. 2015, September 30. Third Five-Year Review Report for Del Amo Superfund Site, Operable Unit #1 and #2, Los Angeles County, California. https://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/c8e1baac141d3acd88257ed8007093f5/$FILE/DelAmoOU1-2%20FYRSigned_report_all.pdf.

US Environmental Protection Agency (USEPA). 2012, September 26. Water Permitting 101. http://www.epa.gov/npdes/pubs/101pape.pdf.

West Basin Municipal Water District (WBMWD). 2016, June 30. 2015 Urban Water Management Plan. https://wuedata.water.ca.gov/public/uwmp_attachments/1460981070/HiRes.UrbanWaterPlanBook.6.30.16.pdf.

5.8 LAND USE AND PLANNING

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts to land use in the community of West Carson from implementation of the proposed West Carson TOD Specific Plan.

Land use impacts can be either direct or indirect. Direct impacts are those that result in land use incompatibilities; division of neighborhoods or communities; or interference with other land use plans, including habitat and wildlife conservation plans. This section focuses on direct land use impacts. Indirect impacts are secondary effects resulting from land use policy implementation, such as an increase in demand for public utilities or services, or increased traffic on roadways. Indirect impacts are addressed in other sections of this DEIR.

5.8.1 Environmental Setting

5.8.1.1 RELEVANT PROGRAMS AND REGULATIONS

Regional

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a council of governments representing Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. SCAG is the federally recognized metropolitan planning organization for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs.

The proposed project is considered a project of regionwide significance pursuant to the criteria in SCAG's Intergovernmental Review Procedures Handbook (November 1995) and Section 15206 of the California Environmental Quality Act (CEQA) Guidelines, because it requires an amendment to the County of Los Angeles 2035 General Plan, for which an EIR was prepared. Therefore, this section addresses the project's consistency with the applicable regional planning guidelines and policies.

Regional Transportation Plan/Sustainable Communities Strategy

The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted in November 2016 (SCAG 2016). Major themes in the 2016 RTP/SCS include: integrating strategies for land use and transportation; striving for sustainability; protecting and preserving existing transportation infrastructure; increasing capacity through improved systems management; providing more transportation choices; leveraging technology; responding to demographic and housing market changes; supporting commerce, economic growth and opportunity; promoting the links between public health, environmental protection, and economic opportunity; and incorporating the principles of social equity and environmental justice into the plan.

The SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency. The proposed project's consistency with the applicable RTP/SCS goals is analyzed in detail in Table 5.8-2, *2016-2040 RTP/SCS Consistency Analysis*.

Local

County of Los Angeles General Plan

The County of Los Angeles 2035 General Plan provides a policy framework for the future and guides growth and development in the County. The General Plan consists of a series of state-mandated and optional elements to direct the County's physical, social, and economic growth. Elements in the General Plan include: land use, mobility, air quality, conservation and natural resources, parks and recreation, noise, safety, public services and facilities, economic development, and housing.

- **Land Use Element**. The land use element designates land uses and provides strategies and planning tools to facilitate and guide future development and revitalization efforts.
- **Mobility Element.** The mobility element provides an overview of the transportation infrastructure and strategies for developing an efficient and multimodal transportation network. The highway plan and the bicycle master plan are components of the mobility element.
- **Air Quality Element.** The air quality element summarizes air quality issues and outlines the goals and policies that will improve air quality and reduce greenhouse gas emissions. The community climate action plan is a component of the air quality element.
- **Conservation and Natural Resources Element.** The conservation and natural resources element guides the long-term conservation of natural resources and preservation of available open space areas.
- **Parks and Recreation Element.** The parks and recreation element plans and provides for an integrated parks and recreation system that meets the needs of residents.
- **Noise Element.** The noise element reduces and limits the exposure of the general public to excessive noise levels. The noise element sets the goals and policy direction for the management of noise.
- **Safety Element.** The purpose of the safety element is to reduce the potential risk of death, injuries, and economic damage resulting from natural and man-made hazards.
- **Public Services and Facilities Element.** The public services and facilities element promotes the orderly and efficient planning of public services and facilities and infrastructure in conjunction with development and growth.

- **Economic Development Element.** The economic development element outlines economic development goals and provides strategies that contribute to economic well-being.

- **Housing Element.** The housing element analyzes and plans for existing and future housing needs. The housing element addresses the housing needs of all income levels and accommodates a diversity of housing types and special needs.

The policies in each of the elements that are relevant to the proposed project are listed in Table 5.8-1, *General Plan Consistency Analysis*, which analyzes the proposed project's consistency with these policies.

South Bay Planning Area

The General Plan identifies 11 planning areas and provides goals and objectives for all of the unincorporated areas in the County. The purpose of the Planning Areas Framework is to provide a mechanism for local communities to work with the County to develop plans that respond to their unique and diverse characters.

The community of West Carson is in the South Bay Planning Area and is specifically identified in the General Plan as an Opportunity Area for TOD redevelopment and infill, with significant portions of the project area designated as Industrial Flex District, Neighborhood Center, or Corridor.

5.8.1.2 EXISTING CONDITIONS

The West Carson TOD Specific Plan area encompasses approximately 319.3 acres with a variety of land uses. Central to the project area is the Harbor-UCLA Medical Center, which is the activity hub of the West Carson community. Most of the commercial development in the project area is adjacent to the campus along the north side of West Carson Street. Commercial land uses along this corridor mainly include low-density strip malls and auto-centric businesses—such as chain fast-food establishments, supermarkets, pharmacies, gas stations, and health-care-related offices. Vermont Avenue, which runs parallel to Interstate 110 (I-110) is also lined with smaller strip commercial centers, multifamily housing units, a mobile home park, and light industrial properties to the south. Industrial uses include warehousing, distribution and storage, and small equipment-manufacturing facilities.

Beyond the commercial core, residential development constitutes the northern and southern portions of the Specific Plan area, including two public elementary schools. There are approximately 1,822 residential units—82 percent single-family units and 18 percent multifamily units. Pockets of single-family residences, including a mobile home park, are located between Vermont Avenue and I-110. Most of the Specific Plan area is built out, and only three parcels are vacant in the project area. Existing land uses are illustrated on Figure 4-1, *Existing Land Uses*.

5.8.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

LU-1 Physically divide an established community.

LU-2 Be inconsistent with the applicable County plans for the subject property including, but not limited to, the General Plan, specific plan, local coastal plans, area plans, and community/neighborhood plans.

LU-3 Be inconsistent with the County zoning ordinance as applicable to the subject property.

LU-4 Conflict with Hillside Management Area Ordinance, Significant Ecological Areas Ordinance, or other applicable land use criteria.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold LU-1
- Threshold LU-3
- Threshold LU-4

These impacts will not be addressed in the following analysis.

5.8.3 Plans, Programs, and Policies

There are no applicable project design features or regulatory requirements related to land use and planning.

5.8.4 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable threshold is identified in brackets after the impact statement.

Impact 5.8-1: The West Carson TOD Specific Plan would not conflict with any applicable land use plans. [Threshold LU-2]

Impact Analysis: The proposed project is under the jurisdiction of the County of Los Angeles and SCAG and their land use plans and policies. The following analysis will determine the project's consistency with the goals and policies of the County of Los Angeles 2035 General Plan and SCAG's 2016-2040 RTP/SCS.

County of Los Angeles General Plan Consistency

A detailed summary of the proposed project's consistency with the applicable goals and policies of the various elements of the County's General Plan is provided in Table 5.8-1, *General Plan Consistency Analysis*.

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
Land Use Element	
Goal LU 1 A General Plan that serves as the constitution for development, and a Land Use Policy Map that implements the General Plan's Goals, Policies and Guiding Principles.	
Policy LU 1.10: Require the intensity, density, and uses allowed in a new specific plan to be determined using the General Plan, including the Land Use Policy Map and Land Use Legend. Policy LU 1.11: Require a General Plan amendment for any deviation from the intensities, densities, and uses allowed by the General Plan (to apply the appropriate designation from the General Plan Land Use Legend), unless allowances for flexibility are specified in the specific plan. Policy LU 1.12: Require development regulations and zoning for new specific plans to be consistent with their corresponding General Plan land use designation.	Consistent: The Specific Plan will be used in conjunction with the County of Los Angeles 2035 General Plan and Los Angeles County Code to provide more detailed design and development criteria for individual projects and public improvements in the Specific Plan area. The County's General Plan identifies the community of West Carson as a priority policy area for infill development and transit oriented development given its proximity to major transit and commercial corridors. In order to spur this type of development, the General Plan established the Transit Oriented District (TOD) Program, which provides guidance for the preparation of TOD specific plans, including the West Carson TOD Specific Plan. Therefore, the proposed project is consistent with the policy framework of the General Plan. The project proposes new zoning districts with deviations from the intensities, densities, and uses allowed by the General Plan. Therefore a General Plan amendment would be required. Upon approval of the project, the new zoning districts will be consistent with the General Plan.
Policy LU 1.13: Allow specific plans to include implementation procedures for flexibility, such as development phasing, and redistribution of intensities and uses, as appropriate.	Consistent: Chapter 7 of the Specific Plan includes implementation and financial strategies for realizing the goals of the Specific Plan and describes project review and administrative procedures required for amendments and/or modifications to the plan.
Goal LU 2 Community-based planning efforts that implement the General Plan and incorporate public input, and regional and community level collaboration.	
Policy LU 2.1: Ensure that all community-based plans are consistent with the General Plan.	Consistent: See response to Policy LU 1.10, above.
Policy LU 2.2: Ensure broad outreach, public participation, and opportunities for community input in community-based planning efforts. Policy LU 2.3: Consult with and ensure that applicable County departments, adjacent cities and other stakeholders are involved in community-based planning efforts. Policy LU 2.7: Set priorities for Planning Area-specific issues, including transportation, housing, open space, and public safety as part of community-based planning efforts.	Consistent: As part of the planning process for the West Carson TOD Specific Plan, County staff from the Department of Regional Planning facilitated community outreach events that helped shape the Specific Plan. The West Carson TOD Specific Plan Task Force was convened and consisted of Regional Planning staff, representatives from other County agencies (i.e., Department of Public Health, Parks and Recreation, Public Works, the Community Development Commission, the Arts Commission), and other key stakeholders, including the cities of Carson and Los Angeles and LA Metro. County staff also met and received input from a number of community groups. Two public workshops were held in November 2015 and February 2016 to solicit community input regarding the proposed project. The County also distributed a survey to developers in the County-South Bay-West Carson area to solicit information regarding the strength of the commercial and residential markets, potential redevelopment sites, and incentives that would better attract development in West Carson. Further, surveys were distributed to employees at the Harbor-UCLA Medical Center to collect information on employee commutes, housing options, and amenity/improvement suggestions for the project area.

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
	As a proposed TOD project, the Specific Plan focuses on allowing new housing and mixed-use development opportunities, introducing multimodal transportation improvements, creating a strong identity for the community, and allowing development flexibility.
Policy LU 2.8: Coordinate with the Los Angeles County Department of Public Works and other infrastructure providers to analyze and assess infrastructure improvements that are necessary for plan implementation.	Consistent: Section 5.15, *Utilities and Service Systems*, of the DEIR analyzes existing infrastructure systems in the project area and evaluates project impacts on including sewer, water, storm drain, and dry utilities. As part of the analysis, the Los Angeles County Department of Public Works and infrastructure service providers were contacted to identify existing deficiencies and potential project impacts.
Policy LU 2.10: Ensure consistency between land use policy and zoning by undergoing a comprehensive zoning consistency analysis that includes zoning map changes and Zoning Code amendments, as needed.	Consistent: The proposed Specific Plan would require Zoning Code amendments to adopt the new zoning districts illustrated in Figure 3-3, *Proposed Zoning*. Upon approval of the project, the Specific Plan would be consistent with the County's General Plan and County Code.
Goal LU 4 Infill development and redevelopment that strengthens and enhances communities.	
Policy LU 4.3: Encourage transit-oriented development in urban and suburban areas with the appropriate residential density along transit corridors and within station areas.	Consistent: The project is a TOD specific plan for West Carson. Therefore, all aspects of the proposed Specific Plan are related to improving connections within the community, increasing access to transit, and establishing pedestrian and bicycle networks that link residential neighborhoods, schools, retail corridors, and employment centers. The Specific Plan would also encourage a diverse mix of housing choices within a half mile of the Carson Metro Station.
Policy LU 4.4: Encourage mixed use development along major commercial corridors in urban and suburban areas.	Consistent: Major commercial corridors in the Specific Plan include Carson Street and Vermont Avenue near the Harbor-UCLA Medical Center. The project proposes Mixed Use Development Districts 1 and 2 that are intended to promote a mix of commercial, office, and residential, with an emphasis on neighborhood and medical campus serving retail, restaurant, and services uses.
Goal LU 5 Vibrant, livable and healthy communities with a mix of land uses, services and amenities.	
Policy LU 5.1: Encourage a mix of residential land use designations and development regulations that accommodate various densities, building types and styles.	Consistent: The Specific Plan includes four different residential districts and two mixed-use development districts that would accommodate a variety of housing densities, building types, and styles.
Policy LU 5.2: Encourage a diversity of commercial and retail services, and public facilities at various scales to meet regional and local needs.	Consistent: The Specific Plan proposes two mixed-use development districts to promote commercial and office uses, with an emphasis on neighborhood and medical campus serving retail, restaurant, and services uses near the Harbor-UCLA Medical Center campus. Neighborhood Commercial and Unlimited Commercial Districts are also proposed along Torrance Boulevard and 223rd Street, respectively, to provide commercial services to the local community.
Policy LU 5.3: Support a mix of land uses that promote bicycling and walking, and reduce VMTs.	Consistent: The Specific Plan is designed to develop West Carson into a transit-oriented community. Therefore, the proposed zoning districts include a mix of commercial, retail, residential, and office uses along major transit corridors. Additionally, pedestrian and bicycle infrastructure and amenities are proposed in the Specific Plan to encourage multimodal transportation and access to transit.

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
Policy LU 5.4: Encourage community-serving uses, such as early care and education facilities, grocery stores, farmers markets, restaurants, and banks to locate near employment centers.	Consistent: The major employment center in the project area is the Harbor-UCLA Medical Center campus. The Specific Plan proposed mixed-use development districts along Carson Street and Vermont Avenue, which bound the medical center on two sides. The mixed-use districts would allow development of child care services, grocery stores, markets, restaurants, and banks.
Policy LU 5.10: Encourage employment opportunities and housing to be developed in proximity to one another.	Consistent: The proposed employment-generating districts in the Specific Plan (i.e., Neighborhood Commercial, Unlimited Commercial, Industrial Flex, and Mixed Use Development 1 and 2) are surrounded by existing residential neighborhoods, as illustrated on Figure 3-3, *Proposed Zoning Districts*).
Goal LU 9 Land use patterns and community infrastructure that promote health and wellness.	
Policy LU 9.1: Promote community health for all neighborhoods. Policy LU 9.2: Encourage patterns of development that promote physical activity.	Consistent: One of the goals of the Specific Plan is to improve connections within the community and increase access to transit. Specific Plan policies that would help achieve this goal include implementing complete street designs that encourage multimodal transportation; implementing streetscape features such as street lighting, landscaping, and wayfinding to create safer and more attractive bike/pedestrian connections; improving and prioritizing access to local bus stops and the Carson Metro Station; and establishing pedestrian and bicycle networks to link the Carson Metro Station, Harbor-UCLA Medical Center, residential neighborhoods, local schools, and retail corridors. The proposed bicycle, pedestrian, and transit infrastructure improvements and amenities would promote overall health and wellness in the community.
Goal LU 10 Well-designed and healthy places that support a diversity of built environments.	
Policy LU 10.1: Encourage community outreach and stakeholder agency input early and often in the design of projects.	Consistent: See response to Policy LU 2.2, above.
Policy LU 10.3: Consider the built environment of the surrounding area and location in the design and scale of new or remodeled buildings, architectural styles, and reflect appropriate features such as massing, materials, color, detailing or ornament. Policy LU 10.4: Promote environmentally-sensitive and sustainable design. Policy LU 10.5: Encourage the use of distinctive landscaping, signage and other features to define the unique character of districts, neighborhoods or communities, and engender community identity, pride and community interaction.	Consistent: Section 3.6 of the Specific Plan includes urban design guidelines. These guidelines and standards are intended to provide a comprehensive approach to high quality design with respect to the existing built environment. These standards and guidelines are not meant to dictate a particular architectural style in the area, but to foster innovative design features and site-appropriate architecture that is constructed with quality materials and complemented by landscape, open spaces, and connectivity between uses. The Specific Plan details site design (e.g., building placement and orientation, site access, parking, service and loading areas); building design (e.g., frontages, corner treatments, building entrances, scale/mass, articulation, facades, lighting, colors and materials, roofs, and green/sustainable building design); and public realm design (e.g., landscaping, screening, outdoor lighting, signage).
Policy LU 10.6: Encourage pedestrian activity through the following: o Designing the main entrance of buildings to front the street; o Incorporating landscaping features; o Limiting masonry walls and parking lots along commercial corridors and other public spaces; o Incorporating street furniture, signage, and public events and activities; and o Using wayfinding strategies to highlight community points of interest.	Consistent: See response to Policy LU 10.3, above. The Specific Plan includes design guidelines and standards related to building frontage, landscaping features, screening (with fences, walls, and gates), building material, and public realm design. These design guidelines are intended to create a transit-oriented community that encourages pedestrian and bike activity.

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
Policy LU 10.7: Promote public spaces, such as plazas that enhance the pedestrian environment, and, where appropriate, continuity along commercial corridors with active transportation activities. Policy LU 10.10: Promote architecturally distinctive buildings and focal points at prominent locations, such as major commercial intersections and near transit stations or open spaces. Policy LU 10.11: Facilitate the use of streets as public space for activities that promote civic engagement, such as farmers markets, parades, etc.	Consistent: As detailed in Section 3.6.5 of the Specific Plan, special design guidelines are provided for transit station areas and gateways due to their prominent locations and sensitive relationship to the public realm. Key opportunity areas exist along Vermont Avenue, Carson Street, Torrance Boulevard, 223rd Street, and Normandie Avenue. The proposed guidelines encourage orienting and designing buildings at key gateways and intersections to emphasize the corner as a node of activity and architectural prominence (e.g., entry plazas on corner sites, tower elements, fountains and water features, prominent landscape features, unique building lighting, public art installations).
Goal LU 11 Development that utilize sustainable design techniques.	
Policy LU 11.1: Encourage new development to employ sustainable energy practices, such as utilizing passive solar techniques and/or active solar technologies. Policy LU 11.2: Support the design of developments that provide substantial tree canopy cover, and utilize light-colored paving materials and energy-efficient roofing materials to reduce the urban heat island effect. Policy LU 11.3: Encourage development to optimize the solar orientation of buildings to maximize passive and active solar design techniques.	Consistent: Goal 7 of the Specific Plan is to maximize the use of sustainable development practices. Policies to achieve the goal include encouraging resource-efficient building techniques, materials, and other principles of green building design in new construction, renovation, and landscaping; incorporating "green" building practices into the planning, design, construction, and operation of County-owned facilities; and promoting tree planting in the public and private realm for shade, cooling, and aesthetic benefits. Green/sustainable building design is also outlined in the Specific Plan's Urban Design Guidelines, which encourage: o Energy efficient, nontoxic, and recycled-content building materials o Natural lighting to reduce cooling and heating requirements o Use of materials that reduce the transfer of heat into or out of buildings (e.g., cool roofs) o Photovoltaic panels, cool roofs, grey water systems in buildings and parking garages o Zero emission and electric vehicle charging stations
Mobility Element	
Goal M 1 Street designs that incorporate the needs of all users.	
Policy M 1.1: Provide for the accommodation of all users, including pedestrians, motorists, bicyclists, equestrians, users of public transit, seniors, children, and persons with disabilities when requiring or planning for new, or retrofitting existing, transportation corridors/networks whenever appropriate and feasible. Policy M 1.2: Ensure that streets are safe for sensitive users, such as seniors and children.	Consistent: The Specific Plan proposed several infrastructure improvements that would support transit-oriented development within the Specific Plan area. A key component of the Specific Plan is the transformation of the current circulation network, which largely supports vehicular travel, to a network that places a higher priority on the principles of complete streets and multimodal design. This includes infrastructure improvements and amenities that encourage connectivity and safety for pedestrians, bicyclists, public transit users, and people of all age groups.
Goal M 2 Interconnected and safe bicycle- and pedestrian-friendly streets, sidewalks, paths and trails that promote active transportation and transit use.	
Policy M 2.1: Provide transportation corridors/networks that accommodate pedestrians, equestrians and bicyclists, and reduce motor vehicle accidents through a context-sensitive process that addresses the unique characteristics of urban, suburban, and rural communities whenever appropriate and feasible.	Consistent: See response to Policy M 1.1, above. Goal 2 of the Mobility and Public Realm Strategy of the Specific Plan is to provide safe, connected, and accessible bikeway and pedestrian networks. This includes establishing and maintaining attractive and functional sidewalks that maximize accessibility and designing bicycle and pedestrian infrastructure in accordance with federal,

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
	state, and local design standards, including ADA accessibility standards. A multipurpose trail is also proposed along the 208th Street flood control drain to provide additional multimodal transportation opportunities.
Policy M 2.2: Accommodate pedestrians and bicyclists, and reduce motor vehicle accidents by implementing the following street designs, whenever appropriate and feasible: o Lane width reductions to 10 or 11 feet in low speed environments with a low volume of heavy vehicles. o Wider lanes may still be required for lanes adjacent to the curb, and where buses and trucks are expected. o Low-speed designs. o Access management practices developed through a community-driven process. o Back in angle parking at locations that have available roadway width and bike lanes, where appropriate.	Consistent: The Specific Plan focuses on laying the foundation for a more-unified network of streets that promotes multimodal circulation as well as the safe and efficient movement of motorized and nonmotorized transportation. Proposed streetscape improvements along the major roadways, such as Vermont Avenue, Carson Street, 220th Street, 223rd Street, and Normandie Avenue, include Class II (striped buffer) and III (designated sharrows) bicycle facilities, on-street parking, street trees, lighting, reduced vehicular travel lane widths, landscaped medians, wayfinding signage for transit stops, and multiuse paths. In addition, the Specific Plan recommends improvements to the existing 220th Street pedestrian bridge over the I-110 freeway.
Policy M 2.3: Accommodate pedestrians and bicyclists, and reduce motor vehicle accidents by implementing the following intersection designs, whenever appropriate and feasible: o Right angle intersections that reduce intersection skew. o Smaller corner radii to reduce crossing distances and slow turning vehicles. o Traffic calming measures, such as bulb-outs, sharrows, medians, roundabouts, and narrowing or reducing the number of lanes (road diets) on streets. o Crossings at all legs of an intersection. o Shorter crossing distances for pedestrians. o Right-turn channelization islands. Sharper angles of slip lanes may also be utilized. o Signal progression at speeds that support the target speed of the corridor. o Pedestrian push buttons when pedestrian signals are not automatically recalled. o Walk interval on recall for short crossings. o Left-turn phasing. o Prohibit right turn on red. o Signs to remind drivers to yield to pedestrians.	Consistent: See response to Policy M 2.2, above.
Policy M 2.4: Ensure a comfortable walking environment for pedestrians by implementing the following, whenever appropriate and feasible: o Designs that limit dead-end streets and dead-end sidewalks. o Adequate lighting on pedestrian paths, particularly around building entrances and exits, and transit stops. o Designs for curb ramps, which are pedestrian friendly and compliant with the American Disability Act (ADA). o Perpendicular curb ramps at locations where it is feasible. o Pedestrian walking speed based on the latest standard for signal timing. Slower speeds should be used when appropriate (i.e., near senior housing, rehabilitation centers, etc.) o Approved devices to extend the pedestrian clearance times at signalized intersections. o Accessible Pedestrian Signals (APS) at signalized	Consistent: Although sidewalks exist along major streets within the Specific Plan area, most are narrow in width and do not support high levels of pedestrian activity. The Specific Plan proposes a sidewalk hierarchy to facilitate the most appropriate allocation of space that encourages people to walk as a part of their daily routine. The sidewalk hierarchy is composed of three levels: Level 1, Level 2, and Level 3, with varying allocation of space amongst the frontage zone, pedestrian zone, furniture zone, and curb zone. Figure 4.15, *Pedestrian Network Map*, in the Specific Plan shows the suggested locations of various sidewalk levels. Level 1 sidewalks would be widest, with a minimum width of 10 feet to support the highest pedestrian volumes and to accommodate street furniture and bike/transit amenities. Level 2 sidewalks would be slightly narrower than Level 1 sidewalks with a minimum width of seven feet. Level 3 sidewalks would be narrowest and be located along low-density residential streets. They should have a minimum width of five feet in

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
intersections. o Pedestrian crossings at signalized intersections without double or triple left or right turn lanes. o Pedestrian signal heads, countdown pedestrian heads, pedestrian phasing and leading pedestrian intervals at signalized intersections. o Exclusive pedestrian phases (pedestrian scrambles) where turning volume conflicts with very high pedestrian volumes. o Advance stop lines at signalized intersections. o Pedestrian Hybrid Beacons. o Medians or crossing islands to divide long crossings. o High visibility crosswalks. o Pedestrian signage. o Advanced yield lines for uncontrolled crosswalks. o Rectangular Rapid Flashing Beacon or other similar approved technology at locations of high pedestrian traffic. o Safe and convenient crossing locations at transit stations and transit stops located at safe intersections	order to meet ADA standards and be accessible for all pedestrians. Figure 4.16, *Pedestrian Crossing Map*, in the Specific Plan illustrates the location of existing and proposed pedestrian crosswalks. The Specific Plan proposes installation of crosswalks, midblocks, curb ramps, pedestrian crossing signs, signals, and more to ensure pedestrian safety and accessibility throughout the project area.
Policy M 2.5: Ensure a comfortable bicycling environment by implementing the following, whenever appropriate and feasible: o Bicycle signal heads at intersections. o Bicycle signal detection at all signalized intersections. o Wayfinding signage. o Road diet techniques, such as lane narrowing, lane removal, and parking removal/restriction. o Appropriate lighting on all bikeways, including those in rural areas. o Designs, or other similar features, such as: shoulder bikeways, cycle tracks, contra flow bike lanes, shared use paths, buffered bike lanes, raised bike lanes, and bicycle boulevards.	Consistent: See responses to Policies M 2.2 and M 2.4, above.
Policy M 2.7: Require sidewalks, trails and bikeways to accommodate the existing and projected volume of pedestrian, equestrian and bicycle activity, considering both the paved width and the unobstructed width available for walking.	Consistent: See responses to Policies M 2.2 and M 2.4, above.
Policy M 2.8: Connect trails and pedestrian and bicycle paths to schools, public transportation, major employment centers, shopping centers, government buildings, residential neighborhoods, and other destinations.	Consistent: The Mobility and Public Realm Strategy of the Specific Plan sets the framework for improving the trails, pedestrian, and bicycle network in a safe, connected, and accessible manner. One key policy is to establish a connected pedestrian and bicycle network that links the Carson Metro Station, Harbor-UCLA Medical Center, residential neighborhoods, local schools, and retail corridors in the project area. The Specific Plan also identifies opportunities to create dedicated bicycle lanes and pedestrian sidewalks that connect the neighborhood and commercial areas to community services.
Policy M 2.9: Encourage the planting of trees along streets and other forms of landscaping to enliven streetscapes by blending natural features with built features. Policy M 2.10: Encourage the provision of amenities, such as benches, shelters, secure bicycle storage, and street furniture, and comfortable, safe waiting areas near transit stops.	Consistent: Streetscape design is included in the Specific Plan and recommends planting street trees and installing seating, street lights, public art, and furnishings. Street trees would serve a variety of urban design functions such as acting as a pedestrian buffer, accentuating spaces, creating a sense of enclosure, improving air quality, reducing heat island effect by providing shade and filtered light, and improving visual aesthetics along a corridor.

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
	The Specific Plan recommends installing pedestrian seating and benches where feasible in compliance with ADA standards to minimize obstruction to pedestrian pathways. And furnishings such as benches, seat walls, and bike racks are recommended to encourage pedestrian and bicycle activity by providing a sense of comfort and convenience.
Goal M 4 An efficient multimodal transportation system that serves the needs of all residents.	
Policy M 4.1: Expand transportation options that reduce automobile dependence.	Consistent: See responses to Policies M 1.1, M 2.2, and M 2.4, above.
Policy M 4.2: Expand shuttle services to connect major transit centers to community points of interest. Policy M 4.3: Maintain transit services within the unincorporated areas that are affordable, timely, cost-effective, and responsive to growth patterns and community input. Policy M 4.4: Ensure expanded mobility and increase transit access for underserved transit users, such as seniors, students, low income households, and persons with disabilities.	Consistent: A key component of the Specific Plan is to improve accessibility to the existing transit system and the overall transit experience. The Specific Plan area encompasses a rich transit network serviced by Metro, Torrance Transit, and Gardena Municipal. The Specific Plan recommends coordinating operating schedules between local feeder bus routes and the Metro Silver Line to improve overall transit service. Schedule improvements such as minimizing passenger wait times between transfers can help improve efficiency and encourage more transit ridership. Recommended improvements include improvements to bus route arrival/departure times and frequency, and the relocation of bus stops to better connect to the Metro Silver Line. The Specific Plan also proposes to relocate the existing I-110/Carson Street transit stop, which services the Metro Silver Line, from underneath the Carson Street overpass to a new location along I-110. Relocating the stop would enhance visibility of waiting transit patrons and improve safety. The Specific Plan also recommends freeway underpass and overpass enhancements that would improve the safety and comfort for visitors and residents of West Carson. Enhancements may include public art installations, bus shelters, improved plaza areas, benches, lighting, transit information and signage, and bicycle racks.
Policy M 4.7: Maintain a minimum LOS D, where feasible; however, allow LOS below D on a case by case basis in order to further other General Plan goals and policies, such as those related to environmental protection, infill development, and active transportation.	Consistent: Mitigation measures were developed for all of the significantly impacted intersections. The measures were found to fully mitigate all impacts during both peak hours of the project buildout scenario for fourteen of the seventeen intersections; impacts at the three remaining intersections are to be significant and unavoidable. Upon implementation of the respective intersection mitigation measures, all freeway off-ramps are expected to provide sufficient queue storage such that 85% of the queue capacity is not exceeded by estimated queues. Since the proposed project consists of infill development and near transit, exceedance of LOS D is allowed.
Policy M 4.9: Ensure the participation of all potentially affected communities in the transportation planning and decision-making process.	Consistent: See response to Policy LU 2.2, above.
Policy M 4.10: Support the linkage of regional and community-level transportation systems, including multimodal networks. Policy M 4.11: Improve the efficiency of the public transportation system with bus lanes, signal prioritization, and connections to the larger regional transportation network.	Consistent: See responses to Policies M 1.1, M 2.2, M 2.4, and M 4.2, above.

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
Goal M 5 Land use planning and transportation management that facilitates the use of transit.	
Policy M 5.1: Facilitate transit-oriented land uses and pedestrian-oriented design, particularly in the first-last mile connections to transit, to encourage transit ridership.	Consistent: Consistent with Metro 's First and Last Mile Strategic Plan, the Specific Plan identifies pathway arterials and pathway collectors that serve the Carson Metro Station, existing Metro bus stops, and key destinations in the community. The Specific Plan recommends street designs, such as separated active transportation lanes, signal and crossing improvements, wayfinding, and plug-in components (i.e., bike shares) along pathway arterials as well as improved intersection and midblock crossings along pathway collectors. These enhancements would encourage more multimodal transportation in the project area.
Goal M 6 The safe and efficient movement of goods.	
Policy M 6.4: Minimize noise and other impacts of goods movement, truck traffic, deliveries, and staging in residential and mixed-use neighborhoods.	Consistent: As detailed in Section 5.9, *Noise*, project-generated operational noise, such as traffic and stationary-source noise, would not exceed local noise standards and impacts would be less than significant.
Goal M 7 Transportation networks that minimizes negative impacts to the environment and communities.	
Policy M 7.1: Minimize roadway runoff through the use of permeable surface materials, and other low impact designs, wherever feasible.	Consistent: The Specific Plan states that permeable surfaces should be incorporated wherever feasible to allow infiltration of rainfall, reduce the total volume of runoff, replenish groundwater, and improve water quality. The County of Los Angeles Department of Public Works' "Green Infrastructure Guidelines" provides a list of applications for permeable surfaces. Proper vegetation and landscaping elements—such as vegetated swales, vegetated buffers, planter/tree box filters, bioretention, and filter strips—can also reduce pollutant concentrations in stormwater runoff and reduce runoff rates.
Policy M 7.3: Encourage the use of sustainable transportation facilities and infrastructure technologies, such as liquid and compressed natural gas, and hydrogen gas stations, ITS, and electric car plug-in ports.	Consistent: The Specific Plan encourages new development to incorporate zero emission and electric vehicle charging stations in parking areas.
Air Quality Element	
Goal AQ 1 Protection from exposure to harmful air pollutants.	
Policy AQ 1.1: Minimize health risks to people from industrial toxic or hazardous air pollutant emissions, with an emphasis on local hot spots, such as existing point sources affecting immediate sensitive receptors.	Consistent: Buildout of the West Carson TOD Specific Plan would result in approximately 51,955 average daily trips, which would be an increase of approximately 29,488 total daily vehicle trips over existing conditions. Distributing the total daily vehicle trips within the Specific Plan area and only during peak hours would result in smaller traffic volumes at the various intersections. Thus, implementation of the Specific Plan would not produce the volume of traffic required to generate a carbon monoxide (CO) hotspot. Therefore, implementation of the proposed project would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the planning area, and impacts would be less than significant.
Policy AQ 1.2: Encourage the use of low or no volatile organic compound (VOC) emitting materials. Policy AQ 1.3: Reduce particulate inorganic and biological emissions from construction, grading, excavation, and demolition to the maximum extent feasible.	Consistent: As analyzed in Section 5.2, *Air Quality*, buildout of the proposed project would result in potentially significant impacts due to the exceedance of South Coast Air Quality Management District's (SCAQMD) construction and operational regional significance thresholds and exposure of sensitive receptors to substantial pollutant concentrations. Regulatory Requirements AIR-1 through AIR-4, Project Design Features AIR-1 through AIR-8, and Mitigation Measures AQ-1 through AQ-5 would reduce the project's regional construction-related and operational-phase criteria air pollutants to

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
	the extent feasible. These requirements and measures include utilizing construction equipment that meets the US Environmental Protection Agency Tier 4 emissions standards; implementation of a fugitive dust control plan to reduce fine and coarse particulate matter emissions; and adhering to California Green Building Standards Code and California Building Energy and Efficiency Standards for new building construction.
Goal AQ 2 The reduction of air pollution and mobile source emissions through coordinated land use, transportation and air quality planning.	
Policy AQ 2.1: Encourage the application of design and other appropriate measures when siting sensitive uses, such as residences, schools, senior centers, daycare centers, medical facilities, or parks with active recreational facilities within proximity to major sources of air pollution, such as freeways.	Consistent: As shown on Figure 4-1, *Existing Land Uses*, there are currently existing sensitive uses (i.e., single and multifamily residences) along Interstate 110 (I-110) within the Specific Plan area, particularly in the northern portion. The proposed land use plan would maintain the single-family designation in the northern area as West Carson Residential 1 Zone. Therefore, development in accordance with the project would expose these sensitive uses to major sources of air pollution generated by vehicular traffic on I-110. However, Regulatory Requirements (RR) AIR-3 through RR AIR-4 would minimize criteria air pollutant emissions from construction equipment exhaust and fugitive dust through compliance with California Air Resources Board (CARB) and South Coast Air Quality Management District rules. Mitigation Measures AQ-1 and AQ-2 would reduce the proposed project's regional construction emissions and therefore also reduce the project's localized construction-related criteria air pollutant emissions to the extent feasible.
Goal AQ 3 Implementation of plans and programs to address the impacts of climate change.	
Policy AQ 3.1: Facilitate the implementation and maintenance of the Community Climate Action Plan to ensure that the County reaches its climate change and greenhouse gas emission reduction goals. Policy AQ 3.4: Participate in local, regional and state programs to reduce greenhouse gas emissions.	Consistent: The County adopted a Community Climate Action Plan (CCAP) on October 6, 2015. A consistency analysis of the proposed project to the applicable measures in the CCAP is shown in Table 5.5-8 of Section 5.5, *Greenhouse Gas Emissions*. As identified in the table, the proposed project would be consistent with the measures in the CCAP. Therefore, the proposed project would not conflict with the CCAP and impacts are considered less than significant. Additionally, other applicable plans adopted for the purpose of reducing GHG emissions include the CARB's Scoping Plan and SCAG's 2016-2040 RTP/SCS. A consistency analysis in Section 5.5, *Greenhouse Gas Emissions,* concludes the proposed project would be consistent with the goals and policies in those plans.
Policy AQ 3.5: Encourage energy conservation in new development and municipal operations. Policy AQ 3.6: Support rooftop solar facilities on new and existing buildings.	Consistent: See response to Policy LU 11.1, above.
Conservation and Natural Resources Element	
Goal C/NR 5 Protected and useable local surface water resources.	
Policy C/NR 5.1: Support the LID philosophy, which seeks to plan and design public and private development with hydrologic sensitivity, including limits to straightening and channelizing natural flow paths, removal of vegetative cover, compaction of soils, and distribution of naturalistic BMPs at regional,	Consistent: The Specific Plan references the Los Angeles County Department of Public Works' "Green Infrastructure Guidelines," which guide new construction and reconstruction of road and flood projects. The goal of the guidelines is to incorporate sustainable practices into the design, construction, and operation of the department's

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
neighborhood, and parcel-level scales. Policy C/NR 5.2: Require compliance by all County departments with adopted Municipal Separate Storm Sewer System (MS4), General Construction, and point source NPDES permits. Policy C/NR 5.6: Minimize point and non-point source water pollution.	infrastructure. The guidelines provide low-impact development (LID) design options to consider during planning or designing of road and flood projects intended to manage stormwater runoff. Additionally, compliance with National Pollutant Discharge Elimination System regulations related to storm drain runoff from construction sites shall be required by all future projects in accordance with the Specific Plan. Further, Section 5.7, *Hydrology and Water Quality*, of the DEIR concludes that the proposed project's impacts on existing hydrologic conditions and water quality are less than significant with implementation of applicable regulatory requirements.
Goal C/NR 14 Protected historic, cultural, and paleontological resources.	
Policy C/NR 14.1: Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.	Consistent: As detailed in Section 5.3, *Cultural Resources*, development of the proposed project could adversely impact historic, archaeological, and paleontological resources. However, Mitigation Measures CUL-1 through CUL-3 would require future project applicants/developers to conduct intensive-level historical evaluations and retain qualified archaeologists and paleontologists for construction monitoring. Implementation of these measures would mitigate impacts of new development to the greatest extent feasible.
Policy C/NR 14.4: Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).	Consistent: In accordance with Senate Bill 18 and Assembly Bill 52, the County contacted the Native American Heritage Commission (NAHC) and inquired into the presence/absence of sacred or religious sites in the vicinity of the project area. The NAHC responded that there are no sacred lands within the project area or a half-mile radius and provided a list of AB 52–specific Native American tribes with traditional lands or cultural places within the boundaries of the proposed project. As detailed in Section 5.14, *Tribal Cultural Resources*, these tribes were contacted by the County and notified of the proposed project.
Policy C/NR 14.6: Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.	Consistent: Mitigation Measures CUL-2 and CUL-3 would ensure that if any archaeological or paleontological resources are found during construction activities, the qualified archaeologist or paleontologist would halt all work activities, evaluate the resource, and determine its significance. If, at any time, evidence of human remains of Native American origin is uncovered, the County Coroner and Native American Heritage Commission would be contacted and the "most likely descendent" would be identified.
Parks and Recreation Element	
Goal P/R 1 Enhanced active and passive park and recreation opportunities for all users.	
Policy P/R 1.1: Provide opportunities for public participation in designing and planning parks and recreation programs. Policy P/R 1.2: Provide additional active and passive recreation opportunities based on a community's setting, and recreational needs and preferences.	Consistent: There is almost no vacant, publicly owned land available to develop new parks in the Specific Plan area. However, the Specific Plan identifies new pocket park opportunities by converting cul-de-sacs, partially covering a drainage channel, and reclaiming property that will no longer be needed by Harbor-UCLA Medical Center (see Figure 3-5, *New Park Opportunities*). The pocket parks can provide shelters, transit signage, bike parking/sharing, benches and tables, play structures, shade trees, entry monument/public art, and enhanced crosswalks.

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
Policy P/R 1.6: Improve existing parks with needed amenities and address deficiencies identified through the park facility inventories. Policy P/R 1.7: Ensure adequate staffing, funding, and other resources to maintain satisfactory service levels at all County parks and recreational facilities. Policy P/R 1.8: Enhance existing parks to offer balanced passive and active recreation opportunities through more efficient use of space and the addition of new amenities. Policy P/R 1.10: Ensure a balance of passive and recreational activities in the development of new park facilities.	Consistent: See response to Policy P/R 1.1 above. As analyzed in Section 5.12, *Recreation*, Specific Plan buildout would require dedication of approximately 15.0 acres of parkland and/or payment of in-lieu fees based on the County's parkland standard for multifamily units. Future developers of multifamily residential developments in the Specific Plan area would be required to provide the appropriate amount of parkland based on the proposed development size or pay in-lieu fees that would go towards funding County acquisition of local park land or rehabilitation of existing recreational facilities. Additionally, the proposed Specific Plan acknowledges the community's park needs and deficiencies. Figure 3-5, *New Park Opportunities*, identifies potential locations for the creation of pocket parks by converting cul-de-sacs, partially covering a drainage channel, and ultimately reclaiming property that would no longer be needed by Harbor-UCLA Medical Center. Each of these pocket parks has the potential for passive and active recreation.
Goal P/R 3 Acquisition and development of additional parkland.	
Policy P/R 3.1: Acquire and develop local and regional parkland to meet the following County goals: 4 acres of local parkland per 1,000 residents in the unincorporated areas and 6 acres of regional parkland per 1,000 residents of the total population of Los Angeles County. Policy P/R 3.3: Provide additional parks in communities with insufficient local parkland as identified through the gap analysis. Policy P/R 3.8: Site new parks near schools, libraries, senior centers and other community facilities where possible.	Consistent: See responses to Policies P/R 1.1 and P/R 1.6, above.
Goal P/R 4 Improved accessibility and connectivity to a comprehensive trail system including rivers, greenways, and community linkages.	
Policy P/R 4.1: Create multi-use trails to accommodate all users. Policy P/R 4.2: Develop staging areas and trail heads at strategic locations to accommodate multi-use trail users. Policy P/R 4.6: Create new multi-use trails that link community destinations including parks, schools and libraries.	Consistent: A multipurpose trail is proposed along the 208th Street flood control drain to encourage active transportation. The trail also connects to the larger regional bikeway network, which includes existing Class I bicycle facility along the Dominguez Channel.
Noise Element	
Goal N 1 The reduction of excessive noise impacts.	
Policy N 1.1: Utilize land uses to buffer noise-sensitive uses from sources of adverse noise impacts. Policy N 1.2: Reduce exposure to noise impacts by promoting land use compatibility. Policy N 1.3: Minimize impacts to noise-sensitive land uses by ensuring adequate site design, acoustical construction, and use of barriers, berms, or additional engineering controls through Best Available Technologies (BAT).	Consistent: Buildout of the proposed project would generate short-term construction noise and long-term operational noises. As analyzed in Section 5.9, *Noise*, long-term operational noises, such as traffic and stationary source noises would not exceed local noise standards and impacts would be less than significant. However, short-term construction noise from individual development projects associated with the Specific Plan would temporarily increase the ambient noise environment in the vicinity of each development project, potentially affecting existing and future sensitive uses in the vicinity. Because these construction activities may occur near noise-sensitive receptors, because noise levels may exceed the County Code's maximum acceptable noise level limits at sensitive receptors,

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
	and because noise disturbances may occur for prolonged periods of time (depending on the project type), construction noise impacts associated with implementation of the proposed project require mitigation to minimize construction noise impacts. Mitigation Measures N-1 through N-3 reduce construction noise and vibration impacts to the extent feasible.
Policy N 1.4: Enhance and promote noise abatement programs in an effort to maintain acceptable levels of noise as defined by the Los Angeles County Exterior Noise Standards and other applicable noise standards.	Consistent: As detailed above, buildout of the Specific Plan would not result in long-term operational noise impacts but would require mitigation (Mitigation Measures N-1 through N-3) to reduce short-term construction and vibration noise impacts.
Policy N 1.5: Ensure compliance with the jurisdictions of State Noise Insulation Standards (Title 24, California Code of Regulations and Chapter 35 of the Uniform Building Code), such as noise insulation of new multifamily dwellings constructed within the 60 dB (CNEL or Ldn) noise exposure contours.	Consistent: All new residential developments would be required to comply with State Noise Insulation Standards to properly insulate noise for new multifamily dwelling units. This would be confirmed during the County's plan check process.
Policy N 1.6: Ensure cumulative impacts related to noise do not exceed health-based safety margins. Policy N 1.7: Utilize traffic management and noise suppression techniques to minimize noise from traffic and transportation systems.	Consistent: See response to Policy N 1.1, above.
Policy N 1.9: Require construction of suitable noise attenuation barriers on noise sensitive uses that would be exposed to exterior noise levels of 65 dBA CNEL and above, when unavoidable impacts are identified.	Consistent: Short-term construction noise would be potentially significant. Therefore, Mitigation Measures N-1 and N-2 are required to minimize impacts to the extent feasible. Mitigation Measure N-1 requires construction to occur within the specified days and hours and to comply with maximum noise levels for mobile equipment per Los Angeles County Code Section 12.08.430. Mitigation Measure N-2 requires applicants for individual development projects within 500 feet of noise-sensitive receptors to conduct a project-level construction noise analysis to evaluate potential impacts on sensitive receptors. If impacts are identified, best management practices including, but not limited to, the following shall be implemented: – Install temporary sound barriers for construction activities immediately adjacent to occupied noise-sensitive structures. – Restrict haul routes and construction-related traffic to the least noise-sensitive times of the day. – Reduce non-essential idling of construction equipment to no more than five minutes. – Ensure that all construction equipment is monitored and properly maintained in accordance with the manufacturer's recommendations to minimize noise. – Fit all construction equipment with properly-operating mufflers, air intake silencers, and engine shrouds, no less effective than as originally equipped by the manufacturer, to minimize noise emissions. – If construction equipment is equipped with back-up alarm shut offs, switch off back-up alarms and replace with human spotters, as feasible. – Stationary equipment (such as generators and air compressors) and equipment maintenance and staging areas shall be located as far from existing noise-sensitive land uses, as feasible.

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
	– To the extent feasible, use acoustic enclosures, shields, or shrouds for stationary equipment such as compressors and pumps. – Shut off generators when generators are not needed. – Coordinate deliveries to reduce the potential of trucks waiting to unload and idling for long periods of time. – Grade surface irregularities on construction sites to prevent potholes from causing vehicular noise. – Minimize the use of impact devices such as jackhammers, pavement breakers, and hoe rams. Where possible, use concrete crushers or pavement saws rather than hoe rams for tasks such as concrete or asphalt demolition and removal.
Policy N 1.11: Maximize buffer distances and design and orient sensitive receptor structures (hospitals, residential, etc.) to prevent noise and vibration transfer from commercial/light industrial uses.	Consistent: Mitigation Measure N-2 requires applicants for individual development projects within 500 feet of noise-sensitive receptors to conduct a project-level construction noise analysis to evaluate potential impacts on sensitive receptors. If impacts are identified, implementation of best management practices listed above would be required and verified by County staff. Project-generated long-term stationary noise was determined to be less than significant.
Safety Element	
Goal S 4 Effective County emergency response management capabilities.	
Policy S 4.5: Ensure that there are adequate resources, such as sheriff and fire services, for emergency response.	Consistent: As analyzed in Section 5.11, *Public Services,* buildout of the Specific Plan would increase demand on fire and sheriff services. The Los Angeles County Fire Department (LACoFD) has already determined a need for an additional fire station on the west side of the City of Carson to meet the existing demand for fire services. LACoFD and the City of Carson have been working together to identify funding sources to purchase land and construct the needed fire station. Development of the proposed project would introduce an increase in property and sales tax in the project area and would contribute towards the funding required to construct a new fire station. Mitigation is provided to ensure the additional LACoFD fire station is built and operating before substantial new development in accordance with the Specific Plan is also developed. Police services provided by the Los Angeles County Sheriff's Department (LASD) would not be adversely impacts by buildout of the Specific Plan. The Carson Station would benefit from adding one additional 56-hour patrol unit to the existing unincorporated patrol areas to meet the increase in demand for calls for service. This would be funded through State Proposition 172 public safety funds, which are financed by a 0.5-cent State sales tax.
Public Services and Facilities Element	
Goal PS/F 1 A coordinated, reliable, and equitable network of public facilities that preserves resources, ensures public health and safety, and keeps pace with planned development.	
Policy PS/F 1.2: Ensure that adequate services and facilities are provided in conjunction with development through phasing or other mechanisms. Policy PS/F 1.4: Ensure the adequate maintenance of infrastructure.	Consistent: The Specific Plan and Section 5.15, *Utilities and Service Systems*, of the DEIR identify existing infrastructure conditions for water, wastewater, storm drains, and dry utilities and required infrastructure improvements to accommodate buildout of the Specific Plan. Sewer and water main improvements required for the project are illustrated on Figures 5.15-2, *Anticipated Sewer Upgrades*, and 5.15-4, *Anticipated Water Main Upgrades*.

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
Policy PS/F 1.5: Focus infrastructure investment, maintenance and expansion efforts where the General Plan encourages development.	The Specific Plan also details a number of grant, loan, and value-capture funding mechanisms that could finance the infrastructure and community benefits identified in the Specific Plan. These include local tax increment and special assessment districts, business improvement districts, landscape and lighting districts, development impact fees, revenue bonds, and general obligation bonds. Regional and state sources of funds include the Affordable Housing and Sustainable Communities Program, Caltrans Active Transportation Program, and Surface Transportation Block Grant Program.
Goal PS/F 4 Reliable sewer and urban runoff conveyance treatment systems.	
Policy PS/F 4.1: Encourage the planning and continued development of efficient countywide sewer conveyance treatment systems. Policy PS/F 4.2: Support capital improvement plans to improve aging and deficient wastewater systems, particularly in areas where the General Plan encourages development, such as TODs.	Consistent: See response to Policy PS/F 1.2, above.
Goal PS/F 5 Adequate disposal capacity and minimal waste and pollution.	
Policy PS/F 5.2: Ensure adequate disposal capacity by providing for environmentally sound and technically feasible development of solid waste management facilities, such as landfills and transfer/processing facilities.	Consistent: Buildout of the proposed project would generate approximately 37,284 more pounds per day (or about 18.6 tons per day) of solid waste than existing conditions. The two landfills and one transformation facility serving West Carson have residual capacity of over 13,000 tons per day (see Table 5.15-6). Thus, there is sufficient solid waste disposal and transformation capacity in the region for project-generated solid waste, and impacts would be less than significant.
Economic Development Element	
Goal ED 1 An economic base and fiscal structures that attract and retain valuable industries and businesses.	
Policy ED 1.1: Encourage a diverse mix of industries and services in each Planning Area.	Consistent: See responses to Policies LU 4.3 and LU 4.4, above.
Policy ED 1.4: Encourage the expansion and retention of targeted industries and other growth economic sectors, such as the entertainment industry, aerospace industry, agriculture, transportation/logistics, healthcare, biomed/biotech, hospitality and tourism.	Consistent: Central to the project area is the Harbor-UCLA Medical Center, which is the activity hub of the West Carson community. Most of the existing commercial development in the project area is adjacent to the campus along the north side of Carson Street. The proposed mixed-use development districts along Carson Street and Vermont Avenue would contribute to the expansion and growth of complementary land uses near the medical center. Overall, the Specific Plan supports the health and biotechnology industries with logical support and new funding tools and preserves employment-rich land uses in industrial flex zones.
Goal ED 2 Land use practices and regulations that foster economic development and growth.	
Policy ED 2.5: Encourage employment opportunities to be located in proximity to housing.	Consistent: The Specific Plan preserves employment-rich land uses in industrial flex zones while allowing for new residential where appropriate. The mixed-use development districts near Harbor-UCLA Medical Center campus would also allow a variety of housing types.
Policy ED 2.6: Encourage community-serving uses, such as child care centers and personal services, to be located in proximity to employment centers.	Consistent: See response to Policy LU 5.4, above.
Policy ED 2.7: Incentivize economic development and growth along existing transportation corridors and in urbanized areas.	Consistent: The Economic Development Strategy of the Specific Plan provides economic analysis, a financing strategy, and policy recommendations to realize the full potential of the County's investments in the Harbor-UCLA Medical Center campus and Metro's

Table 5.8-1 General Plan Consistency Analysis

Applicable General Plan Goals and Policies	Project Consistency Analysis
	investments in the Carson Metro Station. The Specific Plan also encourages the redevelopment and expansion of the Harbor-UCLA Medical Center campus, extension of the Metro Silver Line and station relocation, and introduction of mixed-use development along major corridors in the project area.

SCAG 2016-2040 RTP/SCS Consistency

Table 5.8-2 provides an assessment of the proposed project's relationship to pertinent 2016-2040 SCAG RTP/SCS goals.

Table 5.8-2 SCAG 2016-2040 RTP/SCS Goals Consistency Analysis

RTP/SCS Goal	Project Consistency Analysis
RTP/SCS G1: Align the plan investments and policies with improving regional economic development and competitiveness.	Consistent: The proposed Specific Plan would enhance the community of West Carson by leveraging the community's assets, connecting uses and activities, and attracting future investments. As a TOD specific plan, the proposed project includes zoning districts for higher density housing and mixed uses surrounding existing major commercial corridors, employment-generating uses (i.e., Harbor-UCLA Medical Center campus), and civic activity nodes. The Specific Plan provides a framework for future growth in West Carson that would nurture the emerging biomedical cluster; increase walking, bicycling, and transit ridership; reduce vehicle miles traveled; facilitate compact mixed-use development; and increase economic activity.
RTP/SCS G2: Maximize mobility and accessibility for all people and goods in the region.	Consistent: A major component of the Specific Plan is to develop West Carson into a transit oriented community, with concentrated residential, commercial, and mixed-use development served by high quality transit. Thus, goals and policies from the Mobility and Public Realm Strategy of the Specific Plan include providing a comprehensive circulation system that improves accessibility to transit, connections within the community, and the safe and efficient movement of all users of the roadway; provides safe, connected, and accessible bikeway and pedestrian networks; provides attractive mobility corridors that promote livability and sustainability; and promotes the efficient use of parking resources.
RTP/SCS G3: Ensure travel safety and reliability for all people and goods in the region.	Consistent: See response to RTP/SCS G2, above. The proposed project encourages implementing complete-street designs and roadway improvements that allow for easier, safer, and more efficient multimodal transportation. The project would also establish a connected pedestrian and bicycle network that links the Carson Metro Station, Harbor-UCLA Medical Center, residential neighborhoods, local schools, and retail corridors. Much of the recommended infrastructure improvements are related to creating safer and more accessible networks for motorists, pedestrians, bicyclists, and transit users.
RTP/SCS G4: Preserve and ensure a sustainable regional transportation system.	Consistent: See responses to RTP/SCS G2 and G3, above.

Table 5.8-2 SCAG 2016-2040 RTP/SCS Goals Consistency Analysis

RTP/SCS Goal	Project Consistency Analysis
RTP/SCS G5: Maximize the productivity of our transportation system.	Consistent: See responses to RTP/SCS G2 and G3, above. The recommended multimodal improvements along the Specific Plan's street network would encourage pedestrian, bicyclist, and transit activity and help maximize the productivity of the transportation system.
RTP/SCS G6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking).	Consistent: The Specific Plan proposes mixed-use and higher-density development along and adjacent to major commercial and transit corridors to lay the foundation for a more livable and sustainable corridor that works to improve air quality, traffic congestion, and mobility. The Specific Plan introduces wider sidewalks, landscaping, street trees, reduced on-street parking, striped buffers between existing bicycle facilities and vehicular traffic, and a multiuse pathway to support active modes of transportation. Overall, the Specific Plan substantially enhances the active transportation network in the project area.
RTP/SCS G7: Actively encourage and create incentives for energy efficiency, where possible.	Consistent: Goal 7 of the Specific Plan is to maximize the use of sustainable development practices. Policies to achieve the goal include encouraging resource-efficient building techniques, materials, and other principles of green building design in new construction, renovation, and landscaping; incorporating "green" building practices into the planning, design, construction, and operation of County-owned facilities; and promoting tree planting in the public and private realm for shade, cooling, and aesthetic benefits. Green/sustainable building design is also outlined in the Specific Plan's Urban Design Guidelines and encourages: o Energy efficient, nontoxic, and recycled-content building materials o Natural lighting to reduce cooling and heating requirements o Use of materials that reduce the transfer of heat into or out of buildings (e.g., cool roofs) o Photovoltaic panels, cool roofs, grey water systems in buildings and parking garages o Zero emission and electric vehicle charging stations
RTP/SCS G8: Encourage land use and growth patterns that facilitate transit and non-motorized transportation.	Consistent: See responses to RTP/SCS G2, G3, and G6, above.
RTP/SCS G9: Maximize the security of our transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	Consistent: Improvements along the transportation network, including landscaping, street lights, and street furnishings (e.g., wayfinding signage, transit signs, shelters, bicycle racks, and bus benches) not only improve the aesthetic appeal of the street frontages but enhance the perception of public safety for pedestrians, bicyclists, and transit users. Implementation of additional pedestrian crosswalks, pedestrian safety islands, curb extensions, curb ramps, and pedestrian signage as recommended in the Specific Plan would also enhance security, safety, and accessibility for pedestrians.

Source: SCAG 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy.

The analysis concludes that the proposed project would be consistent with the applicable RTP/SCS goals. Therefore, implementation of the proposed project would not result in significant land use impacts related to relevant RTP/SCS goals.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.8-1 would be less than significant.

5.8.5 Cumulative Impacts

Implementation of the proposed project in conjunction with other cumulative development in accordance with the County's general plan could cause countywide land use and planning impacts. However, upon adoption of the West Carson TOD Specific Plan, the proposed project would be consistent with applicable plans, goals, policies, and regulations of the County General Plan, County Code, and SCAG's RTP/SCS, as detailed above. As with future development in accordance with the proposed project, cumulative development projects in accordance with the County's General Plan would be subject to compliance with the regional and local plans reviewed in this section. Therefore, implementation of cumulative development projects would not combine with the proposed project to result in cumulatively considerable land use impacts.

5.8.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impacts would be less than significant: 5.8-1.

5.8.7 Mitigation Measures

No mitigation measures are required.

5.8.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.8.9 References

Southern California Association of Governments (SCAG). 2016, April. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life. http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

5. Environmental Analysis
LAND USE AND PLANNING

This page intentionally left blank.

5.9 NOISE

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the West Carson TOD Specific Plan to result in noise impacts in the project area. This section discusses the fundamentals of sound; examines federal, state, and local noise guidelines, policies, and standards; reviews noise levels at existing receptor locations; and evaluates potential noise impacts associated with the West Carson TOD Specific Plan project; and provides mitigation to reduce noise impacts at sensitive residential locations. This evaluation uses procedures and methodologies as specified by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA).

5.9.1 Environmental Setting

In addition to the following subsections on noise and vibration fundamentals, existing regulations, and pertinent technical standards, Appendix H of this DEIR provides supplementary, project-specific background information; construction effects calculation worksheets; and project-generated traffic operations noise modeling results.

5.9.1.1 TECHNICAL TERMINOLOGY

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness." The following are brief definitions of terminology used in this chapter:

- **Sound.** A vibratory disturbance that, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise**. Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Hertz (Hz)**. A unit of frequency of change in state or cycle in a sound wave. The nearly universal usage is one (complete) cycle in one second. The unit "Hertz," named after the German physicist Heinrich Hertz (1857–1894), replaces the previous "cycles per second" nomenclature.

- **Decibel (dB)**. A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals (20 μPa).
- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the United States, the standard reference velocity is 1 microinch per second ($1x10^{-6}$ in/sec).
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}), or Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level that, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single

numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum), and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."
- **Day-Night Level (L_{dn} or DNL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10 PM to 7 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring during the period from 7 PM to 10 PM and 10 dB added to the A-weighted sound levels occurring during the period from 10 PM to 7 AM. For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

5.9.1.2 FUNDAMENTALS OF SOUND / NOISE

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves. Sound is described in terms of loudness or amplitude (measured in dB), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration or time variations (measured in seconds or minutes).

Sound Amplitude

The range of pressures that causes airborne vibrations (i.e., sound) is quite large and would be cumbersome to measure lineally. Therefore, noise is measured on a logarithmic scale, which has a more manageable range of numbers, and a decibel (dB) is the standard unit for measuring sound pressure amplitude.[1] All noise levels in this study—reported in terms of dB—are relative to the industry-standard reference sound pressure of 20 micropascals.

[1] The commonly held threshold of audibility is 20 micropascals, and the threshold of pain is around 200 million micropascals, a ratio of one to 10 million. By converting these pressures to a logarithmic scale (i.e., decibels), the range becomes a more convenient 0 dB to 140 dB.

On a logarithmic scale, an increase of 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. 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. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound. These relationships are summarized in Table 5.9-1.

Table 5.9-1 Noise Perceptibility

± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies and Hansen 2009.

Sound Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The term "A-weighted" refers to a filtering of the noise signal in a manner corresponding to the way the human ear perceives the intensities of different frequencies of sound. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise.

Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 5.9-2 shows typical noise levels from noise sources.

Table 5.9-2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans 2009.

Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Temporal Effects of Sound

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Like most other forms of traveling energy, sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is conservative and is appropriate for noise generated by onsite operations from stationary equipment/activities at a project site. This approach is commonly used for construction equipment noise evaluations. For more detailed assessments, if ground-level absorptive vegetation or other "soft site" conditions are considered, the distance attenuation (drop-off) rate would be increased by 1.5 dB per distance doubling; for a total of 7.5 dB per propagation distance doubling.

If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by 4.5 dB for each doubling of distance.

Psychological and 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. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for hearing protection regulations in the workplace. When the noise level reaches 120 dBA, an unpleasant "tickling" sensation occurs in the human ear; even with short-term exposure. This is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation becomes painful, and this is called the threshold of pain. A sound level of 160 to 165 dBA will result in dizziness or loss of equilibrium. In community environments, the ambient or background noise problem is widespread, though generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance.

Loud noise can be annoying and it can have negative health effects (USEPA 1978). The effects of noise on people fall into three general categories:

- Subjective effects, i.e., annoyance, nuisance, dissatisfaction.
- Interference with activities such as speech, sleep, learning.
- Physiological effects such as startling and hearing loss (temporary and permanent).

In most cases, environmental noise produces effects in the first two categories only. However, unprotected workers in some industrial work settings may experience noise effects in the last category.

5.9.1.3 FUNDAMENTALS OF VIBRATION

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers.

Like noise, vibration is transmitted in waves, but through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt rather than heard. Vibration can be either natural as in the form of earthquakes, volcanic eruptions, sea waves, landslides, or man-made as from explosions, the action of heavy machinery or heavy vehicles such as trains. Both natural and man-made vibration may be continuous such as from operating machinery, or transient as from an explosion. As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized in three ways: displacement, velocity, and acceleration.

Vibration Amplitude

Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is the velocity, and the rate of change of the speed is the acceleration. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal, and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, and RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). However, vibration is often presented and discussed in dB units in order to compress the range of numbers. In this study, PPV and RMS velocities are in in/sec, and vibration levels are in dB relative to 1 microinch per second (abbreviated as VdB). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Man-made vibration problems are therefore usually confined to relatively short distances from the source (500 to 600 feet or less).

Vibration Frequency

Vibrations also vary in frequency, and this affects perception. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz. Traffic vibrations exhibit a similar range of frequencies; however, buses often generate frequencies around 3 Hz at high vehicle speeds due to their suspension systems. It is less common, but possible, to measure traffic frequencies above 30 Hz.

Vibration Propagation

The way in which vibration is transmitted through the earth is called propagation. Propagation of groundborne vibrations is complicated and difficult to predict because of the endless variations in the soil and rock through which waves travel. There are three main types of vibration propagation: surface, compression and shear waves. Surface waves, or Raleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. Compression waves, or P-waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. Shear waves, or S-waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or side-to-side and perpendicular to the direction of propagation. As vibration waves propagate from a source, the energy is spread over an ever-increasing area so that the energy level striking a given point decreases with distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

Physical and Human Responses to Vibration

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 5.9-3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 5.9-3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Caltrans 2004.

Human response to ground vibration has been correlated best with the velocity of the ground, typically expressed in terms of the vibration decibel or VdB.[2] The US Federal Transit Administration (FTA) has developed rational vibration limits that can be used to evaluate human annoyance to groundborne vibration. These criteria are primarily based on experience with rapid transit and commuter rail systems (FTA 2008). Railroad and transit operations are potential sources of substantial ground vibration depending on distance, the type and the speed of trains, and the type of track. Trains generate substantial vibration due to their engines, steel wheels, heavy loads, and wheel-rail interactions.

Construction Vibration

Similarly, construction operations generally include a wide range of activities that can generate groundborne vibration, which varies in intensity. In general, blasting and demolition as well as pile driving and vibratory compaction equipment generate the highest vibrations. Because of the impulsive nature of such activities, PPV is used to measure and assess groundborne vibration and assess the potential of vibration to induce structural damage and annoyance for humans. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at up to 200 feet. Heavy trucks can also generate groundborne vibrations, which can vary, depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, differential settlement of pavement, all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration from normal traffic flows on streets and freeways with smooth pavement conditions (Caltrans 2004).

[2] The reference velocity is 1 x 10^{-6} in/sec RMS, which equals 0 VdB, and 1 in/sec equals 120 VdB.

5.9.1.4 RELEVANT PROGRAMS AND REGULATIONS

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

Federal Standards

U.S. Environmental Protection Agency

In addition to FHWA standards (primarily with respect to vehicle-induced noise effects), the U.S. Environmental Protection Agency (EPA) has identified the relationship between noise levels and human response. The EPA Office of Noise Abatement and Control was originally established to coordinate federal noise-control activities. The office issued the Federal Noise Control Act of 1972, which set programs and guidelines to identify and address the effects of noise on public health and welfare, and the environment. Although the primary responsibility of regulating noise was transferred to state and local governments in 1982, the EPA provided guidelines for noise levels that would be considered safe for community exposure without the risk of adverse health or welfare effects.

The EPA found that to prevent hearing loss over the lifetime of a receptor, the yearly average L_{eq} should not exceed 70 dBA. Interference with activity and annoyance will not occur if exterior levels are maintained at an L_{eq} of 55 dBA and interior levels at or below 45 dBA. While these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community.

The EPA also set 55 dBA L_{dn} as the basic goal for exterior residential noise intrusion. However, other federal agencies, in consideration of their own program requirements and goals, as well as difficulty of actually achieving a goal of 55 dBA L_{dn}, have settled on the 65 dBA L_{dn} level as their standard. At 65 dBA L_{dn}, activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

U.S. Occupational Health and Safety Administration

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the EPA. Such limitations would apply to the operation of construction equipment and could also apply to any proposed industrial land uses. Noise exposure of this type is dependent on work conditions and is addressed through a given facility's Health and Safety Plan, as required under OSHA, and is therefore not addressed further in this analysis.

U.S. Department of Housing and Urban Development

The U.S. Department of Housing and Urban Development (HUD) has set a goal of 65 dBA L_{dn} as a desirable maximum exterior standard for residential units developed under HUD funding. (This level is also generally accepted within the State of California.) While HUD does not specify acceptable interior noise levels, standard construction of residential dwellings constructed under Title 24 standards typically provides

in excess of 20 dBA of attenuation with the windows closed. Based on this premise, the interior L_{dn} should not exceed 45 dBA.

California Regulations

Department of Health Services

The California Department of Health Services' Office of Noise Control (ONC) has studied the correlation of noise levels and their effects on various land uses. As a result, a set of generalized exterior and interior noise standards was generated for residential, commercial, institutional/public, and open space land uses.[3]

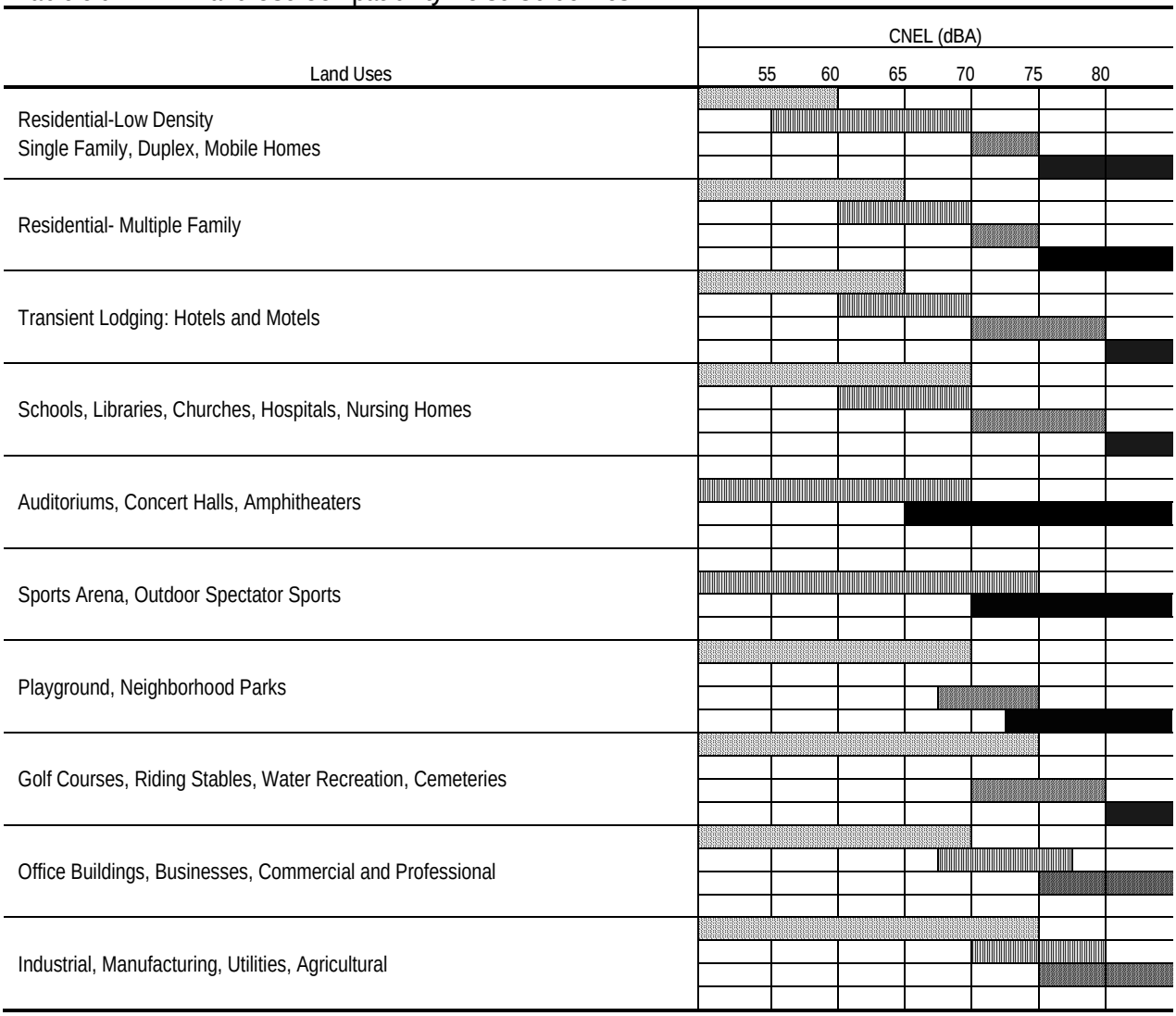
The ONC also prepared a land use compatibility chart for community noise which is intended to provide urban planners with a tool to gauge the compatibility of land uses relative to existing and future noise levels. The table identifies "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable" noise levels for various land use types. A conditionally acceptable or normally unacceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. These noise compatibility guidelines, in terms of the CNEL noise metric, are shown in Table 5.9-4.

Since all city or county jurisdictions must include a noise element in their general plans, many jurisdictions have simply adopted the state compatibility guidelines, while other authorities customize the state chart for their locale. The County of Los Angeles has not adopted the ONC compatibility matrix, but the County Noise Element states that "[the County] has adapted this matrix to develop the County's exterior noise standards, as seen in [Noise Element] Table 11.2."[4]

[3] Residential includes single and multifamily, duplex, and mobile homes. Commercial includes hotel, motel, transient housing, commercial retail, bank, restaurant, office building, research and development, professional offices, amphitheater, concert hall, auditorium, movie theater, gymnasium (multipurpose), sports club, manufacturing, warehouse, wholesale, utilities, and movie theaters uses. Institutional / Public includes, hospital, school classrooms/playground, church, and library uses. Open Space includes parks.

[4] Please refer to Appendix H for additional information.

Table 5.9-4 Land Use Compatibility Noise Guidelines



Explanatory Notes

	Normally Acceptable: With no special noise reduction requirements assuming standard construction.		Normally Unacceptable: New construction is discouraged. If new construction does not proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design.		Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: GOPR 2003.

California Building Code

The California Building Code (CBC), Title 24, Part 2, Volume 1, Chapter 12, Interior Environment, Section 1207.11.2, Allowable Interior Noise Levels, requires that residences' interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric is evaluated as either the day-night average sound level (L_{dn}) or the community noise equivalent level (CNEL), using the noise metric that is consistent with the noise element of the particular local general plan.

The California Green Building Standards Code, Chapter 5, Division 5.5, has additional requirements for insulation that affect exterior-interior noise transmission for nonresidential structures (which include multifamily structures of four or more stories). Pursuant to Section 5.507.4.1, Exterior Noise Transmission, Prescriptive Method, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet:

- A composite sound transmission class (STC) rating of at least 50, or
- A composite outdoor-indoor transmission class (OITC) rating of no less than 40 with exterior windows of a minimum STC of 40, or
- OITC of 30 if the project location is within the 65 dBA CNEL or L_{dn} noise contour of an airport (military, public, private, or heliport), freeway, expressway, railroad, industrial source, or fixed-guideway source (as determined by the noise element of the general plan). Where noise contours are not readily available, projects exposed to a noise level of 65 dBA $L_{eq\text{-}1\ hr}$ during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum of STC 40 (or OITC 30).

Residential structures within the noise contours identified above require an acoustical analysis showing that the structure has been designed to limit intruding noise in the prescribed allowable levels. To comply with these regulations, applicants for new residential projects are required to submit an acoustical analysis report. The report is required to show topographical relationship of noise sources and dwelling site, identification of noise sources and their characteristics, predicted noise spectra at the exterior of the proposed dwelling structure considering present and future land usage, basis for the prediction (measured or obtained from published data), noise attenuation measures to be applied, and an analysis of the noise insulation effectiveness of the proposed construction showing that the prescribed interior noise level requirements are met. If interior allowable noise levels are met by requiring that windows be unopenable or closed, the design for the structure must also specify the means that will be employed to provide ventilation and cooling, if necessary, to provide a habitable interior environment.

Local Noise Standards

While the proposed project is within an unincorporated part of the County of Los Angeles, some offsite receptors that may potentially be impacted by noise and/or vibration effects from the development of the Specific Plan are located within the adjacent City of Los Angeles or the City of Carson. Therefore, for this

project, the pertinent noise and vibration thresholds will utilize County of Los Angeles, City of Los Angeles, and City of Carson code standards in this environmental assessment, as applicable.

County of Los Angeles

The County of Los Angeles includes noise standards and guidelines in its General Plan Noise Element, and the Code of Ordinances, as discussed below (and as included in Appendix H of this DEIR):

County General Plan Noise Element

The County of Los Angeles 2035 General Plan Noise Element is the guiding document for the County's noise policy. The purpose of the Noise Element is to reduce and limit the exposure of the general public to excessive noise levels. The Noise Element noise mitigation regulations and delineates federal, state and city jurisdiction relative to rail, automotive, aircraft, and nuisance noise. It also sets forth noise management goals, objectives, policies, and programs of the County of Los Angeles.

Policies in the Noise Element promote land use compatibility (N 1.2), aim to maintain compliance with County Code noise standards (N 1.5), ensure noise impacts do not exceed healthy levels (N 1.6), minimize transportation noise (N 1.7, N 1.8), and require barriers, buffers, and proper design and orientation for noise-sensitive uses when necessary (N 1.9, N 1.10, N 1.11).

County Code of Ordinances

The county applies the Noise Control Ordinance in Chapters 12.08 and 12.12 and includes standards (summarized in Table 5.9-5) for nontransportation fans, blowers, pumps, turbines, saws, engines, and other similar machinery. These standards do not gauge the compatibility of developments in the noise environment, but provide restrictions on the amount and duration of noise generated at a property, as measured at the property line of the noise receptor. The County's noise ordinance is designed to protect people from objectionable nontransportation noise sources such as music, construction activity, machinery, pumps, and air conditioners. The noise standards in Table 5.9-5, *County of Los Angeles Exterior Noise Standards*, apply to all property within a designated noise zone, unless otherwise indicated.

Table 5.9-5 County of Los Angeles Exterior Noise Standards

		Maximum Permissible Noise Level (dBA)[1,2]				
Noise Zone	Time Period	Standard 1 (L_{50})	Standard 2 (L_{25})	Standard 3 (L_{8})	Standard 4 (L_{2})	Standard 5 (L_{max})
Noise-Sensitive Area	Anytime	45	50	55	60	65
Residential Properties	10 PM to 7 AM	45	50	55	60	65
	7 AM to 10 PM	50	55	60	65	70
Commercial Properties	10 PM to 7 AM	55	60	65	70	75
	7 AM to 10 PM	60	65	70	75	80
Industrial Properties	Anytime	70	75	80	85	90

Source: County of Los Angeles Municipal Code, Section 12.08.390.

[1] According to Section 12.08.390, if the ambient noise levels exceed the exterior noise standards above, then the ambient noise level becomes the noise standard. If the source of noise emits a pure tone or impulsive noise, the exterior noise levels limits shall be reduced by five decibels.

[2] If the measurement location is on a boundary property between two different zones, the noise limit shall be the arithmetic mean of the maximum permissible noise level limits of the subject zones; except when an intruding noise source originates on an industrial property and is impacting another noise zone, the applicable exterior noise level shall be the daytime exterior noise level for the subject receptor property.

- **Standard No. 1** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 30 minutes in any hour. Standard No. 1 shall be the applicable L_{50} noise level shown above; or, if the ambient L_{50} exceeds the foregoing level, then the ambient L_{50} becomes the exterior noise level for Standard No. 1.

- **Standard No. 2** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 15 minutes in any hour. Standard No. 2 shall be the applicable L_{50} noise level shown above plus 5dB; or, if the ambient L_{25} exceeds the foregoing level, then the ambient L_{25} becomes the exterior noise level for Standard No. 2.

- **Standard No. 3** shall be the exterior noise level which may not be exceeded for a cumulative period of more than five minutes in any hour. Standard No. 3 shall be the applicable L_{50} noise level shown above plus 10dB; or, if the ambient L_8 exceeds the foregoing level, then the ambient L_8 becomes exterior noise level for Standard No. 3.

- **Standard No. 4** shall be the exterior noise level which may not be exceeded for a cumulative period of more than one minute in any hour. Standard No. 4 shall be the applicable L_{50} noise level shown above plus 15dB; or, if the ambient L_2 exceeds the foregoing level, then the ambient L_2 becomes the exterior noise level for Standard No. 4.

- **Standard No. 5** shall be the exterior noise level which may not be exceeded for any period of time. Standard No. 5 shall be the applicable L_{50} noise level shown above plus 20dB; or, if the ambient L_0 exceeds the foregoing level then the ambient L_{max} becomes the exterior noise level for Standard No. 5.

Construction Noise

The County prohibits the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of 7 PM and 7 AM on weekdays and Saturdays, or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real-property line, except for emergency work of public service utilities or by variance. The County also sets maximum noise levels not to exceed the following maximum noise levels from mobile equipment (unscheduled, intermittent, short-term operations for less than 30 days) as summarized in Table 5.9-6, *County of Los Angeles Mobile Construction Equipment Noise Limits*.

Table 5.9-6 County of Los Angeles Mobile Construction Equipment Noise Limits

	Single-Family Residential	Multi-Family Residential	Semi-Residential/ Commercial
Daily, except Sundays and legal holidays, 7 AM to 8 PM	75 dBA	80 dBA	85 dBA
Daily, 8 PM to 7 AM and all day Sunday and legal holidays	60 dBA	64 dBA	70 dBA

Source: County of Los Angeles Municipal Code, Section 12.08.440. For non-scheduled, intermittent, short-term operations for less than 30 days.

Maximum noise levels from stationary equipment (repetitively scheduled and relatively long-term operations of ten days or more) are summarized in Table 5.9-7, *County of Los Angeles Stationary Construction Equipment Noise Limits*.

Table 5.9-7 County of Los Angeles Stationary Construction Equipment Noise Limits

	Single-Family Residential	Multi-Family Residential	Semi-residential/ Commercial
Daily, except Sundays and legal holidays, 7 AM to 8 PM	60 dBA	65 dBA	70 dBA
Daily, 8 PM to 7 AM and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Source: County of Los Angeles Municipal Code, Section 12.08.440. For repetitively scheduled and relatively long-term operations of ten days or more.

Vibration Standards

The County of Los Angeles Code, Section 12.08.560, prohibits the operation of any device that creates vibration that is above 0.01 in/sec at or beyond the property boundary of the source, if on private property, or at 150 feet from the source, if on a public space or public right-of-way. This criterion is pertinent to the evaluation of vibration-annoyance impacts from ongoing industrial uses to nearby sensitive receptors. For temporary construction-generated vibration levels, the FTA guidelines shown in Table 5.9-8 will be used for annoyance criteria.

Table 5.9-8 Groundborne Vibration Criteria: Human Annoyance

Land Use Category	Max Lv (VdB)	Description
Workshop	90	Distinctly felt vibration. Appropriate to workshops and non-sensitive areas
Office	84	Felt vibration. Appropriate to offices and non-sensitive areas.
Residential – Daytime	78	Barely felt vibration. Adequate for computer equipment.
Residential – Nighttime	72	Vibration not felt, but groundborne noise may be audible inside quiet rooms.

Source: Federal Transit Administration (FTA). 2006, May. *Transit Noise and Vibration Impact Assessment.* U.S. Department of Transportation. FTA-VA-90-1003-06.
Note: Max Lv (VdB): Lv is the velocity level in decibels, as measured in 1/3-octave bands of frequency over the frequency ranges of 8 to 80 Hz.

It is also pertinent to assess potential architectural damage, beyond just annoyance effects, due to vibrational energy. In lieu of established vibration damage criteria in the County Code, the FTA guidelines shown in Table 5.9-9 will be used for architectural damage criteria.

Project-related construction activities that would generate vibration that are strong enough to cause vibration-induced architectural damage to the nearest buildings (which are commercial and light industrial) should be limited to 0.5 peak particle velocity (PPV) in inches per second (in/sec) for reinforced concrete, steel buildings without plaster. For residential structures (which fall in the category of nonengineered timber and masonry buildings), the FTA criterion is 0.2 PPV in/sec.

Table 5.9-9 Groundborne Vibration Criteria: Architectural Damage

Building Category		PPV (in/sec)	Lv (VdB)
I.	Reinforced concrete, steel, or timber (no plaster)	0.5	102
II.	Engineered concrete and masonry (no plaster)	0.3	98
III.	Non-engineered timber and masonry buildings	0.2	94
IV.	Buildings extremely susceptible to vibration damage	0.12	90

Source Federal Transit Administration (FTA). 2006, May. *Transit Noise and Vibration Impact Assessment.* U. S. Department of Transportation. FTA-VA-90-1003-06.
Note: Lv (VdB): Lv is the velocity level in decibels, as measured in 1/3-octave bands of frequency over the frequency ranges of 8 to 80 Hz.

City of Los Angeles

The following noise standards and guidelines of the City of Los Angeles' General Plan Noise Element and Municipal Code are provided for information and general reference.

City of Los Angeles General Plan Noise Element

The City's General Plan Noise Element (February 1999) is the guiding document for the City's noise policy. The Noise Element noise mitigation regulations and delineates federal, state and city jurisdiction relative to rail, automotive, aircraft and nuisance noise. It also sets forth noise management goals, objectives, policies and programs of the City of Los Angeles. Since the project site is within the County, the City standards for noise at receptors within the City limits would be more relevant to the project's assessment than the City's Noise Element.[5] The pertinent City standards are contained in the Municipal Code, as discussed below.

City of Los Angeles Municipal Code

The City's noise ordinance is designed to protect people from objectionable nontransportation noise sources such as music, machinery, pumps, and air conditioners.[6] These standards do not gauge the compatibility of developments in the noise environment, but provide restrictions on the amount and duration of noise generated at a property, as measured at any given receptor's property line. According to the City's noise ordinance, stationary noise sources such as radios, television sets, and similar devices (Section 112.01), and air conditioning, refrigeration, heating, pumping, and filtering equipment (Section 112.02) are prohibited from causing the ambient noise level to increase by more than 5 dB. Where actual ambient levels are lower than shown in Table 5.9-10, the presumed ambient noise levels in the table are used as the baseline.[7]

Trash collecting within 200 feet of a residential building is prohibited between the hours of 9:00 PM and 6:00 AM.[8] In addition, loading/unloading of commercial vehicles is prohibited between the hours of 10:00 PM and 7:00 AM within 200 feet of a residential building.[9]

5 As such, the City of Los Angeles Noise Element is not included in Appendix H of this DEIR.
6 City of Los Angeles Municipal Code, Chapter XI, Noise Regulation http://www.amlegal.com/nxt/gateway.dll?f=templates&fn=default.htm&vid=amlegal:lamc_ca
7 City of Los Angeles Municipal Code, Chapter XI, Noise Regulation, Article 1, Section 111.03, Minimum Ambient Noise Levels. http://www.amlegal.com/nxt/gateway.dll?f=templates&fn=default.htm&vid=amlegal:lamc_ca
8 City of Los Angeles Municipal Code, Chapter XI, Noise Regulation, Article 1, Section 113.01, Rubbish and Garbage Collection and Disposal

Table 5.9-10 City of Los Angeles Ambient Noise Criteria

Zoning Categories	Time Period	Exterior Noise Limits (dBA Leq)
Residential: A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	10:00 p.m. to 7:00 a.m.	40
	7:00 a.m. to 10:00 p.m.	50
Commercial: P, PB, CR, C1, C1.5, C2, C4, C5, and CM	10:00 p.m. to 7:00 a.m.	55
	7:00 a.m. to 10:00 p.m.	60
Industrial: M1, MR1, and MR2	10:00 p.m. to 7:00 a.m.	55
	7:00 a.m. to 10:00 p.m.	60
Industrial: M2 and M3	10:00 p.m. to 7:00 a.m.	65
	7:00 a.m. to 10:00 p.m.	65

Notes: Residential: A1 and A2: Agriculture; RA and RS: Suburban; RE Residential Estate; RD: Restricted Density Multiple Dwelling; RW1 and RW2: Residential Waterways; R1: One-family; R2: Two-family; R3, R4, and R5: Multiple Dwelling.
Commercial P: Automobile Parking; PB Parking Building; CR, C1, and C1.5: Limited Commercial; C2, C4, and C5: Commercial Zone; CM: Commercial Manufacturing.
Light Industrial: M1: Limited Industrial; MR1: Restricted Industrial; MR2: Restricted Light Industrial, M2: Light Industrial; M3: Heavy Industrial.

City of Los Angeles Construction Noise Standards

Section 41.40 and Section 112.05 of the City of Los Angeles Municipal Code govern noise limits and the hours of construction activities that occur within the City.

Section 41.40 of the Municipal Code specifies hours allowed for construction activities for the purposes of noise control.[10] Construction activities are constrained to the daytime hours from 7:00 AM to 9:00 PM Monday through Friday, 8:00 AM to 6:00 PM on Saturdays and national holidays, and prohibited on Sundays.

Chapter XI, Noise Regulation, Section 112.05, of the Los Angeles Municipal Code also specifies the maximum noise level for construction equipment.[11] In accordance with this section and section 41.40, construction equipment, including augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors, and pneumatic or other powered equipment items shall not produce a maximum noise level exceeding 75 dBA at a distance of 50 feet between the hours of 7:00 AM and 9:00 PM. The City allows construction noise exceeding these noise limits if compliance is technically infeasible. However, the burden of proving that compliance is technically infeasible includes showing that noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques during the operation of the equipment.

City of Los Angeles Vibration Standards

The City of Los Angeles does not have specific limits or thresholds for vibration. In lieu of such vibration-related standards for receptors within the boundaries of the City of Los Angeles, the aforementioned FTA thresholds are used herein, as applicable.

[9] City of Los Angeles Municipal Code, Chapter XI, Noise Regulation, Article 1, Section 114.03, Vehicles-Loading and Unloading

[10] City of, Los Angeles, City of Los Angeles Municipal Code, Chapter IV, Public Welfare, Article 1, Disorderly Conduct, Section 41.40, Noise Due to Construction, Excavation Work – When Prohibited. Available: <http://www.amlegal.com/los_angeles_ca/

[11] City of Los Angeles Municipal Code, Chapter XI, Noise Regulation, Article 2, Section 112.05, Maximum Noise Level of Powered Equipment or Powered Hand Tools

City of Carson

City of Carson General Plan Noise Element

The City's General Plan Noise Element (2001) is the guiding document for noise policy. The Noise Element noise mitigation regulations delineates federal, state and city jurisdiction relative to rail, automotive, aircraft, and nuisance noise. It also sets forth noise management goals, objectives, policies, and programs of the City of Carson. Since the project site is within the County, the City standards for noise at receptors within the City limits would be more relevant to the project's assessment than the City's Noise Element.[12] The pertinent City of Carson standards are contained in the Municipal Code, as discussed below.

City of Carson Municipal Code

The City of Carson has adopted the "Noise Control Ordinance of the County of Los Angeles" as the City's Noise Control Ordinance, with the exception of the following changes to the noise standards in Section 12.08.180:

- **Standard No. 1** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 15 minutes in any 30 minute period. Standard No. 1 shall be the applicable noise level from subsection A of this Section; or, if the ambient L_{50} exceeds the foregoing level, then the ambient L_{50} becomes the exterior noise level for Standard No. 1.
- **Standard No. 2** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 7.5 minutes in any 30 minute period. Standard No. 2 shall be the applicable noise level from subsection A of this Section plus 5dB; or, if the ambient L_{25} exceeds the foregoing level, then the ambient L_{25} becomes the exterior noise level for Standard No. 2.
- **Standard No. 3** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 2.5 minutes in any 30 minute period. Standard No. 3 shall be the applicable noise level from subsection A of this Section plus 20dB; or, if the ambient $L_{8.3}$ exceeds the foregoing level, then the ambient $L_{8.3}$ becomes the exterior noise level for Standard No. 3.
- **Standard No. 4** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 30 seconds in any 30 minute period. Standard No. 4 shall be the applicable noise level from subsection A of this Section plus 15dB; or, if the ambient $L_{1.7}$ exceeds the foregoing level, then the ambient $L_{1.7}$ becomes the exterior noise level for Standard No. 4.
- **Standard No. 5** shall be the exterior noise level which may not be exceeded for any period of time. Standard No. 5 shall be the applicable noise level from subsection A of this Section plus 20dB; or, if the ambient L_0 exceeds the foregoing level then the ambient L_0 becomes the exterior noise level for Standard No. 5.

[12] As such, the City of Carson Noise Element is not included in Appendix H of this DEIR.

City of Carson Construction Noise Standards

Please see the above discussion on Section 41.40 and Section 112.05 of the City of Los Angeles Municipal Code regarding construction-related noise limits and allowable hours.

City of Carson Vibration Standards

The City of Carson does not have specific limits or thresholds for vibration. In lieu of such vibration-related standards for receptors within the boundaries of the City of Carson, the aforementioned FTA thresholds are used herein, as applicable.

5.9.1.5 EXISTING NOISE ENVIRONMENT

Project and Nearby Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration. In general, these uses include residences, schools, hospital facilities, houses of worship, and open space/recreation areas where quiet environments are necessary for the enjoyment, public health, and safety of the community. Commercial uses are not considered noise- or vibration-sensitive uses. Sensitive receptors include single- and multifamily residential uses throughout and surrounding the Specific Plan area. Facilities at Harbor-UCLA Medical Center, which lie within the Specific Plan area, qualify as hospital uses and are also considered sensitive receptors. Several churches and worship uses lie within and near the plan area. Schools within the plan area include Van Deene Avenue Elementary School (north of 214th Street and east of Vermont Avenue) and Meyler Street Elementary School (north of 223rd Street and west of Meyler Street). The nearest schools in the vicinity but outside of the plan area are White Middle School (640 feet to the east of the Plan Area boundary), Caroldale Avenue Elementary School (1,400 feet to the southeast), and Halldale Avenue Elementary School (200 feet to the west). White Middle School and Caroldale Avenue Elementary School are located to the east of Interstate 110, which lies between those schools and the plan area.

Ambient Noise Measurements

To characterize the general community noise environment and to quantify the existing noise levels at and adjacent to the Specific Plan area, noise monitoring was conducted by PlaceWorks staff in April of 2017. The general noise environment in the Specific Plan area is a combination of noise due to local and distant roadway noise, commercial uses, ventilation equipment atop hospital buildings, general urban noise, distant helicopters, chirping birds and barking dogs, rustling vegetation, and various activities in the neighborhood (people talking, children playing, etc.). Generally, conditions on Tuesday, April 18, included partly cloudy skies, daytime temperatures from the mid-70s to low 80s in degrees Fahrenheit (°F), and average wind speeds of less than 5 miles per hour. Conditions on Wednesday, April 19, included clear skies, daytime temperatures in the upper 60s and low 70s F, and average wind speeds of less than 5 miles per hour.

Noise monitoring was performed using a Larson-Davis Model 820 integrating/logging Sound Level Meter, which satisfy the American National Standards Institute standard for Type 1 general environmental noise measurement instrumentation. The sound level meters were programmed to acquire noise levels with the "slow" time constant and using the "A" weighting filter network. The meters were field calibrated immediately

prior to the first set of readings. The calibration was rechecked immediately after the conclusion of the readings and no notable meter "drift" was noted (i.e. less than ½ dB deviation).

This ambient noise field work effort included eleven short-term samples (of 15-minute duration) and two 24-hour, long-term noise monitoring sessions. For the short-term samples, the sound level meter and microphone were mounted on a tripod 5 feet above the ground and equipped with a windscreen during all measurements. Short-term (ST) noise level measurements were taken at eleven locations for a period of 15 minutes each during the daytime on April 18 and 19, 2017, between the hours of 12:00 PM and 5:00 PM. These eleven locations were chosen to supplement the traffic-flow noise calculations and were deemed to be representative of a variety of sensitive-receptor situations throughout the Specific Plan area. For the long-term monitoring, technical problems with the instrumentation resulted in a loss of measurement data from one of the long-term locations, and no results from that location will be included in this assessment. For the second long-term monitoring location, the microphone and windscreen were attached to a lightpost. The noise measurement locations are described below and shown in Figure 5.9-1, *Ambient Noise Measurement Locations*.

- **Long-Term Location 1 (LT-1):** Long-term noise monitoring Location 1 was located in the western portion of the Harbor-UCLA Medical Center, approximately 350 feet east of Normandie Avenue and 450 feet south of W. Carson Street. 24-hour noise readings commenced at 12:41 PM on Tuesday, April 18, 2017, at which time the air temperature was 77°F with 53 percent Relative Humidity (RH), and winds were between 1 and 4 miles per hour (mph). When the noise monitor was picked up on at 4:40 PM on Wednesday, April 19, after the 24-hour monitoring period, the air temperature was 71°F with 48% RH, and winds were between 0 and 2 miles per hour.

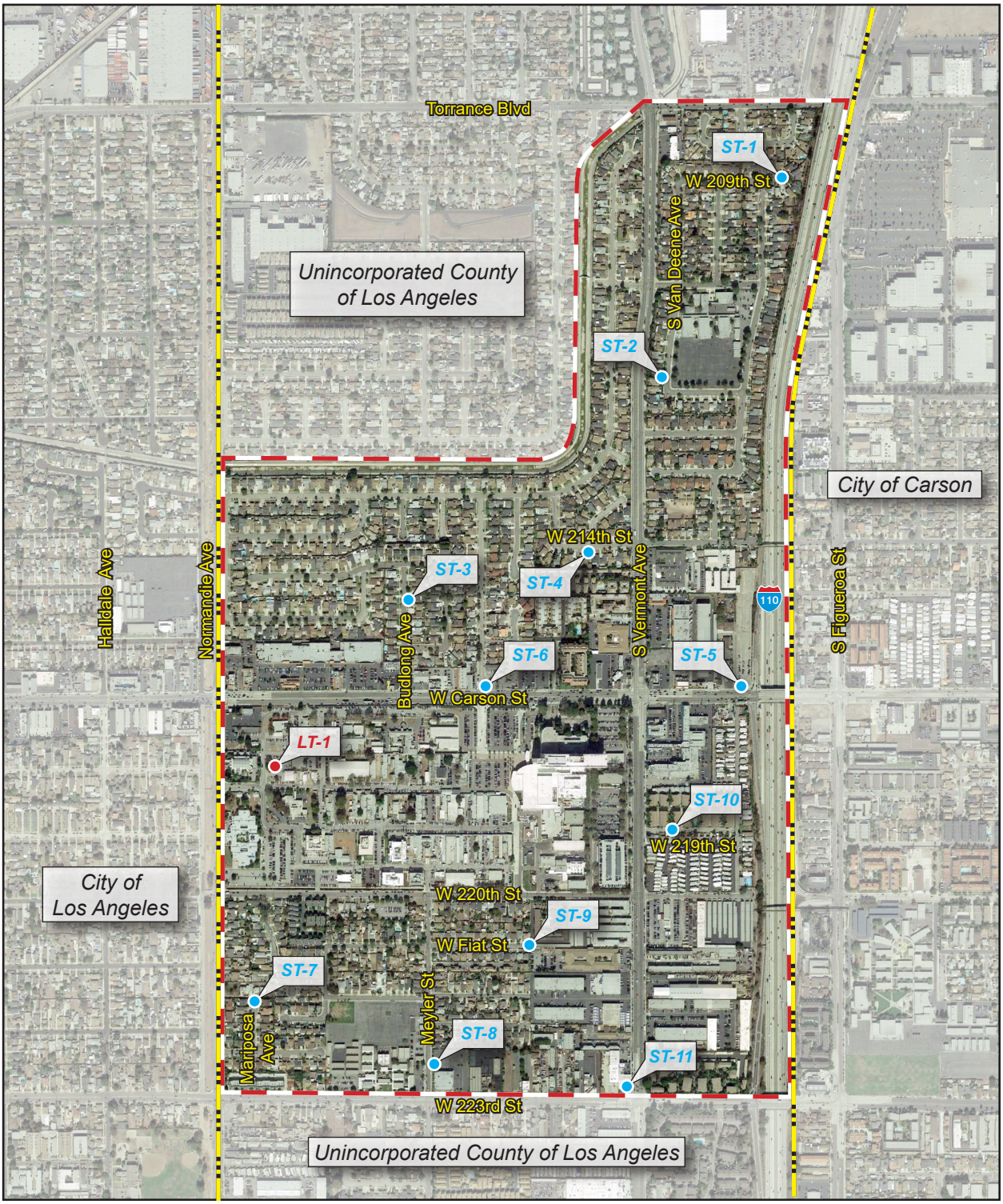
  The microphone was attached to a lightpost in the parking lot north of Medical Center Drive. The noise environment of this site was characterized primarily by noise from vehicles and trucks entering the medical center along Medical Center Drive, parking lot activity, HVAC, and vehicles on Normandie Avenue. Other noise sources included workers talking, rustling trees and bushes, birds, and temporary sirens.

- **Short-Term Sampling Location 1 (ST-1).** Short-term noise monitoring Location 1 was in a residential community south of Torrance Boulevard and east of Vermont Avenue. The noise monitor was positioned at the center of the court at the east end of 209th Street. Fifteen minutes of noise measurements were taken beginning at 3:57 PM on Wednesday, April 19, 2017, at which time the air temperature was 70°F with 64% RH, and wind speed was 1 to 5 miles per hour.

  The noise environment of this site was characterized primarily by ambient neighborhood noise, and freeway traffic on I-110. Other noise sources included rustling trees and bushes, birds, a distant siren, and a helicopter.

Figure 5.9-1 - Ambient Noise Measurement Locations

5. Environmental Analysis



Project Boundary

City Boundary

ST-1 Short-Term Noise Measurement Locations (11)

LT-1 Long-Term Noise Measurement Locations (1)

0 1,000
Scale (Feet)

Source: Google Earth Pro, 2017

This page intentionally left blank.

- **Short-Term Sampling Location 2 (ST-2).** Short-term noise monitoring Location 2 was in a residential community, adjacent to Van Deene Elementary School. The noise monitor was positioned on the sidewalk in front of 21125 Van Deene Avenue, near the corner with 212th Street and across from the school playground. Fifteen minutes of noise measurements were taken beginning at 3:22 PM on Wednesday, April 19, 2017, at which time the air temperature was 71°F with 65% RH, and wind speed was 1 to 3 miles per hour.

  The noise environment of this site was characterized primarily by ambient neighborhood noise, rustling trees and bushes, and birds. Other noise sources included distant traffic, distant aircraft, kids playing on the far side of the playground, and three car pass-bys along Van Deene Avenue during the measurement period.

- **Short-Term Sampling Location 3 (ST-3).** Short-term noise monitoring Location 3 was located on Budlong Avenue, in a residential neighborhood to the north of W. Carson Street. The noise monitor was positioned on the sidewalk in front of 21418 Budlong Avenue, approximately 600 feet north of W. Carson Street. Fifteen minutes of noise measurements were taken beginning at 12:31 PM on Wednesday, April 19, 2017, at which time the air temperature was 70°F with 65% RH, and wind speed was 0 to 4 miles per hour.

  The noise environment of this site was characterized primarily by rustling trees and bushes, ambient neighborhood noise, and birds. Other noise sources included distant traffic, distant aircraft, and a neighbor doing light yardwork. There were four car pass-bys along Budlong Avenue during the measurement period.

- **Short-Term Sampling Location 4 (ST-4).** Short-term noise monitoring Location 4 was located at the intersection of 214th Street and Payne Avenue, in a residential neighborhood west of Vermont Avenue. The noise monitor was positioned in front of 922 214th Street, approximately 300 feet west of Vermont Avenue. Fifteen minutes of noise measurements were taken beginning at 12:59 PM on Wednesday, April 19, 2017, at which time the air temperature was 68°F with 58% RH, and wind speed was 0 to 5 miles per hour, with gusts up to 8 mph.

  The noise environment of this site was characterized primarily by ambient neighborhood noise, rustling trees and bushes, and near and distant traffic. Other noise sources included a flag flapping in the wind, birds, and distant aircraft. There were 11 car pass-bys along 214th Street during the measurement period.

- **Short-Term Sampling Location 5 (ST-5).** Short-term noise monitoring Location 5 was located in a parking lot on W. Carson Street, immediately west of the I-110 southbound freeway ramps. Fifteen minutes of noise measurements were taken beginning at 2:58 PM on Wednesday, April 19, 2017, at which time the weather was sunny and clear.

  The noise environment of this site was characterized heavily by traffic on I-110 and W. Carson Street, and by cars and trucks driving and idling on the southbound ramp at the stoplight. Additional noise from rustling trees was also noted at the site.

- **Short-Term Sampling Location 6 (ST-6).** Short-term noise monitoring Location 6 was located at the northeast corner of the intersection of W. Carson Street and Berendo Avenue. The noise monitor was positioned on the sidewalk next to the traffic light pole, near Fortune Bowl restaurant. Fifteen minutes of noise measurements were taken beginning at 11:54 AM on Wednesday, April 19, 2017, at which time the air temperature was 73°F with 62% RH, and wind speed was 1 to 5 miles per hour.

  The noise environment of this site was characterized primarily by traffic along W. Carson Street and Berendo Avenue, and kitchen noise from Fortune Bowl, which had an open window. Other noise sources included pedestrians and ambient commercial noise.

- **Short-Term Sampling Location 7 (ST-7).** Short-term noise monitoring Location 7 was located at the end of Mariposa Avenue, in a residential neighborhood to the east of Normandie Avenue. The noise monitor was positioned in the center of the court at the end of Mariposa Avenue. Fifteen minutes of noise measurements were taken beginning at 3:55 PM on Tuesday, April 18, 2017, at which time the air temperature was 73°F with 66% RH, and wind speed was 2 to 6 miles per hour.

  The noise environment of this site was characterized primarily by rustling trees and bushes. Other noise sources included distant traffic, ambient neighborhood noise, neighbors talking quietly, a helicopter, and brief sirens.

- **Short-Term Sampling Location 8 (ST-8).** Short-term noise monitoring Location 8 was located along Meyler Street, approximately 200 feet north of 223rd Street. The noise monitor was positioned on the sidewalk next to the first gate to the parking lot for Cornerstone Christian Center. Fifteen minutes of noise measurements were taken beginning at 2:49 PM on Tuesday, April 18, 2017, at which time the air temperature was 77°F with 56% RH, and wind speed was 1 to 6 miles per hour.

  The noise environment of this site was characterized primarily by rustling trees and bushes, and traffic along 223rd Street and Meyler Street. Other noise sources included pedestrian activity of parents and children coming home from school, bugs, and a school bus pass-by.

- **Short-Term Sampling Location 9 (ST-9).** Short-term noise monitoring Location 9 was located at the end of Fiat Street, in a residential neighborhood to the south of 220th Street. The noise monitor was positioned in the center of the court at the east end of Fiat Street. Fifteen minutes of noise measurements were taken beginning at 3:17 PM on Tuesday, April 18, 2017, at which time the air temperature was 75°F with 66% RH, and wind speed was 2 to 7 miles per hour.

  The noise environment of this site was characterized primarily by rustling trees and bushes, ambient neighborhood noise, distant and overhead aircraft, and distant traffic. A helicopter was flying near the measurement area for about two minutes. Other noise sources included wind chimes, brief use of a buzz saw by a neighbor, fire truck sirens, birds, and kids playing at a distant playground.

- **Short-Term Sampling Location 10 (ST-10).** Short-term noise monitoring Location 10 was located along 219th Street, approximately 175 feet east of Vermont Avenue. The noise monitor was positioned in front of 822 219th Street near the mailbox. Fifteen minutes of noise measurements were taken beginning at 1:59 PM on Tuesday, April 18, 2017, at which time the air temperature was 79°F with 55% RH, and wind speed was 1 to 4 miles per hour.

  The noise environment of this site was characterized primarily by traffic on Vermont Avenue, distant barking dogs, birds, and rustling trees and bushes. Other noise sources included distant aircraft and a toddler playing in a neighboring yard. There were three car pass-bys along 219th Street during the measurement period.

- **Short-Term Sampling Location 11 (ST-11).** Short-term noise monitoring Location 11 was located at the northwest corner of the intersection of 223rd Street and Vermont Avenue. The noise monitor was positioned in the parking lot, next to the sign for Ohana Veterinary Clinic. Fifteen minutes of noise measurements were taken beginning at 2:23 PM on Tuesday, April 18, 2017, at which time the air temperature was 82°F with 52% RH, and wind speed was 2 to 3 miles per hour.

  The noise environment of this site was characterized heavily by traffic along 223rd Street and Vermont Avenue. Traffic included many trucks, semis, and buses in addition to passenger vehicles.

Short-Term Monitoring Results

During the ambient noise survey, daytime energy-average noise levels in the areas surrounding the project site ranged from 54 to 74 dBA L_{eq}. Short-term noise measurement locations are shown in Figure 5.9-1, and the readings are summarized in Table 5.9-11, *Short-Term Noise Measurements Summary*.

Table 5.9-11 Short-Term Noise Measurements Summary[1]

Monitoring Location	Start Time	Description	Minimum Level L_{min}, dBA	Energy-Average Level L_{eq}, dBA	Maximum Level L_{max}, dBA
ST-1	3:57 pm	End of 209th Street	53.8	56.0	59.2
ST-2	3:32 pm	Van Deene Elementary	47.8	53.9	68.3
ST-3	12:31 pm	Budlong Avenue	46.7	56.9	77.3
ST-4	12:59 pm	214th Street & Payne Ave	44.9	63.3	91.6
ST-5	2:58 pm	I-110 & W Carson Street	59.8	66.6	76.0
ST-6	11:54 am	Carson Street & Berendo Ave	53.2	68.6	79.3
ST-7	3:55 pm	End of Mariposa Ave	46.0	55.1	72.8
ST-8	2:49 pm	Cornerstone Christian Center	48.4	58.5	69.6
ST-9	3:17 pm	End of Fiat Street	47.7	60.7	74.2
ST-10	1:59 pm	219th Street, east of Vermont Ave	46.6	54.4	66.8
ST-11	2:23 pm	223rd Street & Vermont Ave	56.3	73.6	87.6

1. All noise sampling conducted by PlaceWorks staff on Tuesday, April 18, and Wednesday, April 19, 2017, and all short-term sampling periods were 15 minutes.

Long-Term Monitoring Results

Long-term noise measurement locations are shown in Figure 5.9-1, and the results of the long-term noise monitoring are summarized in Table 5.9-12, *Long-Term Noise Measurements Summary*. The graphical depiction of the hourly noise level records for the long-term monitoring location is included in Appendix H of this Draft EIR.

Table 5.9-12 Long-Term Noise Measurements Summary

Monitoring Location	Description	Noise Level (dBA CNEL)	Noisiest hour		Quietest hour	
			L_{eq}	Start Time	L_{eq}	Start Time
LT-1	Harbor-UCLA Med Center, east of Normandie Ave	62.6	63.2	8 AM	53.2	1 AM

Source: Noise sampling conducted by PlaceWorks staff from Tuesday, April 18, to Wednesday, April 19, 2017.

Summary of Ambient Noise Measurements

The noise environment throughout the Specific Plan area is considered generally typical for an urban area consisting of residential, commercial, and medical zones. Major roadways—including the I-110 freeway as well all major roads such as Vermont Avenue, W. Carson Street, and 223rd Street—tend to control the overall community noise soundscape in the Specific Plan area. The energy-averaged sound level in residential neighborhoods was generally within the 54 to 61 dBA L_{eq} range. For receivers that are located near major roadways, the L_{eq} was in the range of 59 to 74 dBA.

Ambient Conditions from On-Road Vehicles

Noise from motor vehicles is generated by engine vibrations, the interaction between tires and the road, and the exhaust system. Reducing the average motor vehicle speed reduces the noise exposure of receptors adjacent to the road. Each reduction of five miles per hour reduces noise by about 1.3 dBA (Caltrans 2004).

Given the preponderance of mobile-source noise in the vicinity of the project, it is necessary to determine the noise currently generated by vehicles traveling through the project area. Average daily traffic volumes were based on the existing daily traffic volumes calculated using peak hour intersection movements provided by IBI Group (IBI 2017).

The traffic noise levels for this project were estimated using a version of the FHWA Highway Traffic Noise Prediction Model. The FHWA model determines a predicted noise level through a series of adjustments to a reference sound level. These adjustments account for traffic flows, speed, truck mix, varying distances from the roadway, length of exposed roadway, and noise shielding. Vehicle speeds on each roadway were assumed to be the posted speed limit, and no reduction in speed was assigned due to congested traffic flows. Current roadway characteristics, such as the number of lanes and speed limits, were determined from field observations and according to roadway classification.

The results of this modeling indicate that average noise levels along arterial segments currently range from approximately 68 dBA to 74 dBA CNEL (as calculated at a distance of 50 feet from the centerline of the

road). Noise levels for existing conditions along analyzed roadways are presented in Table 5.9-13. *Existing Conditions Traffic Noise Levels*.

Table 5.9-13 Existing Conditions Traffic Noise Levels

Roadway	Segment	Daily Traffic Volumes	Noise Level at 50 Feet (dBA CNEL)	Distance to Noise Contour (feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
Carson Street	Normandie Ave to Berendo Ave	31,279	70.5	54	116	251
Carson Street	Vermont Ave to Figueroa St	36,819	71.2	60	130	280
Carson Street	Figueroa St to Main St	19,337	68.4	39	84	182
Carson Street	Western Ave to Normandie Ave	34,261	73.6	87	187	402
Normandie Avenue	Torrance Blvd to Carson St	18,173	70.8	57	122	264
Normandie Avenue	Carson St to 223rd St	19,616	71.2	60	129	277
Vermont Avenue	Javelin St to Carson St	17,330	70.6	55	119	255
Vermont Avenue	Carson St to 223rd St	21,151	71.5	63	135	292
Vermont Avenue	223rd St to 228th St	21,803	71.6	64	138	298
Figueroa Street	Carson St to 220th St	21,275	71.5	63	136	293

Source: FHWA Highway Traffic Noise Prediction Model; based on traffic volumes provided by IBI Group in 2017. Calculations included in Appendix H.

Ambient Conditions from Stationary Sources

Stationary sources of noises may occur from all types of land uses. Residential uses would generate noise from landscaping, maintenance activities, and air conditioning systems. Commercial uses would generate noise from heating, ventilation, HVAC systems, loading docks and other sources. Medical uses may generate noise due to HVAC systems, loading docks, and medical transport vehicles. Industrial uses may generate noise due to HVAC systems, loading docks, and machinery. Noise generated by residential or commercial uses is generally short and intermittent. Medical uses and industrial uses may generate more-continual noise due to the nature of their activities. For the developed land within the project site, land uses are primarily residential, with commercial uses along West Carson Street and Vermont Avenue, and medical uses at Harbor-UCLA Medical Center to the south of West Carson Street. Some light industrial uses are located along Vermont Street north of 223rd Street. Noise from stationary sources in the Specific Plan area is regulated through the County of Los Angeles Code of Ordinances.

5.9.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in:

N-1 Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

N-2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

N-3 A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

N-4 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

N-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.

N-6 For a project within the vicinity of a private airstrip, expose people residing or working the project area to excessive noise levels.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold N-5
- Threshold N-6

These impacts will not be addressed in the following analysis.

5.9.3 Plans, Programs, and Policies

5.9.3.1 REGULATORY REQUIREMENTS

RR NOI-1 The Project will be constructed in accordance with Sections 12.08 and 12.12 of the County Code, which generally prohibit construction activities that generate noise that could create a disturbance across a residential or commercial property line from occurring between 7:00 PM and 7:00 AM on weekdays, or at any time on Sunday or a federal holiday.

5.9.4 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.9-1: Construction activities would result in temporary noise increases in the vicinity of the proposed project. [Threshold N-3]

Impact Analysis: The County of Los Angeles recognizes that the control of construction noise is difficult at best and provides an exemption for this type of noise when the work is performed within the hours specified within the Los Angeles County Code (i.e., 7:00 AM to 7:00 PM Monday through Saturday). The County Code also lists the maximum acceptable noise levels generated by construction equipment (operating for at least 10 days) during the permitted hours of construction activity. These maximum acceptable noise level limits are categorized by receiving land use type:

- **Single-Family Residential** receptors should be less than 60 dBA during the daytime and less than 50 dBA during the nighttime (if construction-type activities are conducted outside of the allowable hours or on Sundays or legal holidays).

- **Multi-Family Residential** receptors should be less than 65 dBA during the daytime and less than 55 dBA during the nighttime (as above).

- **Semi-Residential/Commercial** receptors should be less than 70 dBA during the daytime and less than 60 dBA during the nighttime (as above).

Additionally, when construction activities generate noise that will affect receptors within the City of Los Angeles, construction would also abide by the City's construction hours (7:00 AM to 9:00 PM Monday through Friday, 8:00 AM to 6:00 PM on Saturdays and holidays) when they are more restrictive than the County's. As the City of Carson has adopted permitted construction hours from the Los Angeles County Code, activities that affect receptors within the City of Carson would not be subject to additional regulations (beyond the Los Angeles County Code requirements).

Given the lack of specific details about the future developments at the site, a generalized, program-level set of assumed construction activities were used for the construction noise assessment. Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. Sensitivity to noise is based on the location of the equipment relative to sensitive receptors, time of day, and the duration of noise-generating activities.

The Specific Plan would increase the number of permitted residential units within the Specific Plan area to 3,574 units—roughly 2,271 more than existing conditions. The proposed project also increases potential nonresidential building square footage to approximately 2.7 million square feet (a net increase of

approximately 1.7 million square feet over existing conditions). This impact discusses the potential construction-related noise impacts resulting from land use developments accommodated by the Specific Plan.

Two types of temporary noise impacts could occur during construction activities associated with development that would be accommodated by the Specific Plan. First, the transport of workers and movement of materials to and from the site could incrementally increase noise levels along local access roads. The second type of temporary noise impact is related to demolition, site preparation, grading, and/or physical construction. Construction is performed in distinct steps, each of which has its own mix of equipment and noise characteristics. Table 5.9-14, *Construction Equipment Noise Emission Levels*, lists typical construction equipment noise levels recommended for noise-impact assessments, based on a distance of 50 feet between the equipment and noise receptor.

Table 5.9-14 Construction Equipment Noise Emission Levels

Construction Equipment	Typical Max Noise Level (dBA L_{max})[1]	Construction Equipment	Typical Max Noise Level (dBA L_{max})[1]
Air Compressor	81	Pile-Driver (Impact)	101
Backhoe	80	Pile-Driver (Sonic)	96
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pump	76
Compactor	82	Rail Saw	90
Concrete Mixer	85	Rock Drill	98
Concrete Pump	71	Roller	74
Concrete Vibrator	76	Saw	76
Crane, Derrick	88	Scarifier	83
Crane, Mobile	83	Scraper	89
Dozer	85	Shovel	82
Generator	81	Spike Driver	77
Grader	85	Tie Cutter	84
Impact Wrench	85	Tie Handler	80
Jack Hammer	88	Tie Inserter	85
Loader	85	Truck	88
Paver	89		

Source: FTA 2006.
[1] Measured at 50 feet from the source.

As shown in Table 5.9-14, construction equipment generates high levels of noise, with maximums ranging from 71 dBA to 101 dBA. Construction of individual development projects associated with the Specific Plan would temporarily increase the ambient noise environment and would have the potential to affect noise-sensitive land uses in the vicinity of that project.

Significant noise impacts may occur from operation of heavy earthmoving equipment and truck hauling that would occur with construction of individual development projects. Implementation of the Specific Plan would result in an increase in development intensity throughout the plan area. Construction noise levels depend on the specific locations, site plans, and construction details of individual development projects,

which are not known at this time. Construction-related noise would be localized and would occur intermittently for varying periods of time.

Because specific project-level information is not available at this time, it is impossible to quantify the construction noise impacts at specific off-site or on-site sensitive receptors. Construction of individual development projects associated with the Specific Plan would temporarily increase the ambient noise environment in the vicinity of each development project, potentially affecting existing and future sensitive uses in the vicinity. Because these construction activities may occur near noise-sensitive receptors, because noise levels may exceed the County Code's maximum acceptable noise level limits at sensitive receptors, and because noise disturbances may occur for prolonged periods of time (depending on the project type), construction noise impacts associated with implementation of the proposed project are considered significant.

Level of Significance before Mitigation: Upon implementation of regulatory requirements, Impact 5.9-1 would be potentially significant.

Impact 5.9-2: Project implementation would result in long-term operation-related noise that would not exceed local standards. [Thresholds N-1 and N-3]

Impact Analysis: A significant impact would occur if the project would result in an increase of traffic noise levels of 5 dBA if their resultant noise level were to remain within the objectives of the General Plan (e.g., 60 dBA CNEL at single-family residential, 65 dBA CNEL at multifamily residential) or with an increase of 3 dBA if the resultant level were to meet or exceed the objectives of the General Plan. A significant stationary-source impact would occur if the activities or equipment at the project site produce noise levels at nearby sensitive receptors in excess of local code standards.

Traffic Noise

Future development in accordance with the Specific Plan would cause increases in traffic along local roadways. Sensitive land uses include residential, schools, churches, and medical uses. Commercial and industrial areas are not considered noise sensitive and generally have higher tolerances for exterior and interior noise levels.

The traffic noise levels were estimated using the FHWA Highway Traffic Noise Prediction Model. The FHWA model predicts noise levels through a series of adjustments to a reference sound level. These adjustments account for distances from the roadway, traffic flows, vehicle speeds, car/truck mix, length of exposed roadway, and road width. The distances to the 70, 65, and 60 CNEL contours for selected roadway segments in the vicinity of proposed project site are included in Appendix H.

Table 5.9-15, *Specific Plan Buildout Traffic Noise Increases*, presents the noise level increases on roadways over existing conditions at 50 feet from the centerline of each roadway segment due to the project. The "2035 Plus Project" traffic noise levels include effects of future regional ambient growth and growth due to the project (IBI 2017).

Table 5.9-15 Specific Plan Buildout Traffic Noise Increases

Roadway	Segment	dBA CNEL @ 50 ft.			
		Existing	2035 Plus Project	Overall Increase	Project Contribution
Carson Street	Normandie Ave to Berendo Ave	70.5	71.7	1.2	0.8
Carson Street	Vermont Ave to Figueroa St	71.2	73.3	2.1	1.7
Carson Street	Figueroa St to Main St	68.4	70.0	1.6	1.2
Carson Street	Western Ave to Normandie Ave	73.6	74.6	1.0	0.5
Normandie Avenue	Torrance Blvd to Carson St	70.8	71.4	0.6	0.1
Normandie Avenue	Carson St to 223rd St	71.2	71.7	0.5	0.0
Vermont Avenue	Javelin St to Carson St	70.6	73.1	2.4	2.1
Vermont Avenue	Carson St to 223rd St	71.5	73.0	1.5	1.1
Vermont Avenue	223rd St to 228th St	71.6	73.1	1.5	1.1
Figueroa Street	Carson St to 220th St	71.5	73.1	1.5	1.2

Source: FHWA Highway Traffic Noise Prediction Model based on traffic volumes provided by IBI Group (June 2017). Calculations in Appendix H

Table 5.9-15 shows that traffic noise increases resulting from the project contribution would range from 0.0 to 2.1 dBA CNEL, and overall increases due to both the project and regional growth would range from 0.5 to 2.4 dBA CNEL. No segments would experience substantial noise increases greater than 3 dBA over existing conditions. Therefore, impacts would be less than significant and no mitigation measures are necessary.

Stationary-Source Noise

Buildout of the Specific Plan would result in an increase in residential, commercial, mixed use, and light industrial development within the planning area. The primary noise sources from these land uses are landscaping and maintenance activities, HVAC systems, mechanical equipment, and loading docks. Noise generated by residential, commercial, or light industrial uses is generally short and intermittent, and these uses are not a substantial source of noise.

Additionally, the County of Los Angeles regulates noise produced by HVAC units, landscape maintenance, and loading activities in Section 12.08.390 of the County Code. The County's noise ordinances are based on the receiving land use and protect noise-sensitive uses regardless of neighboring uses. Any uses that generate noise that would affect receptors within the city limits of the City of Los Angeles or the City of Carson would also be subject to the municipal code standards of those cities, respectively. Through the enforcement of these code standards, stationary-source noise from these types of proposed land uses would not substantially increase the noise environment. Therefore, project-related noise impacts from stationary sources would be less than significant.

As the proposed Specific Plan would not result in significant increases in traffic or stationary noise, long-term operational noise would not exceed local standards, and the impact would be less than significant.

Level of Significance before Mitigation: Upon implementation of regulatory requirements, Impact 5.9-2 would be less than significant.

Impact 5.9-3: The project would create short-term and long-term groundborne vibration and groundborne noise. [Threshold N-2]

Impact Analysis: The potential vibration impacts resulting from development of the Specific Plan with respect to construction, vehicle flows, and stationary sources are addressed separately below.

Construction Vibration Impacts

Construction operations can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site depends on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to the construction site. Table 5.9-16 lists vibration levels for typical construction equipment.

Table 5.9-16 Vibration Levels for Typical Construction Equipment

Equipment	Approximate Velocity Level at 25 Feet (VdB)	Approximate RMS[1] Velocity at 25 Feet (in/sec)
Pile Driver (impact) Upper Range	112	1.518
Pile Driver (impact) Lower Range	104	0.644
Pile Driver (sonic) Upper Range	105	0.734
Pile Driver (sonic) Lower Range	93	0.170
Large Bulldozer	87	0.089
Caisson Drilling	87	0.089
Jackhammer	79	0.035
Small Bulldozer	58	0.003
Loaded Trucks	86	0.076
FTA Criteria: Human Annoyance (Daytime/Nighttime)	78/72	—
FTA Criteria: Structural Damage	—	0.200

Source: FTA 2006.
[1] RMS velocity calculated from vibration level (VdB) using the reference of 1 microinch/second.

As shown in Table 5.9-16, vibration generated by construction equipment has the potential to be substantial, since it has the potential to exceed the FTA criteria of 78 VdB for human annoyance and 0.200 in/sec for structural damage. However, groundborne vibration is almost never annoying to people who are outdoors, so it is usually evaluated in terms of indoor receivers (FTA 2006). Construction details and equipment for individual development projects are not known at this time. As such, vibration impacts may occur from

construction equipment associated with development of the proposed project and construction vibration impacts are considered potentially significant.

Roadway-Related Vibration Impacts

Operation of new commercial land uses could generate additional truck trips over existing conditions, which could potentially generate various levels of vibration along the traveled roadways. Additionally, truck trips could also be generated during construction of new development projects in the Specific Plan area. Caltrans has studied the effects of vehicle vibration on sensitive land uses and notes that "heavy trucks, and quite frequently buses, generate the highest earthborne vibrations of normal traffic." Caltrans also notes that the highest traffic-generated vibration is along freeways and state routes and finds that "vibrations measured on freeway shoulders (five meters from the centerline of the nearest lane) have never exceeded 0.08 inches per second, with the worst combinations of heavy trucks. This level coincides with the maximum recommended safe level for ruins and ancient monuments (and historic buildings)." Further, trucks do not typically generate high levels of vibration because they travel on rubber wheels and do not have vertical movement, which generates ground vibration (Caltrans 2002). Given these observations and guidance notes from Caltrans, roadways in the Specific Plan area are not expected to generate excessive vibration. Therefore, there would be no impact due to roadway-related vibration.

Other Operations Vibration Impacts

Light industrial and commercial operations can possibly generate varying degrees of ground vibration, depending on the operational procedures and equipment. Such equipment-generated vibrations would spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the vibration source varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels.

Specific project-level information is not available at this time for individual development projects that would be accommodated by the Specific Plan. However, the County of Los Angeles Code, Section 12.08.560, prohibits the operation of any device that creates vibration that is above 0.01 in/sec at or beyond the property boundary of the source, if on private property, or at 150 feet from the source, if on a public space or public right-of-way. Through the enforcement of these code standards, vibration potentially generated by these types of proposed land uses would not result in levels of vibration that would cause annoyance or architectural damage. Therefore, operations-related vibration impacts associated with implementation of the Specific Plan would be less than significant.

Level of Significance before Mitigation: Upon implementation of regulatory requirements, Impact 5.9-3 would be potentially significant.

5.9.5 Cumulative Impacts

Cumulative Operational Noise

To specifically estimate the Specific Plan's contribution to traffic noise, existing noise levels were compared to those projected with buildout of the proposed project. As demonstrated above, the Specific Plan's contribution to increases in ambient noise levels and vibration would be less than significant, even when accounting for traffic increases forecast in the project study area.

Cumulative Construction Noise

Construction activities may occur simultaneously and in close proximity to noise-sensitive receptors, resulting in significant impacts. Even after implementation of Mitigation Measures N-1 and N-2, listed below, impacts due to buildout of the Specific Plan may remain significant. Additionally, it cannot be determined whether other, close-proximity projects will be conducted simultaneously or what the extent of their potential vibration emissions might be, since details of individual development projects in the vicinity of the Specific Plan are currently unknown. Therefore, cumulative impacts related to construction would be potentially significant.

5.9.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.9-2.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.9-1 Construction activities would result in temporary noise increases in the vicinity of the project.
- Impact 5.9-3 Construction activities could potentially result in vibration-induced architectural damage at nearby structures or hardscape features, or could result in vibration-induced annoyance at nearby sensitive receptors.

5.9.7 Mitigation Measures

Impact 5.9-1

N-1 As required by the Los Angeles County Code Section 12.08.430, construction activities are prohibited between the hours of 7 PM and 7 AM on weekdays and Saturdays, or at any time on Sundays or holidays. Construction is also required to comply with the maximum noise levels from mobile equipment specified in Section 12.08.430 (also shown in Table 5.9-6 and Table 5.9-7 of this analysis).

N-2 Prior to the issuance of demolition, grading and/or construction permits, applicants for individual development projects within 500 feet of noise-sensitive receptors (e.g., residences,

hospitals, schools) shall conduct a project-level construction noise analysis to evaluate potential impacts on sensitive receptors. The analysis shall be conducted once the final construction equipment list that will be used for demolition and grading activities is determined. The project-level noise analysis shall be prepared, reviewed, and approved by the County of Los Angeles, City of Los Angeles, and/or City of Carson, as applicable. If the analysis determines that demolition and construction activities would result in an impact to identified noise-sensitive receptors, then specific measures to attenuate the noise impact shall be outlined in the analysis and reviewed and approved by the County. Specific measures may include, but are not limited to, the following best management practices:

- Post a construction site notice near the construction site access point or in an area that is clearly visible to the public. The notice shall include the following: job site address; permit number, name, and phone number of the contractor and owner; dates and duration of construction activities; construction hours allowed; and the County of Los Angeles and construction contractor phone numbers where noise complaints can be reported and logged.
- Consider the installation of temporary sound barriers for construction activities immediately adjacent to occupied noise-sensitive structures.
- Restrict haul routes and construction-related traffic to the least noise-sensitive times of the day.
- Reduce nonessential idling of construction equipment to no more than five minutes.
- Ensure that all construction equipment is monitored and properly maintained in accordance with the manufacturer's recommendations to minimize noise.
- Fit all construction equipment with properly-operating mufflers, air intake silencers, and engine shrouds, no less effective than as originally equipped by the manufacturer, to minimize noise emissions.
- If construction equipment is equipped with back-up alarm shut offs, switch off back-up alarms and replace with human spotters, as feasible.
- Stationary equipment (such as generators and air compressors) and equipment maintenance and staging areas shall be located as far from existing noise-sensitive land uses, as feasible.
- To the extent feasible, use acoustic enclosures, shields, or shrouds for stationary equipment such as compressors and pumps.
- Shut off generators when they are not needed.
- Coordinate deliveries to reduce the potential of trucks waiting to unload and idling for long periods of time.

- Grade surface irregularities on construction sites to prevent potholes from causing vehicular noise.
- Minimize the use of impact devices such as jackhammers, pavement breakers, and hoe rams. Where possible, use concrete crushers or pavement saws rather than hoe rams for tasks such as concrete or asphalt demolition and removal.

The final noise-reduction measures to be implemented shall be determined by the construction-level noise analysis. The final noise-reduction measures shall be included on all construction and building documents and/or construction management plans and submitted for verification to the County of Los Angeles; implemented by the construction contractor through the duration of the construction phase; and discussed at the predemolition, pregrade, and/or preconstruction meetings.

Impact 5.9-3

N-3 Prior to issuance of grading and construction permits, applicants for individual development projects that involve vibration-intensive construction activities—such as pile drivers, jack hammers, and vibratory rollers—within 100 feet of off-site, vibration-sensitive receptors and/or structures,[13] shall prepare and submit to the County of Los Angeles an acoustical study to evaluate potential construction-related vibration damage impacts. The vibration assessment shall be prepared by a qualified acoustical engineer and be based on the Federal Transit Administration (FTA) vibration-induced architectural damage criterion AND vibration annoyance effects. If the acoustical study determines a potential exceedance of the FTA thresholds, measures shall be identified that ensure vibration levels are reduced to below the thresholds. Measures to reduce vibration levels can include use of less-vibration-intensive equipment (e.g., drilled piles and static rollers) and/or construction techniques (e.g., nonexplosive rock blasting and use of hand tools) and preparation of a preconstruction survey report to assess the preconstruction, existing conditions of the potentially affected sensitive receptor or structure. Identified measures shall be included on all construction and building documents and submitted for verification to the County.

5.9.8 Level of Significance After Mitigation

Impact 5.9-1

With implementation of Mitigation Measures N-1 and N-2, construction noise impacts due to construction activities would be reduced to the extent feasible. However, feasible mitigation may not be effective at reducing construction-generated noise received at sensitive receptors to levels below the County Code thresholds throughout all periods of construction and at all receptors. Given the expected noise levels and the length of the construction activities, significant construction noise impacts would remain. Impact 5.9-1 would remain **significant and unavoidable**.

[13] Vibration-sensitive receptors would include, for example, residences, schools, medical facilities, and houses of worship. Vibration-sensitive structures would include, for example, historical buildings, audio/video recording studios,

Impact 5.9-3

With the implementation of Mitigation Measure N-3, which would place limitations on certain equipment and/or their use at certain distances, construction vibration impacts would be reduced to less than significant after mitigation.

5.9.9 References

Beranek, Leo. 1988. *Noise and Vibration Control*. Revised edition. Washington, D.C.: Institute of Noise Control Engineering.

Bies, David A. and Colin H. Hansen. 2009. *Engineering Noise Control: Theory and Practice*. 4th edition. New York: Spon Press.

Bolt, Beranek & Newman. 1987. Noise Control for Buildings and Manufacturing Plants.

California Department of Transportation (Caltrans). 2006. Traffic Noise Analysis Protocol.

———. 2009, November. Technical Noise Supplement ("TeNS"). Prepared by ICF International.

Caltrans Department of Transportation, Noise, Vibration, and Hazardous Waste Management Office. 2004, June. Transportation- and Construction-Induced Vibration Guidance Manual. Prepared by ICF International.

Caltrans Division of Environmental Analysis. 2002, February. Transportation Related Earthborne Vibration (Caltrans Experiences). Technical Advisory, Vibration. TAV-02-01-R9601. Prepared by Rudy Hendricks.

Federal Highway Administration (FHWA). 1978, December. Federal Highway Traffic Noise Prediction Model. United States Department of Transportation Report No. FHWA-RD77-108.

Federal Transit Administration (FTA). 2006, May. Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. US Department of Transportation.

Governor's Office of Planning and Research (GOPR). 2003, October. *State of California General Plan Guidelines*.

Harris, Cyril M. 1998. *Handbook of Acoustical Measurements and Noise Control*. 3rd edition. Woodbury, NY: Acoustical Society of America.

IBI Group. 2017, June 9. West Carson TOD Specific Plan Traffic Impact Study.

US Environmental Protection Agency (USEPA). 1971, December. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. Prepared by Bolt, Beranek & Newman (Cambridge, MA) for the U.S. EPA Office of Noise Abatement and Control. Washington, D.C.

———. 1974, March. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Washington, D.C.: U.S. EPA Office of Noise Abatement and Control.

———1978, November. Protective Noise Levels. EPA 550/9-79-100. (Condensed version of 1971 and 1974 documents.)

This page intentionally left blank.

5.10 POPULATION AND HOUSING

This section of the Draft Environmental Impact Report (DEIR) examines the potential for socioeconomic impacts of the West Carson TOD Specific Plan on the community of West Carson, including changes in population, employment, and demand for housing.

5.10.1 Environmental Setting

5.10.1.1 RELEVANT PROGRAMS AND REGULATIONS

State

California Housing Element Law

California planning and zoning law requires each city and county to adopt a general plan for future growth (California Government Code § 65300). This plan must include a housing element that identifies housing needs for all economic segments and provides opportunities for housing development to meet that need. At the state level, the Housing and Community Development Department (HCD) estimates the relative share of California's projected population growth that would occur in each county based on California Department of Finance population projections and historical growth trends. These figures are compiled by HCD in a Regional Housing Needs Assessment (RHNA) for each region of California. Where there is a regional council of governments, the HCD provides the RHNA to the council. The council of governments then assigns a share of the regional housing need to each of its cities and counties. The process of assigning shares gives cities and counties the opportunity to comment on the proposed allocations. HCD oversees the process to ensure that the council of governments distributes its share of the state's projected housing need.

State law recognizes the vital role local governments play in the supply and affordability of housing. To that end, California Government Code requires that the housing element achieve legislative goals to:

- Identify adequate sites to facilitate and encourage the development, maintenance, and improvement of housing for households of all economic levels, including persons with disabilities.
- Remove, as legally feasible and appropriate, governmental constraints to the production, maintenance, and improvement of housing for persons of all incomes, including those with disabilities.
- Assist in the development of adequate housing to meet the needs of low- and moderate-income households.
- Conserve and improve the condition of housing and neighborhoods, including existing affordable housing. Promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, familial status, or disability.
- Preserve for lower income households the publicly assisted multifamily housing developments in each community.

California housing element laws (California Government Code §§ 65580–65589) require that each city and county identify and analyze existing and projected housing needs within its jurisdiction and prepare goals, policies, and programs to further the development, improvement, and preservation of housing for all economic segments of the community, commensurate with local housing needs.

Regional

Southern California Association of Governments

The Southern California Association of Governments (SCAG) represents Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. It is a regional planning agency and serves as a forum for addressing regional issues concerning transportation, the economy, community development, and the environment.

Regional Transportation Plan/Sustainable Communities Strategy

On April 7, 2016, SCAG adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which places a greater emphasis than ever on sustainability and integrated planning. The 2016–2040 RTP/SCS vision encompasses three principles that collectively are the key to the region's future: mobility, accessibility, and sustainability. The 2016–2040 RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with Senate Bill 375, improve public health, and meet the National Ambient Air Quality Standards.

Local

Los Angeles County Housing Element

The 2014-2021 Housing Element for Los Angeles County was certified by HCD on April 30, 2014. Quantified objectives for construction, preservation, and financial assistance over the 2014 to 2021 planning period are listed in Table 5.10-1, *Quantified Objectives, Los Angeles County Housing Element, 2014–2021*.

Table 5.10-1 Los Angeles County 2014-2021 Housing Element Quantified Objectives (units)

Program	Extremely Low Income (≤30% AMI)	Very Low Income (≤50% AMI)	Lower Income (≤80% AMI)	Moderate Income (≤120% AMI)	Above Moderate Income (>120% AMI)	Total
RHNA	3,927	3,927	4,650	5,060	12,581	30,145
Section 8 Rental Assistance	1,560	2,340	0	0	0	3,900
Family Self-Sufficiency	25	75	0	0	0	100
First 5 LA	560	0	0	0	0	560
New Construction Countywide	175	175	43	0	0	350
Affordable Rental Housing Construction	0	0	*43*	0	0	*43*

Table 5.10-1 Los Angeles County 2014-2021 Housing Element Quantified Objectives (units)

Program	Extremely Low Income (≤30% AMI)	Very Low Income (≤50% AMI)	Lower Income (≤80% AMI)	Moderate Income (≤120% AMI)	Above Moderate Income (>120% AMI)	Total
Homebuyer Assistance	0	200	425	425	0	1,050
Ownership Housing Rehabilitation	1,265	1,050	1,050	0	0	3,365
Public Housing Modernization	972	973	0	0	0	1,945
Preservation of At-Risk Housing	24	662	263	0	0	949
Total	8,508	9,402	6,474	5,485	12,581	42,407

Source: Los Angeles County Housing Element 2014-2021.
Notes: RHNA = Regional Housing Needs Assessment; AMI = adjusted median income
In the absence of income data for extremely low income households, 50% of the very low income units are assumed to be extremely low income.

5.10.1.2 EXISTING CONDITIONS

Population

The following table details population forecasts for the community of West Carson, South Bay Cities Subregion, and County of Los Angeles.

Table 5.10-2 Population Estimates and Forecasts: 2010, 2016, and 2040

Area	Population			Population Change, 2010-2040	Percent Population Change, 2010-2040
	2010[1] [2012][2,3]	2016[4] [2020][2,3]	2040[5]		
West Carson	21,699	[23,133][6]	25,791[7]	4,092	18.9%
South Bay Cities Subregion (unincorporated areas)	[110,363]	[117,655]	131,175	20,812	18.9%
South Bay Cities Subregion (total)	[862,462]	[884,153]	954,797	92,335	10.7%
Los Angeles County (total)	9,818,605	10,241,335	11,514,000	1,695,395	17.3%

1 2010 US Census (USCB 201), unless specified otherwise.
2 SCAG 2014
3 Population forecasts for the South Bay Cities Subregion comprise forecasts for 15 of 16 cities in the subregion (part of the City of Los Angeles within the subregion is omitted) plus unincorporated areas in the subregion.
4 California Department of Finance Estimate, 2016 (CDF 2016), unless specified otherwise.
5 SCAG 2016, unless specified otherwise
6 Estimated using the forecast 6.6 percent growth rate for unincorporated areas in the South Bay Subregion between 2012 and 2020.
7 Estimated using the forecast 18.9 percent growth rate for unincorporated areas in the South Bay Subregion between 2012 and 2040.

West Carson

The population of the community of West Carson in the 2010 US Census was 21,699 (USCB 2016a). The population in the Specific Plan area in 2016 is estimated at 3,879.

South Bay Cities Subregion

The South Bay Cities Subregion is the territory of the South Bay Cities Council of Governments, consisting of all 15 incorporated cities; the communities of Harbor City and San Pedro in the City of Los Angeles; and unincorporated areas in the subregion (see Figure 5.10-1, *South Bay Cities Subregion*). Demographic forecasts for the subregion omit the portions of the City of Los Angeles. The population of the subregion was 862,462 in 2012 and is forecast to increase to 954,797 in 2040, a 10.7 percent increase. The forecast population increase in the unincorporated areas of the subregion—including West Carson—between 2012 and 2040 is approximately 20,812 residents (18.9 percent) (DPW 2016).

Los Angeles County

Los Angeles County had a population of 9,818,605 in 2010 (USCB 2016a). The County's population is forecast to increase to 11.5 million in 2040 (SCAG 2016), a 17.3 percent increase from 2010.

Housing

West Carson

The 2010 US Census estimated approximately 7,426 housing units and 7,166 households in West Carson with a vacancy rate of 3.5 percent (see Table 5.10-3). The occupied units were approximately 76 percent owner occupied and 24 percent renter occupied (USCB 2016a).

In the Specific Plan area, there were an estimated 1,303 housing units and 1,283 households in 2016, with a vacancy rate of 1.6 percent.

South Bay Cities Subregion

The entire South Bay Cities Subregion contained 316,562 housing units and 301,684 households in 2012. The numbers of housing units and households in unincorporated areas of the subregion in 2012 were estimated to be 34,298 and 32,686, respectively.

The number of housing units in the entire subregion is forecast to increase to 356,811 in 2040, and the number of households to 340,047. The corresponding forecasts for unincorporated areas in the subregion for 2040 are 43,666 housing units and 41,614 households (SCAG 2014).

Los Angeles County

According to the 2010 US Census, there were 3,445,076 housing units and 3,241,204 households in Los Angeles County, with a vacancy rate of 5.9 percent (USCB 2016a). The corresponding estimates for 2016 are 3,504,061 housing units and 3,308,022 households, with a vacancy rate of 5.6 percent (CDF 2016).

The number of housing units and households in the County in 2040 is forecast to be approximately 4,180,720 and 3,946,600, respectively (SCAG 2016).

Table 5.10-3 Housing Estimates and Forecasts: 2010, 2016, and 2040

	2010 Census [2012 Estimate][2]	2016 Estimate[1] [2020 Forecast][2]	2040 Forecast[3]	Change, 2010-2040	Percent Change, 2010-2040
Community of West Carson					
Housing Units	7,426	[8,359][4]	9,454[6]	2,028	See footnote 6
Households	7,166	[8,066][5]	9,123[7]	1,957	See footnote 7
Vacancy Rate, percent	3.5	Not available	Not available	Not applicable	Not applicable
South Bay Cities Subregion (unincorporated areas)					
Housing Units	[34,298]	[38,607][8]	43,666[9]	9,368	See footnote 9
Households	[32,686]	[36,793]	41,614	8,746	27.3%
Vacancy Rate, percent	4.7	See footnote 8	See footnote 9	Not applicable	Not applicable
South Bay Cities Subregion (total)					
Housing Units	[316,562]	[330,244][8]	356,811[9]	40,249	See footnote 9
Households	[301,684]	[314,728]	340,047	38,363	12.7%
Vacancy Rate, percent	4.7	See footnote 8	See footnote 9	Not applicable	Not applicable
Los Angeles County (total)					
Housing Units	3,445,076	3,504,061	4,180,720[10]	735,644	21.4%
Households	3,241,204	3,308,022	3,946,600	705,396	21.8%
Vacancy Rate, percent	5.9	5.6	See footnote 10	Not applicable	Not applicable

[1] Source: CDF 2016.
[2] Source: SCAG. 2014.
[3] Source: SCAG 2016.
[4] Pro-rated from 2010 Census count; the 12.6-percent estimated increase in households in the unincorporated areas of the South Bay Cities Subregion between 2012 and 2020; and the 2010 West Carson vacancy rate of 3.5 percent.
[5] Pro-rated from 2010 Census count and the 12.6-percent estimated increase in households in the unincorporated areas of the South Bay Cities Subregion between 2012 and 2020.
[6] Pro-rated from the 2010 Census count; the 27.3-percent estimated increase in households in the unincorporated areas of the South Bay Cities Subregion between 2012 and 2040; and the 2010 West Carson vacancy rate of 3.5 percent.
[7] Pro-rated from the 2010 Census count and the 27.3-percent estimated increase in households in the unincorporated areas of the South Bay Cities Subregion between 2012 and 2040.
[8] Pro-rated from the 2020 households forecast using the 2012 vacancy rate of 4.7 percent in the South Bay Cities Subregion.
[9] Pro-rated from the 2040 households forecast using the 2012 vacancy rate of 4.7 percent in the South Bay Cities Subregion.
[10] Pro-rated from 2040 household forecast using 2016 vacancy rate of 5.6 percent.

Employment

West Carson

In 2014, there were an estimated 5,521 jobs in West Carson, and 10,220 residents were employed (USCB 2016b). Jobs in West Carson and jobs of West Carson residents are classified by industrial sector in Table 5.10-4. There were 1,143 jobs in the Specific Plan area in 2016, based on estimates of employees per square foot of building area prepared for SCAG (Natelson 2001).

Table 5.10-4 West Carson Employment Summary in 2014

Industrial Sectors	Jobs in West Carson		Jobs of West Carson Residents	
	Jobs	Percent of Total Jobs	Jobs	Percent of Total Jobs
Agriculture, mining, and oil and gas extraction	40	0.7%	101	1%
Utilities, construction, and manufacturing	744	13.4%	1,386	13.6%
Wholesale and retail trade; and transportation and warehousing	1,026	18.6%	2,336	22.9%
Information; finance and insurance; real estate	137	2.5%	729	7.1%
Professional, Scientific, and Technical Services	576	10.4%	653	6.4%
Management, administration, and support	655	11.9%	879	8.6%
Educational services	116	2.1%	616	6.0%
Health Care and Social Assistance	1,348	24.4%	1,622	15.9%
Arts, entertainment, and recreation	47	0.9%	178	1.7%
Accommodation and Food Services	677	12.3%	889	8.7%
Other Services and Public Administration	155	2.8%	831	8.1%
Total	5,521	100%	10,220	100%

Source: USCB 2016b.

Project Site

Estimated employment onsite is 1,143, as shown in Table 5.10-5.

Table 5.10-5 Current Estimated Employment in Specific Plan Area

Land Use	Unit/Square Feet	Quantity[1]	Square Feet per Employee[2]	Employees
Commercial	SF	255,902	836	306
Office	SF	146,510	487	301
Industrial	SF	553,923	1,040	533
Total				1,143

[1] Land use types and quantities are from the wastewater generation estimate (Table 1-3) in the Environmental Assessment included as Appendix J to this DEIR.
[2] Source: Natelson 2001. The employment density factor used for commercial use is Other Retail/Services, and the factor used for office use is Low-Rise Office.

South Bay Cities Subregion

There were 378,399 jobs in the South Bay Cities Subregion in 2012 (SCAG 2014).

Los Angeles County

There were 3,868,109 jobs, and 3,645,350 workers in Los Angeles County in 2014 (USCB 2016b). The unemployment rate in Los Angeles County in December 2016 (seasonally adjusted) was estimated at 5.0 percent (EDD 2017).

Employment Forecasts

Employment in West Carson is estimated to increase by about 469 jobs, or 8.5 percent, between 2014 and 2040 based on the forecast percentage increase in employment in the unincorporated areas of the South Bay Cities Subregion during that time. Note that forecast employment growth in the South Bay Cities Subregion over the same period, 16.4 percent, is about twice the forecast rate for the unincorporated areas of the subregion, and growth for Los Angeles County, 35 percent, is about four times the estimated proportional employment growth in West Carson (see Table 5.10-6).

Table 5.10-6 Employment Forecasts

	2014[1] [2012 Estimate][3]	2040 Forecast[2]	Change, 2014-2040	Percent Change, 2010-2040
West Carson	5,521	5,990[4]	469	8.5%
South Bay Cities Subregion (unincorporated areas)	[18,235]	19,785	1,550	8.5%
South Bay Cities Subregion (total)	[378,399]	440,469	62,070	16.4%
Los Angeles County (total)	3,868,109	5,226,000	1,357,891	35.1%

[1] Source: USCB 2016b.
[2] Source: SCAG 2016.
[3] South Bay Cities Subregion estimates from SCAG 2014. South Bay Cities Subregion estimates omit the part of the City of Los Angeles in the subregion.
[4] Pro-rated from 2012 employment estimate using the 8.5 percent estimated increase in employment in the unincorporated areas of the South Bay Subregion between 2012 and 2040.

Jobs-Housing Balance

The jobs-housing ratio is a general measure of the total number of jobs and housing units in a defined geographic area, without regard to economic constraints or individual preferences. The balance of jobs and housing in an area—total numbers of jobs and housing units as well as the types of jobs versus the price of housing—has implications for mobility, air quality, and the distribution of tax revenues. The jobs-housing ratio is one indicator of a project's effect on growth and quality of life in the project area.

SCAG applies the jobs-housing ratio at the regional and subregional levels to analyze the fit between jobs, housing, and infrastructure. A major focus of SCAG's regional planning efforts has been to improve this balance.

Jobs-housing goals and ratios are advisory only. No ideal jobs-housing ratio is adopted in state, regional, or city policies. The American Planning Association (APA) is an authoritative resource for community planning best practices, including recommendations for assessing jobs-housing ratios. Although the APA recognizes that an ideal jobs-housing ratio will vary from jurisdiction to jurisdiction, its recommended target for an appropriate jobs-housing ratio is 1.5, with a recommended range of 1.3 to 1.7 (Weltz 2003).

Jobs-housing balance applies to regions and not to small geographic areas and/or small populations. The jobs-housing balance for the South Bay Cities Subregion in 2012 was 1.25 and is forecast to be 1.30 in 2040 (SCAG 2014) (see Table 5.10-7).

Table 5.10-7 South Bay Cities Subregion Jobs-Housing Balance

	2012	2040
Jobs	378,399	440,469
Households	301,684	340,047
Jobs-Housing Balance	1.25	1.30

Source: SCAG 2014.

5.10.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

P-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).

P-2 Displace substantial numbers of existing housing, especially affordable housing, necessitating the construction of replacement housing elsewhere.

P-3 Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

P-4 Cumulatively exceed official regional or local population projections.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold P-2
- Threshold P-3

These impacts will not be addressed in the following analysis.

5.10.3 Plans, Programs, and Policies

No project design features or regulatory requirements are applicable to population and housing.

5.10.4 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.10-1: The proposed project would directly result in population growth in the project area. [Thresholds P-1 and P-4]

Impact Analysis: Table 5.10-8 summarizes existing conditions and project buildout population and housing units in the Specific Plan area.

Table 5.10-8 West Carson TOD Specific Plan Buildout Population and Housing

Proposed Zoning District	Project Buildout		Existing Conditions		Net Increase	
	Total Units	Population	Total Units	Population	Total Units	Population
West Carson Residential 1	851	2,215	955	2,895	-104	-680
West Carson Residential 3	171	498	87	242	84	256
West Carson Residential 4	484	1,411	116	322	368	1,089
Residential Planned Development	88	228	37	113	51	115
Neighborhood Commercial	—	—	—	—	—	—
Unlimited Commercial	30	87	—	—	30	87
Harbor-UCLA Medical	100	—	—	—	100	—
Industrial Flex	486	1,417	15	42	471	1,375
Mixed Use 1	143	416	30	84	113	332
Mixed Use 2	1,223	3,568	63	180	1,160	3,388
Public Zone	—	—	—	—	—	—
Total	3,574	9,840	1,303	3,879	2,271	5,961

Population Growth

Specific Plan buildout would involve development of up to 2,271 housing units and introduce approximately 5,961 residents (see Table 5.10-7). As noted above, the unincorporated area of the South Bay Cities Subregion is expected to grow by 20,812 persons by 2040. The estimated population growth due to buildout of the Specific Plan is approximately 5,961 people. Therefore, population growth associated with the proposed project represents approximately 28 percent of the growth projected for the unincorporated portion of the subregion. Therefore, the proposed project is consistent with the growth projections for the South Bay Cities Subregion.

Housing

Specific Plan buildout would involve development of approximately 2,271 additional housing units (see Table 5.10-7). As noted above, the unincorporated area of the South Bay Cities Subregion is expected to grow by 9,368 housing units by 2040. Therefore, housing growth associated with the proposed project represents approximately 24 percent of the growth projected for the unincorporated portion of the subregion. Therefore, the proposed project is consistent with the growth projections for the South Bay Cities Subregion.

Employment

In 2014, employment in the Specific Plan area was approximately 2,653 jobs (USCB 2017). At Specific Plan buildout, employment on-site is estimated at about 4,195 jobs, as shown in Table 5.10-9. Regional forecasts estimate the increase in employment in the unincorporated portion of the South Bay Cities Subregion to be 1,550 jobs by 2040, or approximately 8.5 percent. Thus, project employment impacts would be substantially higher than regional forecasts.

West Carson is envisioned as a regional job center with available infrastructure for growth and would facilitate future job growth at strategic points along the commuter rail, transit systems, and freeway corridors. These regional growth implications are consistent with SCAG's RTP/SCS strategies in compliance with SB 375. In addition, Table 5.10-10 demonstrates that the subregion's jobs/housing ratio is balanced with the rate ranging from 1.25 in 2014 to 1.3 in 2040 with or without the proposed project. Therefore, although the Proposed Project would result in direct and indirect growth in the area, the proposed project would be consistent with SCAG's growth management policies that aim to better coordinate infrastructure development with projected population, housing, and employment growth. In addition, the proposed project would improve the jobs/housing balance of the subregion consistent with APA's recommended jobs/housing ratio. Therefore, no significant impact is anticipated.

Table 5.10-9 Estimated Employment at Specific Plan Buildout

Land Use	Unit/Square Feet	Quantity[1]	Square Feet per Employee[2]	Employees
Commercial	SF	754,294	836	902
Office	SF	1,335,075	487	2,741
Industrial	SF	571,951	1,040	550
Total				4,195
Less existing employment onsite				1,143
Net Increase				3,052

[1] Land use types and quantities are from the wastewater generation estimate (Table 1-3) in the Environmental Assessment included as Appendix J to this DEIR.
[2] Source: Natelson 2001. The employment density factor used for commercial use is Other Retail/Services, and the factor used for office use is Low-Rise Office.

Jobs-Housing Balance

West Carson is too small an area for jobs-housing balance to be meaningful. Thus, the area analyzed for project impacts to jobs-housing balance is the South Bay Subregion. The jobs-housing balance in the specified area was 1.25, that is, slightly housing-rich, in 2012 and is forecast to increase slightly to 1.30 by 2040. Specific Plan buildout would not change the estimated jobs-housing balance in the South Bay Subregion in 2040, as shown in Table 5.10-10. No adverse impact on jobs-housing balance would occur.

Table 5.10-10 South Bay Subregion Cumulative Jobs-Housing Balance Impacts

	Existing Conditions (2014)	2040	Specific Plan Buildout Net Increases	South Bay Subregion 2040 plus Specific Plan Buildout
Jobs	378,399	440,469	3,052	443,521
Households	301,684	340,047	2,191[1]	342,238
Jobs-Housing Balance	1.25	1.30	Not applicable	1.30

Source: LA County 2014.
[1] Based on net increase of 2,271 housing units and a 3.5 percent vacancy rate in West Carson obtained from the 2010 US Census.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.10-1 would be less than significant.

5.10.5 Cumulative Impacts

The area analyzed for cumulative population and housing impacts is the South Bay Subregion. Net changes projected for this area between 2012 and 2040 by SCAG are shown below in Table 5.10-11. Other projects would be required to comply with applicable land use policies governing regional growth.

Buildout of the Harbor-UCLA Medical Center Campus Master Plan would increase the number of beds from the 373 existing beds to 446, a net increase of 73 beds. The ratio of staff to beds at general acute-care hospitals in California is 5.09 full-time-equivalent staff per bed (CHCF 2015). Thus, Master Plan buildout is estimated to increase employment through hospital expansion by about 372 jobs.

The forecast increases in population and dwelling units from Specific Plan buildout—2,271 units and 5,961 persons, respectively—are within the estimated net changes due to General Plan buildout; thus, project population and housing impacts would not be cumulatively considerable. The forecast increase in employment due to Specific Plan buildout, 3,052 jobs, is also within the estimated net change due to General Plan buildout; therefore, project employment impact would not be cumulatively considerable.

Table 5.10-11 South Bay Subregion Projections

	Existing Conditions (2012)	2040	Net Change
Households	316,562	356,811	40,249
Population	862,462	954,797	92,335
Employment	378,399	440,469	62,070
Jobs-Housing Balance	1.25	1.30	+0.05

Source: SCAG 2014.
[1] Numbers of households is estimated based on estimated/forecast dwelling units and the estimated 4.7 percent vacancy rate in 2012 in the South Bay Cities Subregion.

Jobs-Housing Balance

The jobs-housing impact analysis above in Section 5.10.4 is cumulative; no adverse impact would occur.

5.10.6 Level of Significance Before Mitigation

The following impacts would be less than significant: 5.10-1.

5.10.7 Mitigation Measures

No mitigation measures are required.

5.10.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.10.9 References

California Department of Finance (CDF). 2016, May. E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011– 2016. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/documents/E-5_2016_InternetVersion.xls.

California Healthcare Foundation (CHCF). 2015, August. California Health Care Almanac. http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/PDF%20C/PDF%20CaliforniaHospitals2015.pdf.

Employment Development Department (EDD). 2017, January 27. Labor Force and Unemployment Rate for California Counties. https://data.edd.ca.gov/Labor-Force-and-Unemployment-Rates/Labor-Force-and-Unemployment-Rate-for-California-C/r8rw-9pxx.

Los Angeles County. 2014, April 30. Los Angeles County Housing Element 2014-2021.

———. 2015, October 6. Planning Areas Framework. Chapter 5 in Los Angeles County General Plan. http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch5.pdf.

Natelson Company, The. 2001, October 31. Employment Density Study Summary Report. http://www.scag.ca.gov/pdfs/Employment_Density_Study.pdf.

Southern California Association of Governments (SCAG). 2012, April 19. Integrated Growth Forecast. http://www.scag.ca.gov/forecast/index.htm.

———. 2014, April 21. Regional Planning & Local Perspectives: Economic and Demographic Trends for the City of Hermosa Beach. http://hermosabeach.granicus.com/MetaViewer.php?view_id=6&clip_id=3027&meta_id=148821.

———. 2016, April 7. 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

U.S. Census Bureau (USCB). 2016a, November 15. Interactive Population Map. http://www.census.gov/2010census/popmap/.

———. 2016b, November 16. Longitudinal Employer-Household Dynamics (LEHD). OnTheMap. http://onthemap.ces.census.gov/.

———. 2017, January 27. Longitudinal Employer-Household Dynamics (LEHD). OnTheMap. http://onthemap.ces.census.gov/.

Weltz, Jerry. 2003. Jobs-Housing Balance. Planning Advisory Service Report Number 516. American Planning Association.

5. Environmental Analysis
POPULATION AND HOUSING

This page intentionally left blank.

5.11 PUBLIC SERVICES

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the West Carson TOD Specific Plan to impact public services providing fire protection and emergency services, police protection, school services, and library services in the Community of West Carson. Park services are addressed in Section 5.12, *Recreation*, and public and private utilities and service systems, including water, wastewater, and solid waste services and systems, are addressed in Section 5.15, *Utilities and Service Systems*. Responses to service provider letters for fire and emergency services, police, and library services are included in Appendix I of this DEIR.

The Initial Study, included as Appendix A, substantiates that impacts associated with health care facilities would be less than significant. This topic is not addressed in the following analysis.

5.11.1 Fire Protection and Emergency Services

5.11.1.1 ENVIRONMENTAL SETTING

Relevant Programs and Regulations

State

California Fire Code

The California Fire Code (CFC) comprises Part 9 of Title 24 of the California Code of Regulations. The CFC is updated on a three-year cycle; the 2016 CFC took effect on January 1, 2017. Fire flow requirements are in CFC Appendix B, Table B105.1. Fire hydrant location and distribution requirements are in CFC Appendix C.

California Building Code

The California Building Code comprises Title 24, California Code of Regulations, Part 2. The CBC is updated on the same cycle as the CFC. Hospitals are classified by the CBC as essential facilities, defined as "Buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow or earthquakes."

Existing Conditions

Fire Stations, Firefighting Apparatus, and Staffing

The Los Angeles County Fire Department (LACoFD) provides fire protection and emergency medical services to the project site. The nearest LACoFD station to the project site is Fire Station #36 at 127 West 223rd Street in the City of Carson, about 0.6 mile east of the southeast corner of the project site. The entire project site is within the first-in jurisdiction of Fire Station #36. The second-in station for the north part of the Specific Plan area is Fire Station #116 at 755 East Victoria Street in Carson, about 1.4 miles east of West Carson. The second-in station for the south part of the site is Fire Station #127 at 2049 E. 223rd Street in

the City of Carson, approximately 3.5 miles east of the Specific Plan area. LACoFD participates in the California Fire Service and Rescue Emergency Mutual Aid System (Vidales 2017).

Table 5.11-1 Fire Stations Serving the Project Site

Station and Address	Equipment	Daily Staffing
Fire Station #36 127 W. 223rd Street, Carson	2 fire engines (4 persons each) 1 paramedic truck (2 persons)	2 captains, 2 firefighter specialists; 2 firefighter paramedics; 4 firefighters
Fire Station #116 755 E. Victoria Street, Carson	1 fire truck (4 persons) 1 fire engine (3 persons) 1 paramedic truck (2 persons)	2 captains, 2 firefighter specialists; 3 firefighter paramedics; 2 firefighters
Fire Station #127 2049 E. 223rd Street, Carson	1 quint (combination engine/ladder truck) (4 persons) 1 fire engine (2 persons)	1 captain, 2 firefighter specialists, 3 firefighters

Source: Vidales 2017.

Need for Additional Station

The City of Carson and the neighboring unincorporated area have experienced substantial growth in recent years. Several significant development projects and planned projects in the city coupled with the growth have created a need for an additional fire protection facility on the west side of the city (Vidales 2017). LACoFD is negotiating with the City regarding a site for the new station; the City has identified a site next to the intersection of Main Street and Torrance Boulevard about 0.4 mile east of the northeast corner of the project site. Funding sources for the station would include property taxes, charges for services, the LACoFD Special Tax, and City of Carson development impact fees (Buck 2017).

The LACoFD and the City of Carson are in ongoing negotiations to address the funding needed to purchase land and construction of the needed fire station; the specific funding source is to be determined (Vidales 2017).

Response Times

LACoFD's response time goals in urban areas are five minutes or less for the first responding unit for fire and emergency medical responses, and eight minutes or less for the advanced life support (paramedic) unit.

During 2016, Fire Station #36 had an average emergency response time of 4:41 minutes, Fire Station #116 had an average emergency response time of 4:54 minutes, and Fire Station #127 had an average emergency response time of 5:14 minutes (Vidales 2017).

Additionally, Harbor-UCLA Medical Center is a Level 1 Trauma Center and can provide total emergency care for every aspect of injury—from prevention through rehabilitation. The medical center is one of five such trauma centers in Los Angeles County (ATS 2017; DHS 2017).

Funding

The majority of the LACoFD's operational budget is funded by property taxes and charges for services. LACoFD charges a special tax added to annual property tax bills.[1]

The City of Carson is in the process of developing and adopting development impact fees for new developments. The City will use the proceeds from the development impact fees to pay for capital improvements required to accommodate new development. Improvements funded by such fees by other cities include, but are not limited to, police, fire, libraries, streets, sidewalks, bikeways, parkway and median landscaping, sewer, and recycled water (Carson 2016b).

5.11.1.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

FP-1 Result in a substantial adverse physical impact associated with the provisions 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 services.

5.11.1.3 PLANS, PROGRAMS, AND POLICIES

Regulatory Requirements

RR PS-1 The proposed project will be designed and constructed in accordance with the County of Los Angeles Fire Code (Los Angeles County Code, Title 32), which incorporates by adoption the 2016 California Fire Code, and the regulations of the Los Angeles County Fire Department, which include standards for building construction that would reduce the creation of fire hazards and facilitate emergency response.

5.11.1.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

[1] Special Tax rates per parcel for 2016-17 include:
Single-family residential: $65.08
Multi-family residential, 3 stories or less: $82.20 per unit + 0.0083 per square foot over 1,555 square feet
Commercial/Industrial, 3 stories or less: $78.76 + 0.053 per square foot over 1,555 square feet
Four stories or higher (most land uses): $95.87 + 0.0648 per square foot over 1,555 square feet (LACoFD 2017).

Impact 5.11-1: The proposed project would introduce approximately 2,271 additional homes, 5,961 additional residents, and 1.7 million additional square feet of nonresidential uses into the Los Angeles County Fire Department's service boundaries, thereby increasing the requirement for fire protection facilities and personnel. [Threshold FP-1]

Impact Analysis: Buildout of the West Carson TOD Specific Plan would increase demand on fire protection and emergency services in West Carson. The increase in residential and nonresidential development is expected to create the typical range of fire and emergency service calls and may lead to the need for new or expanded fire stations, additional equipment, and additional personnel in order to maintain adequate response times.

As stated above, LACoFD's response time goal in urban areas is five minutes or less for first responding units for fire and emergency medical responses. The entire project site is within the first-in jurisdiction of Fire Station #36. During 2016, Fire Station #36 had an average emergency response time of 4:41 minutes, surpassing LACoFD's response time goal (Vidales 2017).

LACoFD has already determined a need for an additional fire station on the west side of the City of Carson to meet the existing demand for fire services. LACoFD is negotiating with the City regarding a site for the new station; the City has identified a site next to the intersection of Main Street and Torrance Boulevard about 0.4 mile east of the northeast corner of the project site. Funding sources for the station would include property taxes, charges for services, the LACoFD Special Tax, and City of Carson development impact fees (Buck 2017). The planned fire station would be needed to mitigate the impact new development will have on fire protection and emergency medical services (Vidales 2017).

Development in accordance with the Specific Plan would also contribute toward the growing demand for fire services in West Carson. However, the anticipated increase in development would also increase LACoFD's operational budget, which is mostly funded by property tax and charges for services.

Additionally, during the County's development review and permitting process, LACoFD would review and approve individual development projects to ensure that adequate facilities, infrastructure, and access are provided to serve the needs of LACoFD. Specific fire and life-safety requirements for the construction phase of future development projects that would be accommodated under the West Carson TOD Specific Plan would be addressed at the building and fire plan check review stage for each development project.

All development projects would also be required to comply with the most current adopted fire codes, building codes, and nationally recognized fire and life safety standards of Los Angeles County and the State of California per regulatory requirement RR PS-1.

Level of Significance before Mitigation: Upon implementation of regulatory requirement RR PS-1, Impact 5.11-1 would be potentially significant.

5.11.1.5 CUMULATIVE IMPACTS

LACoFD serves 58 cities in addition to unincorporated areas of the County. The department's service area is divided into 22 battalions organized into 9 divisions. The area considered for cumulative impacts is

LACoFD's Division 1, consisting of Battalions 7, 14, and 18, which serves 9 incorporated cities and all unincorporated areas in a region west of the I-710 and almost entirely south of the I-105, plus Santa Catalina Island (LACoFD 2012).

Future cumulative projects in the service area of Division 1 would increase residential and nonresidential uses in accordance with the County General Plan, thus increasing demands for fire protection and emergency medical services. Such demands would create needs for additional equipment and staffing and could require construction of new or expanded fire stations. Increased property and sales tax from future new developments would increase the County's General Funds in rough proportions, providing funding for capital improvements necessary to maintain adequate fire protection facilities, equipment, and/or personnel. By maintaining a consistent level of service through expansion or facility improvements, LACoFD would be able to ensure that its performance objectives are consistently met. Furthermore, as with the proposed Specific Plan, individual development projects pursuant to the County's General Plan would be reviewed by the County and LACoFD and would be required to comply with the requirements in effect at the time building permits are issued, including the payment of developer impact fees. Regulatory requirement RR PS-1 also applies to future projects and would ensure projects are designed and constructed in accordance with the County of Los Angeles Fire Code (Los Angeles County Code, Title 32), which incorporates by adoption the 2016 California Fire Code, and the regulations of the LACoFD, which include standards for building construction that would reduce the creation of fire hazards and facilitate emergency response.

Thus, the proposed project's increased demand for fire protection services, in conjunction with the increased demand for cumulative development pursuant to the County's General Plan, would not result in significant cumulative impacts.

5.11.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements, the following impacts would be **potentially significant:**

- **Impact 5.11-1** Project buildout would generate increased demands for fire protection and emergency medical services in LACoFD's service area.

5.11.1.7 MITIGATION MEASURES

Impact 5.11-1

PS-1 On-going throughout implementation of the Specific Plan, the County shall coordinate with LACoFD to ensure that LACoFD facilities are adequate to maintain satisfactory response times within the Specific Plan area.

PS-2 Each subdivision map shall comply with the applicable County Fire Code requirements for fire apparatus access roads, fire flows, and fire hydrants. Final fire flows shall be determined by LACoFD in accordance with Appendix B of the County Fire Code. The required fire apparatus road and water requirements shall be in place prior to construction.

5.11.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.11.2 Police Protection

5.11.2.1 ENVIRONMENTAL SETTING

Existing Conditions

The Los Angeles County Sheriff's Department (LASD) provides police services to West Carson, including the project site. Three LASD units serve the project site: Patrol Operations Carson Station; County Services Bureau serves Harbor-UCLA Medical Center and has a station there; and Transit Bureau South (TBS), which patrols the Carson Silver Line station and Metro buses in the project region.

Questionnaire responses were received from all three LASD units. Note that after the service letter was sent, the project description was clarified to delete the planned expansion of Harbor-UCLA Medical Center from the proposed project, although it is still a related project and evaluated respecting cumulative impacts. Therefore, the response from the County Services Bureau is only discussed below regarding cumulative impacts analysis.

Patrol Operations West Carson Station

Sheriff's patrol deputies serving West Carson are based at LASD's Carson Station at 21356 South Avalon Boulevard in the City of Carson, about 1.4 miles east of the project site. The Carson Station also serves the unincorporated Community of Rancho Dominguez and the City of Carson. Staffing at the Carson Station consists of 157 sworn deputies and 35 civilian positions. Patrol staffing serving West Carson consists of 10 ten-hour shifts daily. Patrol staffing based from the Carson Station has remained steady for the last decade, and staffing for the unincorporated areas has decreased somewhat during the same period due to funding constraints. Captain Jason Skeen of the Carson Station has expressed interest in adding one additional 56-hour patrol unit—that is, 1.6 full-time deputies—to the existing unincorporated patrol areas due to increasing calls for service, crime, and population growth. Such increase in staffing would require acquisition of one additional patrol vehicle. No funding source for such increased staffing has been identified.

During 2016 Carson Station staff responded to 6,530 service calls consisting of 518 emergency calls, 1,197 priority calls, and 4,815 routine calls. There were 793 Part 1 crimes reported in the unincorporated areas within the Carson Station's service area—that is, West Carson and Rancho Dominguez—during the six-year period 2011 to 2016; 96 of these were violent crimes and the balance property crimes (Skeen 2017).

Response Times

Response time goals and actual response times for Carson Station deputies are listed in Table 5.11-2.

Table 5.11-2 LASD Carson Station Response Times: Goals and Actual, 2016

Category	Goal, Minutes	Actual Average, Minutes
Emergency	3	4.1
Priority	7	7.5
Routine	30	28.1

Source: Skeen 2017.

Transit Bureau South

The Transit Bureau provides law enforcement on Metropolitan Transportation Authority of Los Angeles County (Metro) trains and buses. Transit Bureau South (TBS) provides such service on the part of Metro's network of train and bus lines south of downtown Los Angeles. TBS operations are based at three facilities; the two facilities closer to the Specific Plan area are at a Metro facility in the southwest part of the City of Los Angeles and at the Willowbrook/Rosa Parks Station of the Metro Blue Line and Green Line light rail lines in the community of Willowbrook in unincorporated Los Angeles County. The Specific Plan area, including the Silver Line Carson Station, is in two TBS reporting districts. There were no reported transit-related crimes in those two reporting districts in 2016 (Schow 2017). On February 23, 2017, the Metro Board of Directors voted to divide policing on Metro buses and trains between three police agencies—the LASD, Los Angeles Police Department, and Long Beach Police Department (Metro 2017).

Mutual Aid

Los Angeles County has mutual aid agreements with nearby cities including Los Angeles, Torrance, and Gardena. The Los Angeles County Sheriff is the mutual aid coordinator for the Los Angeles County Operational Area (Skeen 2017).

Funding

Patrol operations in unincorporated areas of Los Angeles County are mostly funded through State Proposition 172 public safety funds, which in turn are financed by a 0.5-cent state sales tax (County 2016). Patrol operations in the City of Carson are funded from the City's General Fund, slightly over half of which is funded by sales and property taxes (Carson 2016a).

5.11.2.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

PP-1 Result in a substantial adverse physical impact associated with the provisions 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 services.

5.11.2.3 PLANS, PROGRAMS, AND POLICIES

Regulatory Requirements

No regulatory requirements apply to police protection.

5.11.2.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.11-2: The proposed project would introduce approximately 2,270 additional homes, 5,961 additional residents, and 1.7 million additional square feet of nonresidential uses into the Los Angeles County Sheriff Department's service boundaries, thereby increasing the requirement for police protection facilities and personnel. [Threshold PP-1]

Impact Analysis:

Patrol Operations

Project buildout would involve development of a net increase of about 2,270 homes that would house about 5,961 residents and development of a net increase of up to about 1.7 million square feet of nonresidential building area and approximately 3,054 workers. Thus, project buildout would cause an increase in demands for law enforcement services. Buildout is expected to cause increased numbers of service calls, a rise in crime, additional vehicle collisions, and increased response times.

The Sheriff's Department would need six additional full-time deputies and three additional patrol vehicles to maintain the generally-accepted law enforcement service ratio objective of one deputy per 1,000 residents (Skeen 2017). In addition, Captain Jason Skeen of the Carson Station has expressed interest in adding one additional 56-hour patrol unit—that is, 1.6 full-time deputies—to the existing unincorporated patrol areas due to increasing calls for service, crime, and population growth. Such increase in staffing would require acquisition of one additional patrol vehicle.

Operational funding for the LASD is derived from various types of tax revenue (property taxes, sales taxes, user taxes, vehicle license fees, deed transfer fees, etc.), which are deposited in the County's General Fund. The County Board of Supervisors then allocates the revenue for various County-provided public services, including Sheriff's services. As future development occurs, tax revenues from property and sales taxes would be generated and deposited in the County's General Fund and the State Treasury. A portion of these revenues would be allocated to the LASD during the County's annual budget process to maintain staffing and equipment levels to adequately serve project-related increases in service-call demands.

Transit Bureau South

Project buildout would involve relocating the Carson Metro Station out from under the Carson Street overpass to a new location along the I-110. Project buildout would not affect TBS operations and no impact would occur.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.11-2 would be less than significant.

5.11.2.5 CUMULATIVE IMPACTS

The Los Angeles County Sheriff Department's patrol operations are based from 23 patrol stations organized in four divisions. The area considered for cumulative impacts is the South Patrol Division, which extends from the Palos Verdes Hills northeast to Pico Rivera and the southeast County boundary. The South Patrol Division operates out of six stations—from southwest to northeast: Lomita, Carson, Lakewood, Cerritos, Norwalk, and Pico Rivera. The South Patrol Division provides patrol services in 14 incorporated cities as well as all unincorporated areas in the division's service area (LASD 2014, 2017). Other projects in the division's service area would develop increased numbers of residential units and nonresidential building area, thus increasing demands for police protection. Other projects would generate additional funding available for LASD operations, including Proposition 172 public safety funds and sales and property taxes.

5.11.2.6 EXISTING REGULATIONS AND STANDARD CONDITIONS

State

- Proposition 172: Local Public Safety Protection and Improvement Act of 1993

5.11.2.7 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, Impact 5.11-2 would be less than significant.

5.11.2.8 MITIGATION MEASURES

No mitigation measures are required.

5.11.2.9 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.11.3 School Services

5.11.3.1 ENVIRONMENTAL SETTING

Relevant Programs and Regulations

State

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 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 due to development and related population increases. The funding goes to acquiring school sites, constructing new school facilities, and modernizing existing school facilities. SB 50 establishes a process for determining the amount of fees developers would be charged to mitigate the impact of development 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 costs of accommodating students in new schools, and the state provides the remaining half. To qualify for Level II fees, the governing board of the 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 school facility or mitigation, minus any local dedicated school monies, on the developer.

Existing Conditions

The Los Angeles Unified School District (LAUSD) provides public K-12 education for the Specific Plan area. LAUSD schools with attendance boundaries overlapping the Specific Plan area are described in Table 5.11-3.

Table 5.11-3 LAUSD Schools Serving the Project Site

School, (Grade Levels), and Address	Enrollment (2016-17)	Capacity
Elementary Schools		
Van Deene Elementary School (K-6) 826 Javelin Street, West Carson	347	379
Halldale Elementary School (K-5) 21514 Halldale Avenue, Torrance	499	561
Meyler Elementary School (K-5) 1123 West 223rd Street, West Carson	764	801
Total	1,610	1,741
Middle Schools		
White Middle School (6-8) 22102 South Figueroa Street, Carson	1,476	1,676
High Schools		
Carson High School (9-12) 22328 South Main Street, Carson	1,441	2,817
Academies of Education and Empowerment at Carson High School 22328 South Main Street, Carson	562	
Academy of Medical Arts at Carson High School 22328 South Main Street, Carson	498	
Subtotal, programs on Carson High School campus	2,501	
Narbonne High School (9-12) 24300 South Western Avenue, Harbor City	1,960	3,145
Humanities and Arts Academy of Los Angeles at Narbonne High School 24300 South Western Avenue, Harbor City	480	
Subtotal, programs on Narbonne High School campus	2,440	
Total	4,941	5,962

Source: Perez 2017

SB 50 Fees

LAUSD currently charges Level I developer fees under SB 50 of $3.48 per square foot for residential units (single-family and multi-family) and $0.56 per square foot for commercial and industrial uses.

5.11.3.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

SS-1 Result in a substantial adverse physical impact associated with the provisions 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 school services.

5.11.3.3 PLANS, PROGRAMS, AND POLICIES

RR PS-2 Pursuant to California Government Code Section 65995, the individual applicants shall pay developer fees to the appropriate school districts at the time building permits are issued; payment of the adopted fees would provide full and complete mitigation of school impacts. Alternatively, the applicant may enter into a school finance agreement with the school district(s) to address mitigation to school impacts in lieu of payment of developer fees. The agreement shall establish financing mechanisms for funding facilities to serve the students from the project. If the applicant and the affected school district(s) do not reach a mutually satisfying agreement, then project impacts would be subject to developer fees.

5.11.3.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.11-3: The proposed project would generate new students who would impact the school enrollment capacities of area schools. [Threshold SS-1]

Impact Analysis: Student generation factors for LAUSD were obtained from the City of Los Angeles CEQA Thresholds Guide (2006). Project buildout is estimated to generate a net increase of about 891 students consisting of 437 elementary school students, 188 middle school students, and 265 high school students, as shown below in Table 5.11-4.

White Middle School has residual capacity for 200 students, sufficient to accommodate the estimated generation of 188 middle school students. The two high schools serving the project site have total residual capacity of 1,021 students, enough for estimated generation of 265 high school students.

The three elementary schools serving the project site have total residual capacity of 131 students, less than the estimated student generation of 437 students.

Projects developed under the Specific Plan would pay SB 50 school impact fees to the LAUSD; such fees are defined as full and complete mitigation for the impact of development projects on school facilities.

Table 5.11-4 Estimated Project Student Generation, Students per Household

Housing Unit Type	Net Increase, Housing Units	Elementary School (K-5) Student Generation[1,2]		Middle School (6-8) Student Generation		High School (9-12) Student Generation		Total Student Generation	
		per Household	Total	per Household	Total	per Household	total	per Household	total
Single-Family[3]	-193	0.43	-83	0.25	-48	0.34	-66	1.02	-197
Apartment[4,5]	2,364	0.22	520	0.10	236	0.14	331	0.46	1,087
Total	2,171	NA	437	NA	188	NA	265	NA	891

[1] All student generation factors are from the City of Los Angeles CEQA Thresholds Guide (2006).
[2] Student generation factors for all housing unit types are for middle-income areas. The median household income for West Carson in 2010 was $64,613, while the median household income in the Los Angeles Unified School District in 2008 was $48,292 (USCB 2017).
[3] Single-family student generation factors are for 3+-bedroom units.
[4] Student generation factors for apartments are higher than factors for attached single-family units (townhomes and condominiums) and are thus used here for all 3 unit types as a conservative measure.
[5] Apartment student generation factors are for 2-bedroom units.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.11-3 would be less than significant.

5.11.3.5 CUMULATIVE IMPACTS

The LAUSD is organized into six Local Districts. The area considered for cumulative impacts is LAUSD's Local District South, which extends from the community of San Pedro in the City of Los Angeles at the Pacific Ocean north to Slauson Avenue in the community of South Los Angeles in the City of Los Angeles and the unincorporated community of Florence. The South District consists of 148 schools (LAUSD 2017, 2016).

LAUSD districtwide enrollment is forecast to decrease about 2 percent—that is, from about 650,000 to about 637,000—between 2014 and 2024 (LAUSD 2014). Enrollment forecasts for the South District are not available. However, the South Bay Cities Subregion of Los Angeles County, which contains most of the South District, is forecast to increase in population by 18.9 percent between 2010 and 2040, only slightly faster than Los Angeles County, which is forecast to increase by 17.3 percent over the same period (see Section 5.10, *Population and Housing,* of this DEIR). Thus, the South District enrollment trend between 2014 and 2024 is not expected to be substantially different than the two percent forecast decrease in districtwide enrollment.

As discussed above, under state law, development projects are required to pay established school impact fees in accordance with SB 50 at the time of building permit issuance. The funding program established by SB 50 has been found by the Legislature to constitute "full and complete mitigation of the impacts of any legislative or adjudicative act…on the provision of adequate school facilities" (Government Code Section 65995[h]). The fees authorized for collection under SB 50 are conclusively deemed full and adequate mitigation of impacts on school district facilities. Therefore, the increase in the demand for school facilities and services due to cumulative development would be adequately mitigated to a less than significant level by the payment of SB 50 fees.

5.11.3.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements and standard conditions of approval, Impact 5.11-3 would be less than significant.

5.11.3.7 MITIGATION MEASURES

No mitigation is required.

5.11.3.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.11.4 Library Services

5.11.4.1 ENVIRONMENTAL SETTING

Relevant Programs and Regulations

Los Angeles County Library Facilities Mitigation Fees

The County applies a library facilities mitigation fee to new residential developments in the unincorporated areas. This fee is intended to mitigate the significant adverse impacts of increased residential development on the Los Angeles County Library System. The library facilities mitigation fee is based on the estimated cost of providing the projected library facility needs in each library planning area, defined in Section 22.72.030 of the County's Zoning Code. There are seven library planning areas—West Carson falls in the Southeast Library Planning Area. The current mitigation fee for the Southwest Library Planning Area is $910 per dwelling unit for fiscal year 2017-18.

The mitigation fee in each planning area is reviewed annually by the County Librarian in consultation with the County Auditor-Controller. On July 1st of every year, the fee in each library planning area is adjusted based on the Consumer Price Index. According to the Zoning Code, no adjustment shall increase or decrease the fee to an amount more or less than the amount necessary to recover the cost of providing applicable library facilities and services.

The provisions of the Library Facilities Mitigation Fee Ordinance are applicable to residential projects only. All library facilities mitigation fees received by the County are deposited into a special library capital facilities fund (one for each library planning area) and expended solely for the purposes for which the fees were collected.

Existing Conditions

Six libraries, listed in Table 5.11-5, are within about 3.6 miles of the project site. The nearest library to the site is the Carson Library, a County of Los Angeles Public Library (Public Library) facility, at 151 East Carson Street in the City of Carson, about one mile to the east. Three of the remaining five libraries are Public

Library facilities, one is a City of Los Angeles Public Library branch facility, and one is a Torrance Public Library facility.

Table 5.11-5 Libraries Serving the Project Site

Library	Location	Distance to Specific Plan Area[1]
Los Angeles County Public Library System		
Carson Library	151 East Carson Street, Carson	1.0
Dr. Martin Luther King Jr. Library	17906 South Avalon Boulevard, Carson	3.0
Lomita Library	24200 Narbonne Avenue, Lomita	2.3
Gardena Mayme Dear Library	1731 West Gardena Boulevard, Gardena	3.6
Outside the Los Angeles County Public Library System		
Harbor Gateway Branch Library [City of Los Angeles Public Library]	24000 South Western Avenue, Harbor City, City of Los Angeles	1.8
Southeast Branch Library [Torrance Public Library]	23115 Arlington Avenue, Torrance	1.8

Sources: Los Angeles County Public Library 2017; Los Angeles Public Library 2017; Torrance Public Library 2017.
[1] Measured from library to middle of Specific Plan area.

Carson Library, County of Los Angeles Public Library

The Carson Library houses a collection of 108,887 items in a 33,112-square-foot building. The library currently has deficits of 231,013 items, 23,538 square feet of building area, and 87 computers, compared to the County of Los Angeles Public Library's service level guidelines for its service area population, as shown in Table 5.11-6. The County of Los Angeles Public Library plans to renovate the Carson Library without expanding the facility. Funding sources for the renovation include the library's operating budget, library facilities mitigation fees (described below), and a donation (Munoz 2017).

Planned New Library in Carson Library Service Area

The Public Library's Capital Improvement Program, dated October 25, 2016, includes a new library facility in the Carson Library Service Area. The new facility would be 53,825 square feet of building area on a 215,300-square-foot (4.94-acre) site with a collection size of 177,902 items. The Public Library does not currently have funding to build the new facility; funding is currently available for a minor refurbishment but no expansion of the facility. The planned new library will remain in the Capital Improvement Program until the Public Library obtains funding to build it (Munoz 2017).

Table 5.11-6 Carson Library: Existing Conditions

	Existing Conditions	Service Level Guidelines	Service Area Population1	Resources Required per Guidelines1	Existing Surplus/(Deficit)
Collection, Items	108,887	3 per capita	113,300	339,300	(231,013)
Building area, square feet	33,112	0.5 per capita	113,300	56,650	(23,538)
Land, gross square feet	89,320[2]	2	113,300	226,600	(137,280)
Computers	26	0.001 per capita	113,300	113	(87)

Source: Munoz 2017.
[1] The service area population and the resources required per guidelines were calculated based on answers in the library service response (Munoz 2017). By comparison, the populations of Carson and West Carson counted in the 2010 US Census totaled 113,413 (USCB 2017).
[2] Land area calculated from Google Maps satellite photograph using "measure distance" function.

5.11.4.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

LS-1 Result in a substantial adverse physical impact associated with the provisions 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 library services.

5.11.4.3 PLANS, PROGRAMS, AND POLICIES

RR PS-3 The County applies a library facilities mitigation fee to new residential developments in the unincorporated areas. This fee is intended to mitigate the significant adverse impacts of increased residential development on the Los Angeles County Library System. The library facilities mitigation fee is based on the estimated cost of providing the projected library facility needs in each library planning area, defined in Section 22.72.030 of the County's Zoning Code. There are seven library planning areas—West Carson falls in the Southeast Library Planning Area. The current mitigation fee for the Southwest Library Planning Area is $892 per dwelling unit.

5.11.4.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.11-4: The proposed project would introduce up to 5,961 additional residents in West Carson and would increase demand on local libraries. [Threshold LS-1]

Impact Analysis: Specific Plan buildout would add about 5,961 residents to the project site, thus increasing demand for library services in the service area of Public Library's Carson Library. The Carson Library

currently has deficits of over 230,000 collection items and over 23,500 square feet of building area compared to service level guidelines for its service population, as shown above in Table 5.11-6 (Munoz 2017). Thus, additional service demands caused by Specific Plan buildout would intensify the deficits, as shown in Table 5.11-7. Approximately $3.84 million would be needed to provide resources to serve project residents, as shown in Table 5.11-8. The Public Library plans to renovate the Carson Library without expanding the facility. Residential projects developed under the Specific Plan would pay library facilities mitigation fees to Los Angeles County. Use of such fees by Public Library for construction of new and/or expanded library facilities would reduce project impacts on library facilities. In addition, the City of Carson is planning to adopt development impact fees for new developments; some such fees may be used for construction of library facilities.

Table 5.11-7 Carson Library: Resources Required to Serve Project Population Plus Existing Resource Deficits

	Service Level Guidelines	Existing Surplus/(Deficit)	Project population, net increase	Resources Required to Serve Project Population (net increase)	Projected Deficit, Including Requirements to Serve Project Population
Collection, Items	3 per capita	(231,013)	5,961	17,883	(248,896)
Building area, square feet	0.5 per capita	(23,538)	5,961	2,981	(26,519)
Land, gross square feet	2 per capita	(137,280)	5,961	11,922	(149,202)
Computers	0.001 per capita	(87)	5,961	6	(93)

Source: Munoz 2017.
The service area population and the resources required per guidelines were calculated based on answers in the library service response (Munoz 2017). By comparison, the populations of Carson and West Carson counted in the 2010 US Census totaled 113,413 (USCB 2017).

Table 5.11-8 Carson Library: Resources Required to Serve Project Population plus Existing Resource Deficits

	Resources Required to Serve Project Population (net increase)	Cost	
		Per Unit	Total
Collection, Items	17,883	$28	$500,724
Building area, square feet	2,981	$1,000	$2,981,000
Land, gross square feet	11,922	$29	$345,738
Computers	6	$1,800	$10,800
Total	Not applicable	Not applicable	$3,838,262

Source: Munoz 2017.
The service area population and the resources required per guidelines were calculated based on answers in the library service response (Munoz 2017). By comparison, the populations of Carson and West Carson counted in the 2010 US Census totaled 113,413 (USCB 2017).

Level of Significance before Mitigation: Based on the analysis above, Impact 5.11-4 would be less than significant.

5.11.4.5 CUMULATIVE IMPACTS

The area considered for cumulative impacts is the Los Angeles County Public Library System service boundary. Library branches within the Los Angeles County Public Library System that serve the County's South Bay Planning Area include:

- Lomita Library, City of Lomita
- Carson Library, City of Carson
- Dr. Martin Luther King Jr. Library, City of Carson
- Lawndale Library, City of Lawndale
- Wiseburn Library, City of Hawthorne
- Hawthorne Library, City of Hawthorne
- Masao W. Satow Library, City of Gardena
- Gardena Mayme Dear Library, City of Gardena
- Hermosa Beach Library, City of Hermosa Beach
- Manhattan Beach Library, City of Manhattan Beach
- Lennox Library, Community of Lennox (unincorporated)

Several incorporated cities and one special district in the South Bay Planning Area operate their own library facilities in addition to the above-listed Los Angeles County Public Library branches: Los Angeles, Torrance, Redondo Beach, El Segundo, Inglewood, and the Palos Verdes Library District (CSL 2017).

Cumulative development in accordance with the County's General Plan would increase residential development and introduce new residents that may increase demand on existing library services in the South Bay Planning Area. The County applies a library facilities mitigation fee to new residential developments in the unincorporated areas and would mitigate the significant adverse impacts of increased residential development on the library system. The library facilities mitigation fee is based on the estimated cost of providing the projected library facility needs in each of the seven library planning areas per Section 22.72.030 of the County's Zoning Code. Therefore, cumulative impacts to library facilities and services would be less than significant, and project impacts would not be cumulatively considerable.

5.11.4.6 EXISTING REGULATIONS AND STANDARD CONDITIONS

Los Angeles County

- Library facilities mitigation fee (developer fee) set forth in Los Angeles County Code of Ordinances Chapter 22.72.

5.11.4.7 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Without mitigation, impact 5.11-4 would be less than significant.

5.11.4.8 MITIGATION MEASURES

No mitigation measures are required.

5.11.4.9 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.11.5 References

American Trauma Society (ATS). 2017, January 4. Trauma Center Levels Explained. http://www.amtrauma.org/?page=traumalevels.

California State Library (CSL). 2017, February 6. California Public Library Outlets. http://www.batchgeo.com/map/capublibs.

Carson, City of. 2016a, September 1. City of Carson Budget: Fiscal Year 2016-2017. http://ci.carson.ca.us/content/files/pdfs/budgets/budget16-17/Budget2016-17_Full.pdf.

———. 2016b, October 11. Planning Commission Staff Report. http://ci.carson.ca.us/content/files/pdfs/planning/sr/2016-10-11/1610.pdf.

Department of Health Services (DHS). 2017, January 4. Harbor-UCLA Medical Center. Los Angeles County. https://dhs.lacounty.gov/wps/portal/dhs/harbor.

Los Angeles County. 2016, December 15. County of Los Angeles 2016-17 Final Budget. http://ceo.lacounty.gov/pdf/budget/2016-17/Final%20Budget%20Book.pdf.

Los Angeles County Fire Department (LACoFD). 2012, March. County Base Wall Map.

Los Angeles County Metropolitan Transportation Authority (Metro). 2017, February 23. New Contract Approved to Increase Police Presence on Metro System. http://thesource.metro.net/2017/02/23/new-contract-approved-to-increase-police-presence-on-metro-system/.

Los Angeles County Public Library (LACPL). 2016, October 25. 2015-16 Fiscal Year-End Report for the Library Facilities Mitigation Fee Funds and Updated Capital Improvement Plan for Public Library Facilities. http://file.lacounty.gov/SDSInter/bos/supdocs/108381.pdf.

———. 2017, February 6. List of Libraries. http://www.colapublib.org/libs/.

Los Angeles Public Library (LAPL). 2017, June 12. Locations & Hours. https://www.lapl.org/branches.

Los Angeles County Sheriff's Department (LASD). 2014, May 7. LASD Patrol Divisions. http://shq.lasdnews.net/content/uoa/EPC/LASD_Jurisdiction.pdf.

———. 2017, February 8. Patrol Station Guide. http://www.la-sheriff.org/s2/page_render.aspx?pagename=patrol_main.

Los Angeles Unified School District (LAUSD). 2017, February 7. Local District South: Superintendent. http://achieve.lausd.net/Page/2404.

———. 2015, May. Local District South Map. http://achieve.lausd.net/site/handlers/filedownload.ashx?moduleinstanceid=22573&dataid=24306&FileName=South.pdf.

———. 2014, June. School Upgrade Program EIR. Chapter 4: Project Description. http://achieve.lausd.net/cms/lib08/CA01000043/Centricity/domain/135/pdf%20files/Program_EIR_School_Upgrade_Program_Full.pdf.

Munoz, Elsa (Head, Support Services). 2017, May 2. Written response to service questionnaire. County of Los Angeles Public Library.

Perez, Rena (Director, Master Planning & Demographics). 2017, July 11. Written response to service questionnaire. Los Angeles Unified School District.

Schow, Karl (Captain). 2017, February 13. Written Response to Service Questionnaire. Los Angeles County Sheriff's Department.

Skeen, Jason (Captain). 2017, February 8. Written Response to Service Questionnaire. Los Angeles County Sheriff's Department.

Steinbrenner, Britta (Captain). 2017, March 14. Written Response to Service Questionnaire. Los Angeles County Sheriff's Department.

Torrance Public Library. 2017, June 12. Library Hours and Locations. http://www.torranceca.gov/Library/28173.htm.

US Census Bureau. 2017, June 26. Community Facts: West Carson CDP, California. https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml.

Vidales, Frank (Chief, Forestry Division). 2017, February 15. Written response to service questionnaire. Los Angeles County Fire Department.

5.12 RECREATION

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the West Carson TOD Specific Plan to impact public parks and recreational facilities. A response to the parks and recreational services provider questionnaire is included in Appendix H of this DEIR.

5.12.1 Environmental Setting

5.12.1.1 RELEVANT PROGRAMS AND REGULATIONS

State

Quimby Act

Since the passage of the 1975 Quimby Act (California Government Code § 66477), cities and counties have been authorized to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities (Westrup 2002). A 1982 amendment (AB 1600) requires agencies to clearly show a reasonable relationship between the public's need for the recreation facility or parkland, and the type of development project upon which the fee is imposed. Cities and counties with a high ratio of park space to inhabitants can set a standard of up to five acres per 1,000 people for new development. Cities and counties with a lower ratio can only require the provision of up to three acres of park space per 1,000 people. The calculation of a city or county's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of city/county-owned parkland.

The Mello-Roos Community Facilities Act of 1982

The Mello-Roos Community Facilities Act provides an alternative method of financing certain public capital facilities and services, especially in developing areas and areas undergoing rehabilitation. This state law empowers local agencies to establish Community Facilities Districts (CFDs) as a means of obtaining community funding.

Landscaping and Lighting Act of 1972, California Streets and Highway Code Section 22500–22509

The California Landscaping and Lighting Act of 1972 authorizes local legislative bodies to establish benefit related assessment districts, or landscaping and lighting districts, and to levy assessments for the construction, installation, and maintenance of certain public landscaping and lighting improvements, including local public parks.

Local

Los Angeles County Code

In addition to containing regulations on the operation of park facilities, the County Code contains provisions that regulate the provision of parklands for new subdivisions, in accordance with the Quimby Act. County Code Section 21.24.340 (Residential Subdivisions, Local Park Space Obligation, Formula) contains the

methodology used to determine the amount of parkland required to be dedicated by the subdivider as a part of the subdivision map approval process. In accordance with Section 21.28.140, the developer may also choose to pay a fee in lieu of the provision of parkland. Additionally, the developer may choose to provide less than the required amount of parkland, but develop it with amenities equal to the value of what the in-lieu fee would be. In order to determine the local park space obligation for a subdivision, a formula is used that considers the number of dwelling units in the subdivision, the average household size by Park Planning Area (PPA) (which differs for single family, multifamily, and mobile home developments as well as by PPA), and the adopted ratio of three acres of parkland per 1,000 residents, per the Quimby Act. However, it should be noted that, as discussed in the current County General Plan, as a condition of zone change approval, General Plan amendment, specific plan approval, or development agreement, the County may require a subdivider to dedicate land according to the General Plan goal of four acres of local parkland per 1,000 residents, and six acres of regional parkland per 1,000 residents.

Once the local park space obligation is determined, County Code Section 21.24.350 (Residential Subdivisions, Provision of Local Park Sites) contains regulations pertaining to the siting of park facilities as well as provisions that give the option to subdividers of 50 units or less to choose to provide the obligatory amount of parkland, any excess of which would be credited to the subdivision, or otherwise allow any remaining obligation to be satisfied by the payment of park fees in accordance with the provisions of Section 21.28.140. Additionally, since only the portions of the land dedicated for parkland that are suitable for park use can be counted against the obligation of the subdivider, attributes of the park space including the slope of the site are used to determine the amount of land that can be counted against the subdivider's obligation. For example, for the portions of the site in excess of 20 percent slope, only 10 percent of the acreage will be counted against the subdivider's obligation, whereas all of the land that is less than 3 percent slope can be counted toward the obligation.

Section 21.28.140 (Park Fees Required When, Computation and Use) has provisions regarding the payment of in-lieu fees for any portion of the dedication obligation not satisfied by the subdivider. These fees would be enforced as a condition of approval on the final approval of the subdivision. The in-lieu fee is determined by multiplying the amount of park space not satisfied by the representative land value for the appropriate PPA. Park fees shall be used only for acquiring local park land or developing new or rehabilitating existing recreational facilities. This section also makes it the responsibility of the Los Angeles County Department of Parks and Recreation to develop a schedule specifying how, when, and where it will use the land, fees, or both from each subdivision to develop park or recreational facilities within the applicable PPA.

Park Planning Area and Parkland Standard

The Community of West Carson is in PPA 21 (Los Angeles County GIS Data Portal 2017). The local park space obligations in acres per residential unit for residential subdivisions in PPA 21 are identified in Table 5.12-1.

Table 5.12-1 Parkland Obligation for Residential Subdivisions, Park Planning Area 21 (West Carson)

Residential Unit Type	Average Household Size	Acres per Resident	Acres per Residential Unit
Single-Family (detached or attached)	2.96	0.003	0.00888
Multifamily (2–4 units)	2.66	0.003	0.00798
Multifamily (5+ units)	2.20	0.003	0.00660
Mobile Home	2.04	0.003	0.00612

Source: Los Angeles County Ordinance Section 21.24.340.

Los Angeles County General Plan Park Standard

Policy 3.1 of the Los Angeles County 2035 General Plan Parks and Recreation Element sets forth the following goals for acres of parkland per population: three acres of local parkland per 1,000 residents in the unincorporated areas and six acres of regional parkland per 1,000 residents of the total population of Los Angeles County.

Proposition A: Safe Neighborhood Parks Proposition of 1992 and 1996

Proposition A created the Los Angeles County Regional Park and Open Space District. The District's boundaries are coterminous with the boundaries of Los Angeles County. The proposition authorized an annual assessment on nearly all of the 2.25 million parcels of real property in Los Angeles County and funded $540 million for the acquisition, restoration, or rehabilitation of real property for parks and park safety, senior recreation facilities, gang prevention, beaches, recreation, community or cultural facilities, trails, wildlife habitats or natural lands, and maintenance and servicing of those projects. In 1996, voters approved another Proposition A to fund an additional $319 million for parks and recreation projects and additional funds to maintain and service those projects. Proposition A funds may be used to fund the development, acquisition, improvement, restoration, and maintenance of parks; recreational, cultural, and community facilities; and open space lands.

County of Los Angeles Park Design Guidelines and Standards

The Park Design Guidelines and Standards document is intended to give design professionals, County staff, and other agencies guidance on how to design and develop parks that meet County standards and expectations. It incorporates input from DPR staff, other County departments, as well as outside partners such as non-profit organizations and private developers, which have an interest in park design. This manual addresses topics such as: spatial organization: buildings: circulation: recreational facilities: landscaping: storm water management: utilities: preferred manufactured products to be used at the parks; and preferred plant lists for both potable and recycled water.

Los Angeles Countywide Parks and Recreation Needs Assessment

Adopted by the Board of Supervisors on July 5, 2016, the *Parks Needs Assessment* was a historic and significant undertaking to engage all communities within Los Angeles County in a collaborative process to gather data and input for future decision-making on parks and recreation. The primary goal of the *Parks*

Needs Assessment was to quantify the magnitude of need for parks and recreational facilities, and determine the potential costs of meeting that need. This goal has been accomplished, as evidenced by the final report which uses a transparent, best-practices approach to evaluate park and recreation needs, and is the product of an engagement process that involved the public, cities, unincorporated communities, community-based organizations, and other stakeholders. Specifically, the Parks Needs Assessment:

- Uses a set of metrics to measure and document park needs for each study area:
- Establishes a framework to determine the overall level of park need for each study area:
- Offers a list of priority park projects for each study area:
- Details estimated costs for the priority park projects by study area:
- Builds a constituency of support and understanding of the park and recreational needs and opportunities: and
- Informs future decision-making regarding planning and funding for parks and recreation.

The Project is located within the Unincorporated West Carson Area which is an area of very high park need. According to the Countywide Parks Needs Assessment, this Study Area currently has no County parkland available to its residents.

County of Los Angeles Trails Manual

In May 2011, the Los Angeles County Board of Supervisors adopted the County of Los Angeles Trails Manual, which provides guidelines and standards for trail planning, design, development, and maintenance of Los Angeles County trails.

Measure A

Los Angeles County Measure A, passed by voters in November 2016, placed a 1.5-cent per square foot property tax levy on improved property in Los Angeles County, to take effect on July 1 2017. The following text is from an impartial analysis by the Los Angeles County Counsel:

> Proceeds from the Tax will be used to replace an expired 1992 assessment, and a 1996 assessment expiring in 2019. Tax proceeds shall be allocated, as designated by the Resolution and Expenditure Plan ("Expenditure Plan"), to develop or implement programs with projects consistent with the 2016 Countywide Park Needs Assessment ("Needs Assessment") including, but not limited to, projects protecting, developing, enhancing, and preserving parks, play areas, beaches, open space lands, natural areas, waterways, water resources, and equestrian facilities, promoting health and encouraging community use including for seniors and youth, investing in areas with high-needs for parks, developing and improving local and regional recreational facilities, maintaining and improving park safety,

healthiness, and accessibility, and providing and facilitating safe places to play, afterschool programs, career development, job training, educational and cultural resources. The tax will take effect July 1 2017 (Ballotpedia 2016).

Measure A funds will be allocated for expenditure in both incorporated cities and unincorporated areas (Yom 2017a).

5.12.1.2 EXISTING CONDITIONS

Parks

The Los Angeles County Department of Parks and Recreation defines several categories of parks, including:

- **Neighborhood Parks.** Neighborhood parks range from 3 to 10 acres and are intended to have a half-mile service area. Neighborhood park features and amenities include informal open play areas, children's play apparatus, group picnic areas with overhead shelters, barbecues; active park amenities include practice sports fields, basketball, tennis, and volleyball courts; and park facilities include public restroom, onsite parking and information kiosks.

- **Community Parks.** Community parks have suggested area of 10 to 20 acres and a service area of one to two miles. Community park features and amenities include passive park amenities, such as informal open play areas, children's play apparatus, family and group picnic areas with overhead shelters, and barbecues; active sports facilities including lighted sports fields, basketball courts and tennis courts; and park facilities including public restrooms, concession building, community buildings, maintenance building and onsite parking and information kiosks.

- **Regional Parks.** Community regional parks are typically 20 to 100 acres and have a service radius of 20 miles. Community regional parks protect and conserve natural resources, preserve open spaces, and provide recreational facilities that are not available in neighborhood or community parks. Amenities for community regional parks can include a jogging exercise course, informal open play areas, children's play apparatus, group picnic areas with overhead shelters, barbecues, lighted sports fields, basketball courts and tennis courts, information kiosks, public restrooms, concession building, recreation offices, maintenance buildings, and onsite parking. Community regional parks may also have one or more of the following features: multiple sports facilities, aquatics center, fishing lake, community building and gymnasium, and scenic views and vistas.

  Regional parks are typically greater than 100 acres in size and have a service radius of 25 miles or more. They include unique areas such as lakes, wetlands, auditoriums, water bodies, and campgrounds, in addition to the active recreational facilities offered in community and community regional parks. Many of the recreation activities are associated with experiencing the natural environment. A regional park may also perform important ecological and environmental functions, including serving as wildlife habitats. The connection of these parks to natural areas is often vital to ensuring a healthy ecological system. Amenities for regional parks can include picnic areas, nature centers, trail systems, scenic drives, campgrounds, water areas for swimming, fishing and boating, and in some cases, sport fields.

Parks Onsite

Within the Specific Plan area, half an acre of parkland is available for recreational and public use at Learning Grove County Park. This park is a small public green space with no amenities and is used as a joint-use facility with Meyler Street Elementary School. This park is open to the public Monday through Friday, 2:30 to 4:30 PM, and closed Saturdays, Sundays, and holidays (Yom 2017a).

Other Parks near the Project Site

Beyond the project area, the nearest park facilities can be found at the Normandale Recreation Center in the City of Los Angeles and the Veterans Sports Complex and Carson Park in Carson. Additional parks near the project site are described in Table 5.12-2, *Parks near the Project Site*. Regional parks listed are limited to those within five miles of the site. West Carson comprises Los Angeles County Park Planning Area 21.

Table 5.12-2 Parks near the Project Site

Park	Jurisdiction	Address	Acres	Amenities
Neighborhood Parks within 0.5 Mile of the Site				
Learning Grove County Park (onsite)	Los Angeles County; joint use with Los Angeles Unified School District	1123 W 223rd Street, Torrance	0.5	Green space; see description above
Normandale Recreation Center	City of Los Angeles	22400 South Halldale Ave, Torrance	8	Children's Play Area, Multipurpose Room, Stage, Baseball Diamond (Lighted/Unlighted), Sand Volleyball Courts (Unlighted), Multipurpose Field (Unlighted), Basketball Courts (Lighted / Indoor), Basketball Courts (Lighted / Outdoor)
Del Amo Neighborhood Park (*Under Development*)	Los Angeles County	1000 West 204th Street, Torrance	8.5	Under development. Multipurpose fields and courts (e.g., baseball, soccer, futsal), play areas, lawn and turf areas, walking trail, restroom building with office/community meeting room, maintenance building, pedestrian plaza, shade structures, outdoor fitness equipment, benches, picnic tables, drinking fountains, BBQs, bike racks, and parking.
		Subtotal[1]	*8.5*	
Community Parks within 2 Miles of the Site				
Veterans Sports Complex and Skate Park	City of Carson	22400 Moneta Avenue, Carson	12	Two lighted ball diamonds, two multi-purpose rooms, a play area, picnic area, 10,000-sq. ft. skate park, two lighted tennis courts, a snack-bar building, two parking lots, and one amphitheater.
Carson Park	City of Carson	21411 Orrick Ave, Carson	11	Two lighted ball diamonds, a swimming pool, play area, two multi-purpose game courts, restroom / snack-bar building, multi-purpose building, picnic area, and two parking lots.

Table 5.12-2 Parks near the Project Site

Park	Jurisdiction	Address	Acres	Amenities
Scott Park	City of Carson	23410 Catskill Avenue, Carson	13	Two lighted basketball courts, two lighted ball diamonds, two handball courts, two lighted tennis courts, two multi-purpose rooms, a swimming pool, a children's play area, a snack bar, and a multi-purpose game court.
		Subtotal	*36*	
Regional Parks within 5 Miles of the Site				
Charles H. Wilson Park	City of Torrance	2200 Crenshaw Boulevard, Torrance	44	Picnic area, barbecues, softball diamond, tennis court, playground, exercise path, restrooms
Victoria Golf Course	Los Angeles County	419 E. 192nd Street, Carson	162	public regulation golf course
Victoria Park	Los Angeles County	419 E. 192nd Street, Carson	36	Ball fields, basketball courts, a swimming pool, a gymnasium, tennis courts, play area, a recreation building, and a picnic area.
Columbia Park	City of Torrance	4045 190th Street, Torrance	52	Picnic area, barbecues, softball diamond, soccer field, playground, exercise path, restrooms
Ken Malloy Harbor Regional Park	City of Los Angeles	25820 South Vermont Avenue, Los Angeles	290	Barbecue Pits, children's play area, picnic tables, bike path, hiking trail, jogging path, fitness zone, camp ground area, fishing lake/piers
		Subtotal	*584*	
		Total	628.5 acres	

Sources: Carson 2008, 2016; DPR 2016b, 2017; Los Angeles 2016a, 2016b; Torrance 2010.
[1] Does not include acreage for Del Amo Neighborhood Park currently under construction.

"The Los Angeles Neighborhood Land Trust (LANLT) will be developing a park (tentatively named Del Amo Neighborhood Park) on approximately 8.5 acres of vacant land at 1000 West 204th Street in the unincorporated community of West Carson. The Park will provide much needed park facilities, including a variety of playing fields and courts (e.g., baseball, soccer, futsal), play areas, lawn and turf areas, a walking trail, a restroom building with an office/community meeting room, a maintenance building, pedestrian plaza, shade structures, outdoor fitness equipment, landscaping, and parking. The Project also includes amenities such as benches, picnic tables, drinking fountains, BBQs, bike racks, and litter receptacles. Upon completion of construction, the Park will be leased to the County to operate and maintain as a public park for the providing park and recreational services and programs to the local community and general public. Construction is tentatively scheduled for completion in 2019 (Yom 2017b).

Other parks and open space areas 20 or more acres in size in the South Bay Planning Area are listed in Table 5.12-3. The threshold of 20 acres was chosen because community regional parks are typically 20 to 100 acres in size.

Table 5.12-3 Other Parks and Open Space in the South Bay Planning Area

Park	Jurisdiction	Acres
Developed Parks		
Vincent Park	City of Inglewood	51
Rec. Park	City of El Segundo	21
Dominguez Park	City of Redondo Beach	20
Peck Park and Community Center	City of Los Angeles	75
Field of Dreams	City of Los Angeles	46
Wilmington Waterfront Park	City of Los Angeles	33
Banning Park and Museum	City of Los Angeles	21
Entradero Park	City of Torrance	26
Ernie Howlett Park	City of Rolling Hills Estates	34
Fred Hesse Jr. Community Park	City of Rancho Palos Verdes	29
Angels Gate Park	City of Los Angeles	70
	Subtotal	*426*
Golf Courses and Other Special-Purpose Recreation Areas		
Chester L Washington Golf Course	West Athens (Unincorporated)	126
Alondra Golf Course	Alondra Park (Unincorporated)	188
South Coast Park/Peter Weber Equestrian Center	City of Rolling Hills Estates	211
Palos Verdes Golf Club and City Parkland	City of Palos Verdes Estates	211
Palos Verdes Estates Stable and City Parkland	City of Palos Verdes Estates	21
Abalone Cove Shoreline Archery Range	City of Rancho Palos Verdes	45
Los Verdes Golf Course	City of Rancho Palos Verdes	163
	Subtotal	*965*
Open Space and Habitat Preserves		
Madrona Marsh Nature Center and Preserve	City of Torrance	42
White Point Nature Preserve	City of Los Angeles	95
Defense Fuel Supply Point Habitat Restoration	City of Los Angeles	327
Deane Dana Friendship Natural Area	Los Angeles County park in cities of Los Angeles and Rancho Palos Verdes	129
Palos Verdes Estates City Parkland	City of Palos Verdes Estates	410
Palos Verdes Shoreline Preserve	City of Palos Verdes Estates	90
Bluff Cove	City of Palos Verdes Estates	27
South Coast Botanic Garden	City of Rolling Hills Estates	82
Palos Verdes Reservoir	City of Rolling Hills Estates	63
George F Canyon Nature Park and Preserve	City of Rolling Hills Estates	33
Point Vicente Park and Civic Center and Point Vicente Interpretive Center	City of Rancho Palos Verdes	100
Point Vicente Lighthouse	City of Rancho Palos Verdes	21
San Ramon Reserve	City of Rancho Palos Verdes	94
Shoreline Park	City of Rancho Palos Verdes	52
Forrestal Nature Preserve	City of Rancho Palos Verdes	158
Filiorum Reserve	City of Rancho Palos Verdes	190

Table 5.12-3 Other Parks and Open Space in the South Bay Planning Area

Park	Jurisdiction	Acres
Three Sisters Preserve	City of Rancho Palos Verdes	98
Portuguese Bend Nature Preserve	City of Rancho Palos Verdes	393
Abalone Cove Shoreline Park	City of Rancho Palos Verdes	79
Vicente Bluffs Reserve	City of Rancho Palos Verdes	70
Agua Armaga Canyon Open Space	City of Rancho Palos Verdes	40
	Subtotal	*2.593*
	Total	3,984

Source: Los Angeles County 2017.

Parks to Population Ratio in West Carson

There is one park in West Carson—the Learning Grove County Park, approximately 0.5 acre and serving a population of approximately 21,699 (Census 2010; USCB 2016). Thus, the parkland to population ratio is 0.02 acre of local parkland per 1,000 residents, far below the County standard of three acres per 1,000 residents.

After completion of the Del Amo Neighborhood Park, tentatively scheduled for 2019, the total amount of parkland in West Carson would be 9 acres, for a parkland to population ratio of 0.4 acre of parkland per 1,000 residents, still below the County standard.

5.12.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

R-1 Would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

R-2 Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

R-3 Would the project interfere with regional open space connectivity?

The Initial Study, included as Appendix A, substantiates that impacts associated with the following impacts would be less than significant:

- Threshold R-3

This impact will not be addressed in the following analysis.

5.12.3 Plans, Programs, and Policies

There are no applicable project design features or regulatory requirements related to recreation.

5.12.4 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.12-1: The proposed project would generate additional residents that would increase the use of existing park and recreational facilities. [Threshold R-1]

Impact Analysis: Specific Plan buildout would involve development of a net increase of up to 2,271 residential units, all of which would be multifamily units. County Ordinance Section 21.24.340 sets forth two parkland obligations for multifamily residences depending on the number of dwelling units per development: 0.00798 acres of parkland per unit for developments with 2 to 4 dwelling units; and 0.00660 acres per unit for developments with 5 or more units (see Table 5.12-1, above). It is assumed here that most of the proposed multifamily units would be in developments of 5 or more units; thus, the parkland obligation of 0.00660 acre per unit is used here. Specific Plan buildout would require dedication of approximately 15.0 acres of parkland and/or payment of in-lieu fees.

The existing parkland-to-population ratio in West Carson is 0.02 acre per 1,000 residents, far below the County standard for local parkland of three acres per 1,000 residents. Therefore, Specific Plan buildout would exacerbate the existing shortage of parkland in West Carson. However, future developers of multifamily residential developments in the Specific Plan area would be required to provide the appropriate amount of parkland based on the proposed development size or pay in-lieu fees that would go toward funding County acquisition of local park land or rehabilitation of existing recreational facilities.

Additionally, the proposed Specific Plan acknowledges the community's park needs and deficiencies. Figure 3-5, *New Park Opportunities*, identifies potential locations for the creation of pocket parks by converting cul-de-sacs, partially covering a drainage channel, and ultimately reclaiming property that would no longer be needed by Harbor-UCLA Medical Center. Each of these pocket parks has the potential for passive and active recreation. The ultimate design and programming of these spaces would be prepared by the County and in conjunction with the neighborhood in which they are located. Figures 4.26 through 4.31 of the Specific Plan illustrate conceptual plans for each of the five pocket parks and includes various amenities, such as children's play areas, play structures, covered picnic tables, covered pergolas and pavilions, enhanced lighting and pathways, new signage and entry monumentation, enhanced crosswalks, benches, community gardens, repurposed parks and recreation buildings, bike parking/sharing, and real-time bus tracking kiosks. The five potential pocket parks would total only a few acres, a small fraction of the required 15.0 acres.

The Specific Plan area and the remainder of West Carson are almost entirely built out with urban uses. There is very little vacant unincorporated land in the project area that could be developed as parkland to serve the West Carson community. Thus, it is expected that residential developments in accordance with the Specific Plan would likely be required to pay in-lieu fees rather than dedicate parkland. Payment of in-lieu fees would

provide a funding mechanism to the County in order to acquire new parkland or rehabilitate existing parks and recreational facilities to serve the community. Thus, impacts would be reduced to less than significant levels.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.12-1 would be less than significant.

Impact 5.12-2: Project implementation would result in environmental impacts to provide new and/or expanded recreational facilities. [Threshold R-2]

Impact Analysis: As described above, the Specific Plan identifies the following five opportunity sites that can be redeveloped into pocket parks by converting cul-de-sacs, partially covering a drainage channel, and reclaiming property unused by the Harbor-UCLA Medical Center (see Figure 3-5, *New Park Opportunities*).

- Caltrans Park-n-Ride Lot at West Carson Street and I-110, northwest corner of Carson Street and the southbound I-110/Carson Street ramp at the southeast corner of the park-n-ride lot.
- East end of 220th Street, adjacent to the existing pedestrian bridge over I-110.
- 208th Street and Javelin Street, proposed cap over the 208th Street Drainage Channel plus conversion of cul-de-sacs on each side of drainage channel to park use.
- Harbor-UCLA Kindercare site on north side of Carson Street east of Berendo Avenue.
- East end of 214th Street, adjacent to existing pedestrian bridge over I-110.

Impacts of development of the potential parks are analyzed together as part of the impacts of the whole West Carson TOD Specific Plan throughout Chapter 5 of this DEIR.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.12-2 would be less than significant.

5.12.5 Cumulative Impacts

The area considered for cumulative impacts to park facilities and services is the Los Angeles County General Plan South Bay Planning Area. The population of the South Bay Planning Area and entire County of Los Angeles is forecast to reach 86,392 and 12,338,623 residents, respectively, at full buildout of the County General Plan (see Table 4-1). Based on the County local parkland standard of three acres per 1,000 residents, the South Bay Planning Area would need a total of approximately 259 acres of local parkland. Currently, the County General Plan identifies only 26 acres of local parkland in the South Bay Planning Area.

The extent to which the County can implement parks, trails, and other recreational facilities is related to the availability of funding. As discussed, the Quimby Act is a funding mechanism for parkland acquisition. As allowed by this act and pursuant to the County Code, residential subdivisions must dedicate parkland or pay

in-lieu fees (or both, in some circumstances) to enable the County to acquire a ratio of three acres of local parkland for every 1,000 residents (County Code § 21.24.340). This provision ensures that the funding for parkland acquisition will be proportional to increases in population. Other regulations—including the Mello-Roos Community Facilities Act of 1982, the Landscaping and Lighting Act of 1972, and Los Angeles County Proposition A (Safe Neighborhood Parks Proposition of 1992 and 1996)—would serve as supplemental sources of funding for parkland. Additionally, per the County General Plan Policy P/R 3.3, the County can require the provision of additional parks in communities with insufficient local parkland. The County can require a subdivider to dedicate land according to the General Plan standard of three acres of local parkland per 1,000 residents in unincorporated areas, and six acres of regional parkland per 1,000 residents in the unincorporated areas, per Los Angeles County Ordinance 2013-0009. Enforcement of the County's goal of three acres of local parkland for every 1,000 residents as a condition of approval would reduce the potential for deterioration of facilities by allowing for adequate funding. Therefore, existing regulations ensure that future funding for parkland acquisition would be proportional to increases in population and impacts would be less than significant.

5.12.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.12-1 and 5.12-2.

5.12.7 Mitigation Measures

No mitigation measures are required.

5.12.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.12.9 References

Ballotpedia. 2016, November 28. Los Angeles County, California, Parks and Open Space Parcel Tax, Measure A (November 2016). https://ballotpedia.org/Los_Angeles_County,_California,_Parks_and_Open_Space_Parcel_Tax,_Measure_A_(November_2016).

California Department of Toxic Substances Control (DTSC). 2017, February 2. EnviroStor. http://www.envirostor.dtsc.ca.gov/public/.

Carson, City of. 2008, October 7. Parks, Recreation, and Human Services Element. Chapter 9 of City of Carson General Plan. ci.carson.ca.us/content/files/pdfs/GenPlan/Chapter09.ParksRecreation.pdf.

———. 2016, December 7. Parks in the City. http://ci.carson.ca.us/communityservices/Parks_Rec_Parks.aspx.

Department of Parks and Recreation, Los Angeles County (DPR). 2016a, May 24. Los Angeles Countywide Comprehensive Park & Recreation Needs Assessment. Study Area Profile: Unincorporated West Carson-Harbor City. http://lacountyparkneeds.org/FinalReportAppendixA/StudyArea_023.pdf.

———. 2016b, December12. Victoria Community Regional Park. http://parks.lacounty.gov/wps/portal/dpr/Parks/Victoria_Community_Regional_Park.

Department of Regional Planning, Los Angeles County (DRP). 2017, February 1. ZNET Application. County of Los Angeles. http://planning.lacounty.gov/znet.

Guerrero, Michelle (project manager). 2017, February 2. Phone conversation. Los Angeles Neighborhood Land Trust.

Los Angeles, City of. 2016a, December 7. Normandale Recreation Center. Department of Recreation and Parks. http://www.laparks.org/reccenter/normandale.

———. 2016b, December 7. Ken Malloy Harbor Regional Park. Department of Recreation and Parks. http://www.laparks.org/park/ken-malloy-harbor-regional.

Los Angeles County GIS Data Portal. 2017, February 1. Park Planning Areas. https://egis3.lacounty.gov/dataportal/2016/02/16/park-planning-areas/.

Regional Park and Open Space District (RPOSD). 2017, February 2. Project Locator: Del Amo Neighborhood Park. Los Angeles County. http://gis.lacounty.gov/rposd/District.aspx.

Torrance, City of. 2010, April 6. City of Torrance General Plan: Chapter 3: Community Resources Element. http://www.torranceca.gov/PDF/3_Community_Resources_Element.pdf.

U.S. Census Bureau (USCB). 2016a, November 15. Interactive Population Map. http://www.census.gov/2010census/popmap/.

Yom, Julie, AICP (park planner). 2017a, March 13. Written response to service questionnaire. County of Los Angeles Department of Parks and Recreation.

Yom, Julie, AICP (park planner). 2017b, August 14. Written comment letter on West Carson Transit Oriented District Specific Plan Draft Environmental Impact Report.

5. Environmental Analysis
RECREATION

This page intentionally left blank.

5.13 TRANSPORTATION AND TRAFFIC

This section of the draft environmental impact report (DEIR) evaluates the potential for implementation of the West Carson Transit Oriented District (TOD) Specific Plan to result in transportation and traffic impacts in the County of Los Angeles and its sphere of influence (SOI). The analysis in this section is based in part on the following technical report:

- West Carson TOD Specific Plan Traffic Impact Study, IBI Group, June 9, 2017

A Complete copy of this study is included in Appendix J of this Draft EIR.

5.13.1 Methodology

The traffic analysis to be prepared for the West Carson Transit Oriented Development (TOD) Specific Plan follows the requirements and guidelines set forth by the County of Los Angeles, City of Carson, City of Torrance, and Caltrans. The intersection analysis methodology and performance criteria used in this analysis conform to the County and City requirements for traffic impact studies prepared consistent with the California Environmental Quality Act (CEQA) guidelines.

The traffic analysis conducted for the West Carson TOD Specific Plan includes an assessment of traffic conditions for 37 existing intersections located within the unincorporated area of West Carson, the City of Torrance and the City of Carson. Analysis scenarios and horizon years are as follows:

- Existing Year (2016) No Project
- Existing Year (2016) With Project
- Future Year (2035) No Project
- Future Year (2035) With Project

Traffic Count Data

The existing intersection turning movement counts were taken on Tuesday, May 24, 2016 at 37 intersections during the morning peak period (7:00 AM to 9:00 AM) and the afternoon peak period (4:00 PM to 6:00 PM). The AM and PM peak analyses are based on the hour of highest total intersection volume during the morning and afternoon periods. Average daily traffic volumes were also conducted on Tuesday, May 24, 2016 at 10 roadway segments.

Travel Demand Forecasting

The horizon year 2035 volumes are derived based on the Southern California Association of Governments (SCAG) regional model. The SCAG regional model is the accepted regional model for forecasting travel demand in Los Angeles County. The SCAG regional model was used to develop Existing Year (2016) No Project and Future Year (2035) No Project scenario volumes. Growth rates between base year and future year were developed and applied to existing turning movement volumes to determine future year turning

movement volumes. The compound annual growth rate developed from these comparisons was determined to be 0.6284%.

Level of Service Analysis

The efficiency of traffic operations is measured in terms of Level of Service (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. Evaluation of intersections involves the assignment of grades from "A" to "F," with LOS "A" representing the highest level operating conditions and LOS "F" representing extremely congested and restricted operations. Each letter grade corresponds to a range of V/C values, as described in Table 5.13-1.

Intersection Capacity Utilization

The ICU method is based on intersection volume-to-capacity (V/C) ratios. The V/C value for each movement is the observed or forecast volume divided by the saturation flow volume. The intersection ICU value is the sum of the V/C values for the critical movement on each leg, where critical movements are the pairs of conflicting movements with the highest combined V/C values. ICU is expressed as a decimal value (e.g. 0.740), where 1.00 represents the saturated condition in which the volume of traffic flow is equal to the capacity. The total intersection V/C ratio is then matched to the appropriate LOS based on the definitions in the signalized column of Table 5.13-1. This study uses maximum saturation volumes of 1,600 vehicles per hour per lane (VPHPL) for turning and through lanes; a lane saturation value of 2,880 VPHPL for Los Angeles County, and 2,560 VPHPL for Carson was used for dual left-turn lanes. A 10% increase in intersection saturation was established when accounting for signal timing mitigations such as the implementation of an Automated Traffic Surveillance and Control System (ATSAC/ATCS). This methodology was used for signalized intersections in the jurisdictions of the County of Los Angeles, and the City of Carson.

Highway Capacity Manual 2010 (unsignalized intersections)

The County of Los Angeles traffic study guidelines do not specify a method for assessing unsignalized intersections. In these instances, the Highway Capacity Manual (HCM) 2010 All-Way Stop Control (AWSC) method was employed using the Synchro 9 software.

The HCM unsignalized intersection delay was used to determine the intersection delay in seconds and corresponding LOS for the turning movements and intersection characterizes at the unsignalized intersections. The calculation of delay represents the amount of delay experienced by vehicles passing through the intersection. The unsignalized intersections were analyzed using the all-way stop method and the 2-way stop method from the HCM 2010. Delay was calculated based on the worst-case approach (in the case of one or 2-way stop-controlled intersections), or average delay (in the case of all-way stop-controlled intersections), and used to find the corresponding LOS, as presented in the unsignalized column of Table 5.13-1. This methodology was used for unsignalized intersections under jurisdiction of County of Los Angeles, City of Carson, and the City of Torrance.

Table 5.13-1 Intersection Level of Service (LOS) Criteria

LOS	Description	Signalized ICU Value (Volume/Capacity)	Unsignalized HCM Average Total Delay (seconds/vehicle)
A	EXCELLENT. No Vehicle waits longer than one red light and no approach phase is fully used.	0.00–0.60	≤ 10.0
B	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.	0.61–0.70	> 10.0 and ≤ 15.0
C	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles	0.71–0.80	> 15.0 and ≤ 25.0
D	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.	0.81–0.90	> 25.0 and ≤ 35.0
E	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.	0.91–1.00	> 35.0 and ≤ 50.0
F	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.	>1.000	> 50.0

Source: IBI Group, June 2017

Critical Movement Analysis

Per the traffic impact study guidelines set forth by the City of Los Angeles, the Critical Movement Analysis (CMA) method was utilized to assess intersection performance and impacts. The method was implemented with the Department of Transportation's (LADOT) CalcaDB software (CMA worksheets). Lane capacities vary due to the intersection phasing serving as the base upon which capacities are determined. Per correspondence with LADOT, the number of phases input was determined to be the amount of phase movements and not individual phases; the opposed phasing input was taken to be split phasing. A 10% increase in flow rate is taken into account within the worksheet when accounting for signal timing mitigations such as the implementation of ATSAC/ATCS. The volume/capacity ratios for each LOS value corresponds with the ranges from the signalized ICU method. This methodology was used for unsignalized intersections in the jurisdiction of the City of Los Angeles.

Highway Capacity Manual 2000 (signalized intersections)

The average control delay per vehicle is estimated for each land group and aggregated for each approach and for the intersection as a whole. LOS is directly related to the control delay value. The criteria are listed in Table 5.13-2. The Synchro 9 software was used to implement this method. Standard settings were utilized. A 10% increase in flow rate was established when accounting for signal timing mitigations such as the implementation of ATSAC/ATCS. This methodology was used for signalized intersections in the jurisdiction of Caltrans.

Table 5.13-2 Signalized Intersections Level of Service Criteria

LOS	Control Delay Per Vehicle
A	≤ 10
B	> 10 - 20
C	> 20 – 35
D	> 35 – 55
E	> 55 - 80
F	> 80

Source: IBI Group, June 2017

Peak Hour Roadway Segment (link) Level of Service Analysis

The peak hour link level of service analysis was conducted by calculating the traffic volume in each direction for a specified link segment. Link volumes were derived from the peak hour turning movement volumes between the two adjacent study intersections. A volume-to-capacity (V/C) ratio was taken; the LOS letter grade was assigned using the range of V/C values shown in Table 5.13-1. LOS D is generally taken to be the minimum.

State Highway Analysis

Peak hour analyses for basic freeway segments and freeway off-ramps were conducted at locations designated by Caltrans as appropriate in order to assess the regional impacts on freeway facilities by project traffic. As a result, CMP monitoring station, freeway mainline, and freeway off-ramp queue analyses were performed. The CMP monitoring station analysis was performed in compliance with the traffic impact analysis procedures outlined in the 2010 Congestion Management Program for Los Angeles County (Los Angeles County Metropolitan Transportation Authority, October 2010). The freeway mainline analysis was performed using the procedure outlined in the HCM 2010. Lastly, the freeway off-ramp queue analysis was performed in compliance with the procedure provided by Caltrans.

CMP Monitoring Station Analysis

Peak hour traffic conditions at six CMP monitoring stations were analyzed utilizing the procedures outlined in the CMP. The CMP method assesses a freeway segment based on the density to capacity ratio in the No Project and With Project scenarios for an analysis year. A summary of the CMP monitoring station locations analyzed is provided in Table 5.13-3. The designation of LOS based on the density to capacity ratio observed is summarized in Table 5.13-4. LOS F(1) through F(3) designations are assigned where severely congested conditions prevail for more than an hour.

Table 5.13-3 CMP Monitoring Station Locations

ID	Freeway	Segment	Station	Direction
1	I-110	at Wilmington Boulevard s/o C Street	1045	NB/SB
2	I-110	at Manchester Boulevard	1046	NB/SB
3	I-405	at Santa Fe Avenue	1066	NB/SB
4	I-405	South of I-110	1067	NB/SB
5	I-405	North of Inglewood Avenue	1068	NB/SB
6	SR-91	East of Almeda Street/Santa Fe Avenue	1033	EB/WB

Source: IBI Group, June 2017

Table 5.13-4 CMP Level of Service

LOS	V/C Ratio
A	0.00 – 0.35
B	> 0.35 – 0.54
C	> 0.54 – 0.77
D	> 0.77 – 0.93
E	> 0.93 – 1.00
F(0)	> 1.00 – 1.25
F(1)	> 1.25 – 1.35
F(2)	> 1.35 – 1.45
F(3)	> 1.45

Source: IBI Group, June 2017

Per the CMP, a significant impact is defined as:

- An increase in the V/C of 0.02 or more, causing LOS F (V/C > 1.00); or
- An increase in the V/C of 0.02 or more when the freeway segment operates at LOS F (V/C > 1.00) in the No Project scenario.

Freeway Mainline Analysis

A freeway mainline analysis was conducted at the seven study locations listed in Table 5.13-5. The HCM 2010 methodology used to assess the freeway segments was implemented using the HCS 2010 software. The methodology technical details are described in Section 3.5.2 of the TIA.

Table 5.13-5 Freeway Mainline Study Locations

ID	Freeway	Locations	California Postmile	Absolute Postmile	Direction
1	SR-91	At Avalon Boulevard	7.55	11.5	EB/WB
2	I-110	At SR-91 (Pacific Coast Highway)	4.17	4.1	NB/SB
3	I-110	At Sepulveda Boulevard	5.6	5.5	NB/SB
4	I-110	At El Segundo Boulevard	12.86	12.8	NB/SB
5	I-405	At I-710	7.63	31.4	NB/SB
6	I-405	South of I-110 (Carson Scales)	11.82	35.6	NB/SB
7	I-405	At Western Avenue	14.34	38.1	NB/SB

Source: IBI Group, June 2017

The HCM 2010 methodology utilizes lane density (pc/mi/ln) as the measure to determine a freeway segment's level of service. The designation of LOS based upon the density observed is outlined in Table 5.13-6. Caltrans maintains that the target LOS is the transition between LOS C and LOS D. It should be noted that because there is a linear relationship between freeway mainline density and queues, estimates for freeway mainline densities cannot be provided for conditions of extreme magnitude. Such is the case for instances in which large volumes are exceptionally experienced. When freeway demand conditions exceed capacity, forced flow results and the corresponding formulas used to estimate density will not be appropriate. As a result, estimates for freeway mainline density are not provided for severe LOS F conditions. An overcapacity (OVR) designation is assigned in these cases.

Table 5.13-6 Basic Freeway Segments Level of Service Definition (HCM 2010)

LOS	Density (Vehicles per Lane/Mile)	Description
A	≤ 11	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.
B	11 – 18	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.
C	18 – 26	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.
D	26 – 35	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.
E	35 – 45	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.
F	> 45	Represents a breakdown in flow.

Source: IBI Group, June 2017

Significant impacts are determined as follows:

- The addition of project trips causes a change from LOS C or better to LOS D or worse; or
- The addition of 50 or more project trips to a freeway mainline segment operating at LOS F in the No Project scenario (based on discussion with Caltrans staff cited in the Traffic Impact Analysis for the Harbor UCLA Medical Center Master Plan Project).

Freeway Off-ramp Queue Analysis

Per Caltrans traffic study guidelines, a queue analysis for freeway off-ramps at intersections within a reasonable distance to the project location is provided. The queue analysis was performed at off-ramps identified by Caltrans as having the potential to be significantly affected by the addition of project traffic; the analysis was performed in accordance with the methodology produced from correspondence with Caltrans in which 85% of the measured queue length is to be used as the threshold for determining a significant impact. The analysis was conducted by measuring the storage capacity of off-ramps from scaled online images (Google Maps). Utilizing the Synchro 9 traffic modeling software, a queue analysis report was generated for each scenario; 95th percentile queue lengths were taken from these reports. Queue analysis summaries are provided in the respective scenario section. Synchro queue reports are provided in the appendices of this report.

Vehicle Miles Traveled (VMT) Analysis

The VMT analysis is conducted using the California Emissions Estimator Model (CalEEMod), a statewide land use emissions model used to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both the construction and operation of a project. The model calculates these emissions based on the amount of direct and indirect vehicle miles traveled during the construction and operation of the project. Additionally, CalEEMod identifies emission-reducing mitigation measures and calculates the potential benefits of those measures selected.

The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with California Air Districts. Default data such as emission factors and trip lengths are provided by various air districts in order to take into account local requirements and conditions.

For the purposes of this report, CalEEMod was used to demonstrate the benefits of the TOD-associated development benefits in the existing year and future year scenarios. In particular, the model will be used to assess the change in total VMT and VMT per capita for the No Project, With Project, and With Project + Pass-By and TDM Trip Reduction scenarios.

The With Project scenarios for each analysis year listed above were evaluated using the Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA released by the Governor's Office of Planning and Research (OPR) in January 2016. The document outlines OPR's recommendations regarding methodology for conducting VMT analysis and establishing thresholds for significant transportation impacts as part of the CEQA analysis for new projects. These recommendations include:

- Vehicle miles traveled is the primary metric for determining transportation impacts across the state;
- Land use development near transit or in VMT-efficient areas should be presumed to cause a less than significant impact;

- Transit, active transportation, and rehabilitation projects that do not add motor vehicle capacity should also be presumes to cause a less than significant impact; and

- Implementation of a VMT metric should be phased in over time.

The City of West Carson has yet to adopt a metric for assessing significant impacts with regards to VMT due to the addition of various types of development projects. Thus, significant impacts and mitigation measures for these impacts, if applicable, are not identified as of the time which this report was produced.

5.13.2 Environmental Setting

5.13.2.1 RELEVANT PROGRAMS AND REGULATIONS

A number of programs and regulations have been adopted by regional, County, and local agencies to promote the efficient transport of people or goods in the region. Those that have direct relevance to traffic and circulation issues for the Project are summarized below.

State

Senate Bill 743

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743, which creates a process to change the analysis of transportation impacts under the California Environmental Quality Act (CEQA). On December 30, 2013, the California Office of Planning and Research (OPR) released a preliminary evaluation of alternative methods of transportation analysis. In August 2014, the OPR released a Preliminary Discussion Draft of Updates to CEQA Guidelines Implementing SB 743. The report recommends amendments to the CEQA Guidelines to replace the Level of Service (LOS), auto-delay-based standard with other metrics to measure transportation impacts; these other metrics may include, but are not limited to, vehicle miles traveled (VMT), vehicle miles traveled per capita, and automobile trips generated in order to align CEQA analyses more closely with other State goals, most notably the greenhouse gas emission reduction goals contained in the State's climate change law, Assembly Bill (AB) 32.

The SB 743 legislation does not authorize OPR to set thresholds, but it does direct OPR to develop guidelines for determining the significance of transportation impacts for Proposed Projects. OPR is expected to circulate a revised guidance document sometime in 2015. The current schedule has the adoption of the OPR amendment to the CEQA Guidelines no earlier than the fall of 2017, thus no specific significance thresholds have yet been adopted for purposes of complying with SB 743. In addition, the OPR guidance does not preclude an agency from establishing their own significance thresholds prior to the adoption of the OPR amendment to the CEQA Guidelines and/or permitting additional analysis beyond the typical auto delay based standards in the interim.

Neither the City of Los Angeles nor the County of Los Angeles have specifically adopted elements of SB 743 into their current traffic study guidelines.

Regional/County

Regional Transportation Plan/Sustainable Communities Strategy

The 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) addresses the region's future needs for "mobility, economy, and sustainability". The RTP/SCS combines the need for mobility with a "sustainable future" through a reduction in the amount of emissions produced from transportation sources through the operation of low or no emission transportation systems by 2040. The RTP/SCS also focuses on the economy with expectations of shortening the gap between the regional transportation system and economic vitality.

To address the mobility challenge of the region's continuing roadway congestion, transportation investments will be made in transit; passenger and high-speed rail; active transportation; transportation demand management; transportation systems management; highways; arterials; goods movement; aviation and airport ground access; and operations and maintenance Proposed Projects. These will indirectly create investment opportunities in the region. The RTP/SCS seeks to reduce GHG emissions; to create closer "high quality" transit for households; to decrease roadway congestion; to improve safety; and to generate average 539,900 jobs per year. This will improve and establish a platform for sustainable living situations for the region's existing and future population (SCAG 2016a).

Congestion Management Program for Los Angeles County

The Los Angeles County Metropolitan Transportation Authority (Metro) has developed and implements the Congestion Management Program (CMP) for Los Angeles County. The CMP was last updated in 2010 and links transportation, land use, and air quality decisions in the County and addresses the impact of local growth on the regional transportation system. The CMP calls for (1) monitoring the CMP highway and roadway system; (2) a multi-modal system performance analysis; (3) a Transportation Demand Management Program to promote alternative modes of transportation; (4) a Land Use Analysis Program; (5) a seven-year capital improvement program of Proposed Projects on the CMP highway and roadway system; and (6) a deficiency plan to maintain LOS standards.

The CMP requires monitoring of land use and roadway performance by individual jurisdictions and provides guidelines for conducting a Traffic Impact Analysis (TIA). The CMP sets the LOS standard in Los Angeles County at LOS E, except where base year LOS is worse than E (Metro 2010). US 101, Interstate 5 (I-5), I-10, and State Route 110 are all elements of the CMP highway system. The nearest arterial roadway to the Project Sites that is an element of the CMP highway system is the segment of Alameda Street extending south from US 101.

Los Angeles County Mobility Element (General Plan Element)

The Mobility Element included in the Los Angeles County General Plan 2035 provides the policy foundation for achieving a transportation system that balances the needs of all road users. The Mobility Element contains seven goals that each have multiple policies that provide specific steps

intended to achieve each goal. The transportation goals included in the LA County Mobility Element are as follows:

- M1: Street designs that incorporate the needs of all users.
- M2: Interconnected and safe bicycle- and pedestrian-friendly streets, sidewalks, paths and trails that promote active transportation and transit use.
- M3: Streets that incorporate innovative designs.
- M4: An efficient multimodal transportation system that serves the needs of all residents.
- M5: Land use planning and transportation management that facilitates the use of transit.
- M6: The safe and efficient movement of goods.
- M7: Transportation networks that minimizes negative impacts to the environment and communities.

Goal M4 includes policy M4.7, which presents minimum LOS standards, as follows: Maintain a minimum LOS D, where feasible; however, allow LOS below D on a case by case basis in order to further other General Plan goals and policies, such as those related to environmental protection, infill development, and active transportation.

The Mobility Element also introduces several implementation programs that will increase the safety and efficiency of the Los Angeles County roadway network. The Mobility Element implementation programs are as follows:

- Parking Ordinance
- Community Pedestrian Plans
- Safe Routes to School Program
- Multimodal Transportation Planning Function

The Mobility Element was prepared in compliance with the Complete Streets Act of 2008 (Assembly Bill 1358), which requires local jurisdictions to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation.

Los Angeles County Code

Title 15, *Vehicles and Traffic*, of the Los Angeles County Code regulates traffic signs and signals; traffic on public and private roads; parking restrictions; turning movement restrictions; allowable speed limit

under different circumstances; crosswalks and bicycle lanes; as well as many other chapters that deal with traffic restrictions within the county.

Intersection Level of Service Analysis and Impact Criteria

The study area intersections for the proposed project are in the following jurisdictions: County of Los Angeles, City of Los Angeles, City of Torrance, City of Carson, and Caltrans. Intersections were assessed utilizing all applicable jurisdiction assessment criteria. Study intersections were selected for analysis based on the forecasted project trip generation and distribution, particularly in consideration of each agency's guidelines in determining need for analysis based on the forecasted amount of project trips traveling to each intersection. The Los Angeles County Department of Public Works (LACDPW) reviewed and approved the proposed study intersections locations. The analysis also considered a comment letter provided to the County by Caltrans District 7 during the Notice of Preparation (NOP) comment period. Caltrans-controlled intersections have been included as study locations based on a review of Caltrans guidelines of forecast trip generation. In cases where intersections suggested by Caltrans for analysis are not included, the project team conducted discussions with Caltrans regarding existing level of service and the relatively small number of project trips expected at these locations.

County of Los Angeles

Traffic conditions at signalized intersections are evaluated using the Intersection Capacity Utilization (ICU) method.

The County of Los Angeles traffic study guidelines do not specify a method for assessing unsignalized intersections. In these instances, the Highway Capacity Manual (HCM) 2010 All-Way Stop Control (AWSC) method was employed using the Synchro 9 software.

The Existing Year (2016) No Project was utilized as the baseline for comparison to the other two scenarios. The County of Los Angeles criteria for impact thresholds are shown below in Table 5.13-7.

Table 5.13-7 County of Los Angeles Significant Impact Threshold Criteria

LOS	Range of V/C Ratio	Significant Impact Threshold Project V/C Increase
A	0 - .600	0.750
B	> 0.600 – 0.700	0.750
C	> 0.700 – 0.800	0.04 or more
D	> 0.800 – 0.900	0.02 or more
E	> 0.900 – 1.000	0.01 or more
F	> 1.000	0.01 or more

Source: IBI Group, 2017.

City of Los Angeles

Per the traffic impact study guidelines set forth by the City of Los Angeles, the Critical Movement Analysis (CMA) method was utilized to assess intersection performance and impacts. LOS D is generally the minimum level of service for both signalized and unsignalized intersections.

LADOT outlines guidelines for threshold criteria to determine significant traffic impacts. The thresholds used by the City of Los Angeles are consistent with the thresholds used by Los Angeles County, shown above in Table 5.13-7.

City of Torrance

The City of Torrance assesses intersection performance and impacts utilizing the Highway Capacity Manual (HCM) 2000 method. LOS D is generally the minimum level of service for signalized intersections.

The City of Torrance maintains criteria for thresholds of significance, as presented below.

- The project causes a change from LOS D or better to LOS E or F; or
- The project causes a change from LOS E to LOS F; or
- If the intersection is operating at LOS F in the baseline condition, any increase in vehicle delay is taken to be an impact; LOS should be returned to, at least, the pre-project conditions.

City of Carson

The City of Carson assesses intersection performance and impacts using the Intersection Capacity Utilization (ICU) method.

The City of Carson uses the following thresholds of significance to assess project impacts:

- The addition of project trips causes an intersection V/C ratio increase of 0.02 or more; and
- The intersection is projected to operate at LOS E or F under the Future with Project conditions.

Caltrans

Caltrans assesses facility performance and impacts utilizing the Highway Capacity Manual (HCM) 2000 method. Facilities evaluated with this method include freeway terminals (intersections) and off-ramps (queues). LOS C is the minimum level of service for signalized intersections. Caltrans traffic impact analysis guidelines do not specify a minimum LOS for unsignalized intersections, therefore LOS C was taken to be the minimum as well. LOS designations for signalized intersections is presented in Table 5.13-1.

Caltrans traffic impact analysis guidelines do not explicitly define a significant impact in terms of existing level of service and change in that level of service; therefore, a significant impact is considered to occur when:

- The addition of project trips causes a change from LOS C or better to LOS D or worse; or
- The addition of project trips causes a change from LOS D or worse to degrade to a lower LOS.
- If the intersection is operating at LOS F in the baseline condition, any increase in vehicle delay is taken to be an impact; LOS should be returned to, at least, the pre-project conditions.

5.13.3 Existing Conditions

This section presents the Existing Year (2016) No Project scenario conditions of the project study area; this scenario will serve as the base for which all upcoming scenarios are assessed. The study area encompasses arterial roadways and signalized intersections within the project area as well as within a reasonable vicinity. A description of the study roadway segments and intersections and the results of the level of service analysis for the Existing Year (2016) are included in this section.

Existing Roadway Network

Selected arterials that are located in the vicinity of the project corridor are described in this section. Items of note include existing geometry, pedestrian and bicycle facilities, and adjacent land uses.

Torrance Boulevard: Torrance Boulevard is classified as a Secondary Highway on the County's Highway Plan and runs east and west at the northern edge of the Specific Plan boundary. The corridor is surrounded mostly by residential land use with some light industrial and general commercial use. The posted speed limit is 35 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction with a dedicated auxiliary lane in the center. On-street parking is not permitted along the corridor within the project area. Torrance Transit operates a local bus line along a short segment of the corridor.

Vermont Avenue: Vermont Avenue is classified as a Major Highway on the County Highway Plan and runs north and south within the Specific Plan boundary. The corridor is surrounded by a variety of land uses including residential, mixed use, light industrial, and public space. The posted speed limit is 40 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction with a dedicated auxiliary lane in the center. Class II striped bike lanes also exist in each direction within the project area. On-street parking is permitted along much, but not all of the corridor within the project area. Torrance Transit and Metro operate bus lines along the corridor.

Normandie Avenue: Normandie Avenue is classified as a Secondary Highway on the County Highway Plan and runs north and south within the Specific Plan boundary. The corridor is surrounded by a variety of land uses including residential, mixed use, and public space. The posted speed limit is 35 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction with a dedicated auxiliary lane in the center. On-street parking is permitted along much, but not all of the corridor within the project area. Gardena Municipal and Torrance Transit operate bus lines along the corridor.

Carson Street: Carson Street is a Major Highway that runs east and west within the Specific Plan boundary. The corridor is surrounded by mainly mixed use land use and public space within the project area. The posted

speed limit is 35 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction with a dedicated auxiliary lane in the center. On-street parking is permitted along much, but not all of the corridor within the project area. Torrance Transit and Metro operate bus lines along the corridor.

223rd Street: 223rd Street is a Secondary Highway that runs east and west within the Specific Plan boundary. The corridor is surrounded by a variety of land uses including residential, general commercial, light industrial, and public space. The posted speed limit is 25 miles per hour between Normandie Avenue and Vermont Avenue and 35 miles per hour east of Vermont Avenue. Within the project area, the roadway consists of two travel lanes in each direction. On-street parking is permitted along much, but not all of the corridor within the project area.

220th Street: 220th Street runs east and west within the Specific Plan Boundary and is surrounded by a variety of land uses including residential, commercial, and light manufacturing. The posted speed limit is 30 miles per hour. Within in the project area, the roadway consists of one travel lane in each direction. On-street parking is permitted along some, but not all of the corridor.

Meyler Street: Meyler Street runs north and south within the Specific Plan Boundary and is surrounded primarily by residential land uses. The posted speed limit is 25 miles per hour. Within in the project area, the roadway consists of one travel lane in each direction. On-street parking is permitted along some, but not all of the corridor.

Figueroa Street: Figueroa Street is a Major Highway that runs north and south and is surrounded by commercial and residential land uses. The posted speed limit ranges from 25 to 40 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction divided by a center median. On street parking is permitted along most, but not all of the corridor.

Main Street: Main Street is a Major Highway that runs north and south and is surrounded by commercial and residential land uses. The posted speed limit ranges from 25 to 40 miles per hour. Within the project area, the roadway consists of two travel lanes in each direction divided by raised landscaped median. On street parking is permitted along most, but not all of the corridor.

Avalon Boulevard: Avalon Boulevard is a Major Highway that runs north and south and is surrounded by commercial and residential land uses. The posted speed limit ranges from 35 to 40 miles per hour. Within the project area, the roadway consists of three travel lanes in each direction divided by raised landscaped median. On street parking is permitted along some, but not all the corridor.

Thirty-seven existing intersections were selected in consultation with the County of Los Angeles for analysis based on traffic impact and vehicle volumes. Figure 5.13-1, *Project Study Intersections and Links* shows the project location and the intersections and roadway segments (links) analyzed. The existing study intersections are:

1. Normandie Avenue and Torrance Boulevard
2. Vermont Avenue and Torrance Boulevard
3. Figueroa Street and Torrance Boulevard

4. Vermont Avenue and Javelin Avenue
5. Cabrillo Avenue and Carson Street
6. Western Avenue and Carson Street
7. Normandie Avenue and Carson Street
8. Budlong Avenue and Carson Street
9. Berendo Avenue and Carson Street
10. Vermont Avenue and Carson Street
11. Southbound I-110 Ramps and Carson Street
12. Figueroa Street and Carson Street
13. Moneta Avenue and Carson Street
14. Main Street and Carson Street
15. Dolores Street and Carson Street
16. Grace Avenue and Carson Street
17. Avalon Boulevard and Carson Street
18. Bonita Street and Carson Street
19. Southbound I-1405 Ramps and Carson Street
20. Northbound I-1405 Ramps and Carson Street
21. Normandie Avenue and 220th Street
22. Meyler Street and 220th Street
23. Vermont Avenue and 220th Street
24. Figueroa Street and 220th/I-110 Northbound Ramps
25. Western Avenue and 223rd Street
26. Normandie Avenue and 223rd Street
27. Meyler Street and 223rd Street
28. Vermont Avenue and 223rd Street
29. Southbound I-110 Ramps and 223rd Street
30. Figueroa Street and 223rd Street
31. Main Street and 223rd Street
32. Hamilton Avenue and Southbound I-110 Ramps
33. Figueroa Street and Northbound I-110 Ramps
34. Avalon Boulevard and Northbound I-405 Ramps

35. Avalon Boulevard and Southbound I-405 Ramps
36. Western Avenue and Torrance Boulevard
37. Western Avenue and 220th Street

Existing Peak Hour Link Level of Service

The levels of service evaluation for roadway segments during the AM and PM peak hours are presented in Table 5.13-8. The following roadway segments are expected to operate at LOS E or worse:

- Carson Street from Vermont Avenue to Southbound Harbor Freeway Ramp
- Carson Street from Western Avenue to Normandie Avenue

Table 5.13-8 Existing Year (2016) No Project Link Level of Service Analysis

ID	Roadway	Segment		Capacity per Lane	AM/PM	Peak Hour Volume		V/C		LOS	
		From	To			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	Carson Street	Budlong Ave	Berendo Ave	750	AM	787	1354	0.52	0.90	A	D
					PM	1195	1136	0.80	0.76	C	C
2	Carson Street	Vermont Ave	SB Harbor Fwy Ramp	750	AM	903	1648	0.40	**1.10**	A	**F**
					PM	1322	1217	0.59	0.81	A	D
3	Carson Street	Figueroa St	Moneta Ave	750	AM	566	733	0.38	0.49	A	A
					PM	714	644	0.48	0.43	A	A
4	Carson Street	Western Ave	Normandie Ave	750	AM	967	1344	0.64	0.90	B	D
					PM	1396	1148	**0.93**	0.77	**E**	C
5	Normandie Avenue	Torrance Blvd	Carson St	600	AM	925	579	0.77	0.48	C	A
					PM	720	925	0.60	0.77	A	C
6	Normandie Avenue	Carson St	220th St	600	AM	935	635	0.78	0.53	C	A
					PM	654	983	0.55	0.82	A	D
7	Vermont Avenue	Javelin St	Carson St	750	AM	999	792	0.67	0.53	B	A
					PM	679	1053	0.45	0.70	A	B
8	Vermont Avenue	Carson St	220th St	750	AM	1076	792	0.72	0.53	C	A
					PM	764	1062	0.51	0.71	A	C
9	Vermont Avenue	220th St	223rd St	750	AM	1156	636	0.77	0.42	C	A
					PM	580	1199	0.39	0.80	A	C
10	Figueroa Street	Carson St	220th St	750	AM	957	875	0.64	0.58	B	A
					PM	542	1058	0.36	0.71	A	C

Source: IBI Group, 2017
Bold = Unacceptable LOS

Intersections *Existing Level of Service*

The peak hour turning movement volumes utilized in order to assess intersection performance. Intersection performance was determined using the methods outlined in methodology section above. A summary of the

AM and PM peak hour intersection level of service analysis results for the Existing Year (2016) No Project condition is presented in Table 5.13-9.

All thirty-seven study intersections currently operate at an acceptable level of service during both peak hour time periods under their respective standards with the exception of:

- Normandie Avenue and Torrance Boulevard
- Western Avenue and Carson Street
- Figueroa and 220th Street / NB I-110 Ramps
- Western Avenue and 223rd Street
- Hamilton Avenue and SB I-110 Ramps
- Western Avenue and Torrance Boulevard

Table 5.13-9 Existing Year (2016) No Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	AM		PM	
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS
1	Normandie/ Torrance	City of Los Angeles	CMA	Signalized	0.946	E	0.989	E
		County of Los Angeles	ICU	Signalized	0.786	C	0.850	D
2	Vermont/ Torrance	County of Los Angeles	ICU	Signalized	0.782	C	0.770	C
3	Figueroa/ Torrance	City of Carson	ICU	Signalized	0.671	B	0.669	B
4	Vermont/ Javelin	County of Los Angeles	ICU	Signalized	0.507	A	0.373	A
5	Carson/Cabrillo/Cravens	City of Torrance	HCM	Signalized	16.6	B	18.0	B
6	Western/ Carson	City of Torrance	HCM	Signalized	25.0	C	37.4	D
		City of Los Angeles	CMA	Signalized	0.874	D	0.999	E
		Caltrans	HCM	Signalized	25.0	C	37.4	D
7	Normandie/ Carson	City of Los Angeles	CMA	Signalized	0.870	D	0.900	D
		County of Los Angeles	ICU	Signalized	0.747	C	0.773	C
8	Budlong/ Carson	County of Los Angeles	ICU	Signalized	0.450	A	0.388	A
9	Berendo/ Carson	County of Los Angeles	ICU	Signalized	0.456	A	0.427	A
10	Vermont/ Carson	County of Los Angeles	ICU	Signalized	0.758	C	0.702	C
11	SB I-110 Ramps/ Carson	County of Los Angeles	ICU	Signalized	0.724	C	0.665	B
		Caltrans	HCM	Signalized	27.1	C	20.9	C
12	Figueroa/ Carson	City of Carson	ICU	Signalized	0.562	B	0.567	B
13	Moneta/ Carson	City of Carson	ICU	Signalized	0.319	A	0.291	A
14	Main/ Carson	City of Carson	ICU	Signalized	0.378	A	0.501	A
15	Dolores/ Carson	City of Carson	ICU	Signalized	0.295	A	0.339	A

Table 5.13-9 Existing Year (2016) No Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	AM		PM	
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS
16	Grace/ Carson	City of Carson	ICU	Signalized	0.281	A	0.346	A
17	Avalon/ Carson	City of Carson	ICU	Signalized	0.683	B	0.732	C
18	Bonita/ Carson	City of Carson	ICU	Signalized	0.575	A	0.729	C
19	SB I-405 Ramps/ Carson	City of Carson	ICU	Signalized	0.492	A	0.582	A
		Caltrans	HCM	Signalized	8.6	A	7.1	A
20	NB I-405 Ramps/ Carson	City of Carson	ICU	Signalized	0.553	A	0.579	A
		Caltrans	HCM	Signalized	12.0	B	12.4	B
21	Normandie/ 220th	City of Los Angeles	CMA	Signalized	0.439	A	0.442	A
		County of Los Angeles	ICU	Signalized	0.412	A	0.414	A
22	Meyler/ 220th	County of Los Angeles	ICU	AWSC	0.307	A	0.315	A
23	Vermont/ 220th	County of Los Angeles	ICU	Signalized	0.428	A	0.498	A
24	Figueroa/ 220th and NB I-110	City of Carson	ICU	Signalized	0.871	D	0.786	C
		Caltrans	HCM	Signalized	52.6	D	46.1	D
25	Western / 223rd	City of Torrance	HCM	Signalized	27.3	C	29.4	C
		City of Los Angeles	CMA	Signalized	0.881	D	0.930	E
		Caltrans	HCM	Signalized	27.3	C	29.4	C
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.729	C	0.699	B
		County of Los Angeles	ICU	Signalized	0.683	B	0.655	B
27	Meyler/ 223rd	County of Los Angeles	ICU	Signalized	0.593	A	0.523	A
28	Vermont/ 223rd	County of Los Angeles	ICU	Signalized	0.845	D	0.769	C
29	SB I-110 Ramps/ 223rd	County of Los Angeles	ICU	Signalized	0.748	C	0.818	D
		Caltrans	HCM	Signalized	18.6	B	28.4	C
30	Figueroa/ 223rd	City of Carson	ICU	Signalized	0.690	B	0.664	B
31	Main/ 223rd	City of Carson	ICU	Signalized	0.645	B	0.732	C
32	SB I-110 Ramps/ Hamilton	County of Los Angeles	ICU	AWSC	1.032	F	1.1115	F
		Caltrans	HCM	AWSC	49.9	E	128.4	F
33	Figueroa/ NB I-110 Ramps	City of Carson	ICU	Signalized	0.617	B	0.615	B
		Caltrans	HCM	Signalized	26.5	C	20.9	C
34	Avalon/ NB I-405	City of Carson	ICU	Signalized	0.301	A	0.410	A
		Caltrans	HCM	Signalized	15.9	B	15.1	B
35	Avalon/ SB I-405	City of Carson	ICU	Signalized	0.460	A	0.408	A
		Caltrans	HCM	Signalized	11.8	B	10.3	B

Table 5.13-9 Existing Year (2016) No Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	AM		PM	
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS
36	Western/ Torrance	City of Torrance	HCM	Signalized	40.9	D	34.1	C
		City of Los Angeles	CMA	Signalized	0.88	D	0.823	D
		Caltrans	HCM	Signalized	40.9	D	34.1	C
37	Western/ 220th	City of Torrance	HCM	Signalized	7.2	A	14.6	B
		City of Los Angeles	CMA	Signalized	0.591	A	0.807	D
		Caltrans	HCM	Signalized	7.2	A	14.6	B

Source: IBI Group, 2017
AWSC = All Way Stop Control. **Bold** = Intersection operates at an unacceptable LOS using the methodology listed.

CMP Monitoring Station Analysis

The CMP monitoring station analysis results for the AM and PM peak hours are summarized in Table 5.13-10. The analysis was performed in accordance with the methodology outlined above. An unacceptable LOS (LOS F) is observed at the following locations:

- I-405 at Santa Fe Avenue
- I-405 north of Inglewood Avenue

Table 5.13-10 Existing Year (2016) No Project CMP Monitoring Station Analysis

ID	Freeway	Segment	Station	Lanes	Capacity	Direction	AM Peak Hour			PM Peak Hour		
							Volume	V/C	LOS	Volume	V/C	LOS
1	I-110	At Wilmington Blvd s/o C Street	1045	4	8,000	NB	4,348	0.544	C	2,921	0.365	B
						SB	3,176	0.397	B	4,436	0.555	C
2	I-110	At Manchester Blvd	1046	6	12,000	NB	8,479	0.707	C	9,321	0.777	D
						SB	10,330	0.861	D	11,375	0.948	E
3	I-405	At Santa Fe Ave	1066	5	10,000	NB	10,365	1.037	F(0)	9,313	0.931	E
						SB	12,090	1.209	F(0)	15,074	1.507	F(3)
4	I-405	South of I-110	1067	5	10,000	NB	9,065	0.907	D	8,250	0.825	D
						SB	7,438	0.744	C	9,408	0.941	E
5	I-405	North of Inglewood Avenue	1068	5	10,000	NB	8,075	0.808	D	10,015	1.002	F(0)
						SB	10,608	1.061	F(0)	10,390	1.039	F(0)
6	SR-91	East of Alameda Street/Santa Fe Ave	1033	6	12,000	NB	7,978	0.665	C	7,618	0.635	C
						SB	5,800	0.483	B	6,138	0.512	B

Source: IBI Group, 2017
Bold = Unacceptable LOS

Freeway Mainline Analysis

The freeway mainline analysis results for the AM and PM peak hours are summarized in Table 5.13-11. The analysis was conducted using the methodology and settings outlined above. All freeway segments operate at an unacceptable level of service (LOS D or worse) with the exception of:

- SR-91 at Avalon Boulevard
- I-110 at SR-1 (Pacific Coast Highway)

Table 5.13-11 Existing Year (2016) Freeway Mainline Analysis

ID	Freeway	Location	Direction	AM Peak Hour		PM Peak Hour	
				Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
1	SR-91	At Avalon Blvd	EB	14.1	B	21.1	C
			WB	23.9	C	16.5	B
2	I-110	At SR-1 (Pacific Coast Highway)	NB	24.4	C	16.1	B
			SB	17.3	B	24.1	C
3	I-110	At Sepulveda Boulevard	NB	**30.7**	D	19.5	C
			SB	20.7	C	29.0	C
4	I-110	At El Segundo Boulevard	NB	23.6	C	22.8	C
			SB	**30.3**	D	29.7	D
5	I-405	At I-710	NB	**45.7**	F	**35.9**	E
			SB	**37.9**	E	**70.9**	F
6	I-405	South of I-110 (Carson Scales)	NB	25	C	22.3	C
			SB	19.8	C	26.2	D
7	I-405	At Western Avenue	NB	**26.2**	D	**28.1**	D
			SB	**27.5**	D	**31.9**	D

Source: IBI Group, June 2017
Bold = Unacceptable LOS (LOS D or worse). Pc/mi/ln = passenger-car mile per lane

Freeway Off-Ramp Queue Analysis

Per Caltrans traffic study guidelines, a queue analysis for freeway off-ramps at intersections of interest is provided. Table 5.13-12 summarizes the storage capacities and queue lengths expected for these off-ramps. All freeway off-ramps provide sufficient storage capacity such that the 85% storage capacity is not exceeded by expected queues. The off-ramps evaluated in Existing Year (2016) scenarios are listed below:

- Southbound I-110 Off-Ramp at Carson Street
- Southbound I-405 Off-Ramp at Carson Street
- Northbound I-405 Off-Ramp at Carson Street
- Northbound I-110 Off-Ramp/220th Street at Figueroa Street

- Southbound I-110 Off-Ramp at 223rd Street
- Southbound I-110 Off-Ramp at Hamilton Avenue
- Northbound I-110 Off-Ramp at Figueroa Street
- Northbound I-405 Off-Ramp at Avalon Boulevard
- Southbound I-405 Off-Ramp at Avalon Boulevard

This page intentionally left blank

Table 5.13-12 Existing Year (2016) No Project Off-ramp Queue Analysis

ID	Ramp	Cross Street	Ramp Length (ft)	85% Ramp Length (ft)	Ramp Turn Lanes at Intersection			AM Queue		PM Queue		Queue Exceeds 85% Storage?	
					Lanes	Movement	Length	Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	AM	PM
11	I-110 SB Off-Ramp	Carson Street	980	830	2	Left	980	60	483	99	320	No	No
						Right	380	483		320			
19	I-405 SB Off-Ramp	Carson Street	1,100	940	2	Left	660	41	41	28	28	No	No
						Right	1,100	41		19			
20	I-405 NB Off-Ramp	Carson Street	1,200	1,020	2	Through/Left	1,200	26	118	30	128	No	No
						Right	620	118		128			
24	I-110 NB Off-Ramp	Figueroa Street	1,150	980	2	Through/Left	1,150	397	397	408	408	No	No
						Right	530	0		14			
29	I-110 SB Off-Ramp	223rd Street	935	800	2	Through/Left	935	228	228	358	358	No	No
						Right/Through	405	228		358			
32	I-110 SB Off-Ramp	Hamilton Avenue	890	760	3	Left	890	325	325	68	68	No	No
						Left	355	325		68			
						Right	40	40		20			
33	I-110 NB Off-Ramp	Figueroa Street	880	750	2	Left	880	403	403	158	158	No	No
						Right/Left	340	206		70			
34	I-405 NB Off-Ramp	Avalon Boulevard	980	830	3	Left	980	26	219	41	133	No	No
						Through/Left	320	26		41			
						Right	320	219		133			
35	I-405 SB Off-Ramp	Avalon Boulevard	390	330	5	Left	390	66	207	43	127	No	No
						Left	390	66		43			
						Through	390	3		23			
						Through	390	3		23			
						Right	240	207		127			

Source: IBI Group, June 2017
Bold = Unacceptable LOS

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

This page intentionally left blank

Vehicle Miles Traveled (VMT) Analysis

VMT calculations were prepared based on the land use characteristics in the Existing Year (2016) No Project scenario using the existing land use zoning map. A summary of the results for this scenario is presented in Table 5.13-13.

Table 5.13-13 Existing Year (2016) Vehicle Miles Travelled (VMT)

Land Use	Average Daily Trip Rate			Annual VMT	Population/ Employees	Annual VMT per Capita
	Weekday	Saturday	Sunday			
Apartments (Mid-Rise)	2,287.60	2,198.16	2,015.84	7,640,752	955	8,001
General Light Industry	1,314.26	248.90	128.22	4,395,658	182	24,152
General Office Building	807.62	180.12	76.88	1,976,636	151	13,090
Hospital	10,747.33	8,275.93	7,243.47	38,356,399	5,637	6,804
Single Family Housing	9,129.68	9,503.69	8,266.58	30,958,747	2,924	10,588
Strip Mall	14,589.70	13,839.15	6,725.35	25,416,771	394	64,510
Unrefrigerated Warehouse- No Rail	502.44	502.44	502.44	2,153,305	279	7,718
Total	39,378.63	34,748.39	24,958.78	110,898,268	10,522	134,863

Source: IBI Group, June 2017

5.13.4 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project could:

T-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.

T-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.

T-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.

T-4 Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

T-5 Result in inadequate emergency access.

T-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.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold T-4, T-5, T-6

These impacts will not be addressed in the following analysis.

5.13.5 Plans, Programs, and Policies

5.13.5.1 Regulatory Requirements

RR TRANS-1 The Proposed Project's construction activities will be conducted in accordance with the provision of traffic-control devices in compliance with the California Manual for Uniform Traffic Control Devices (MUTCD) to ensure traffic safety on public streets, highways, pedestrian walkways, and bikeways.

RR TRANS-2 The Proposed Project's construction activities on public rights-of-way will be conducted in accordance with the current standard Specifications for Public Works construction, including traffic control provisions.

5.13.6 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

TRANS 5.13-1: Project would not result in a significant increase in Intersection and Roadway Level of Service. [Threshold T-1]

Impact Analysis:

Project Trip Generation

The trip generation for the West Carson Traffic Study has been estimated using rates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition. The proposed project volumes were calculated by subtracting the generated trips under the existing land use from the proposed land use zoning. Trip reductions were also applied to account for pass-by, internal capture, and/or TDM reductions, the methodology is described in detail in Section 6.1 of the TIA.

The project is expected to generate 29,488 daily trips, with 2,989 trips (2,178 inbound / 811 outbound) during the AM peak hour and 2,745 trips (826 inbound / 1,919 outbound). The trip generation for the existing land use zoning, proposed land use zoning, and project are presented in Table 5.13-14, below:

Table 5.13-14 Project Trip Generation

Land Use Zoning	Daily	AM			PM		
		In	Out	Total	In	Out	Total
Existing	29,508	894	966	1,860	1,150	1,225	2,375
Proposed	78,618	3,558	2,047	5,605	2,492	4,063	6,555
Project (net)	49,110	2,664	1,081	3,745	1,342	2,838	4,180

Source: IBI, 2017

Intersections Level of Service

Existing Plus Project Conditions Intersections Level of Service

Study intersections were evaluated to determine if they were significantly impacted by the addition of project-generated traffic. A summary of the AM and PM peak hour intersection level of service analysis results for the Existing Year (2016) With Project condition is presented in Table 5.13-15. The significant impact thresholds used to determine the impacts are summarized in the methodology section, above.

The following fourteen intersections are expected to be significantly impacted due to the addition of project traffic:

- Normandie Avenue and Torrance Boulevard
- Vermont Avenue and Torrance Boulevard
- Western Avenue and Carson Street
- Normandie Avenue and Carson Street
- Vermont Avenue and Carson Street
- Southbound I-110 Ramps and Carson Street
- Figueroa Street and 220th Street / Northbound I-110 Ramps
- Western Avenue and 223rd Street
- Meyler Street and 223rd Street
- Vermont Avenue and 223rd Street
- Southbound I-110 Ramps and 223rd Street
- Hamilton Avenue and Southbound I-110 Ramps
- Western Avenue and Torrance Boulevard
- Western Avenue and 220th Street

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

This page intentionally left blank

Table 5.13-15 Existing Year (2016) with Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	No Project		With Project		Change in V/C or Delay	Significant Impact?
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS		
AM										
1	Normandie/ Torrance	City of Los Angeles	CMA	Signalized	0.946	E	0.965	E	0.019	Yes
		County of Los Angeles	ICU	Signalized	0.786	C	0.796	C	0.010	No
2	Vermont/ Torrance	County of Los Angeles	ICU	Signalized	0.782	C	0.888	D	0.106	Yes
3	Figueroa/ Torrance	City of Carson	ICU	Signalized	0.671	B	0.701	C	0.030	No
4	Vermont/ Javelin	County of Los Angeles	ICU	Signalized	0.507	A	0.633	B	0.126	No
5	Carson/Cabrillo/Cravens	City of Torrance	HCM	Signalized	16.6	B	17.4	B	0.8	No
6	Western/ Carson	City of Torrance	HCM	Signalized	25.0	C	30.0	C	5.0	No
		City of Los Angeles	CMA	Signalized	0.874	D	0.930	E	0.056	Yes
		Caltrans	HCM	Signalized	25.0	C	30.0	C	5.0	No
7	Normandie/ Carson	City of Los Angeles	CMA	Signalized	0.870	D	0.896	D	0.026	Yes
		County of Los Angeles	ICU	Signalized	0.747	C	0.770	C	0.023	No
8	Budlong/ Carson	County of Los Angeles	ICU	Signalized	0.450	A	0.512	A	0.062	No
9	Berendo/ Carson	County of Los Angeles	ICU	Signalized	0.456	A	0.627	B	0.171	No
10	Vermont/ Carson	County of Los Angeles	ICU	Signalized	0.758	C	1.026	F	0.268	Yes
11	SB I-110 Ramps/ Carson	County of Los Angeles	ICU	Signalized	0.724	C	1.086	F	0.362	Yes
		Caltrans	HCM	Signalized	27.1	C	103.0	F	75.9	Yes
12	Figueroa/ Carson	City of Carson	ICU	Signalized	0.562	A	0.703	C	0.141	No
13	Moneta/ Carson	City of Carson	ICU	Signalized	0.319	A	0.401	A	0.082	No
14	Main/ Carson	City of Carson	ICU	Signalized	0.378	A	0.452	A	0.074	No
15	Dolores/ Carson	City of Carson	ICU	Signalized	0.295	A	0.355	A	0.060	No
16	Grace/ Carson	City of Carson	ICU	Signalized	0.281	A	0.349	A	0.068	No
17	Avalon/ Carson	City of Carson	ICU	Signalized	0.683	B	0.704	C	0.021	No
18	Bonita/ Carson	City of Carson	ICU	Signalized	0.575	A	0.593	A	0.018	No
19	SB I-405 Ramps/ Carson	City of Carson	ICU	Signalized	0.492	A	0.503	A	0.011	No
		Caltrans	HCM	Signalized	8.6	A	7.4	A	-1.2	No
20	NB I-405 Ramps/ Carson	City of Carson	ICU	Signalized	0.553	A	0.615	B	0.062	No
		Caltrans	HCM	Signalized	12.0	B	13.8	B	1.8	No

Table 5.13-15 Existing Year (2016) with Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	No Project		With Project		Change in V/C or Delay	Significant Impact?
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS		
21	Normandie/ 220th	City of Los Angeles	CMA	Signalized	0.439	A	0.508	A	0.069	No
		County of Los Angeles	ICU	Signalized	0.412	A	0.476	A	0.064	No
22	Meyler/ 220th	County of Los Angeles	ICU	AWSC	0.307	A	0.472	A	0.165	No
23	Vermont/ 220th	County of Los Angeles	ICU	Signalized	0.428	A	0.538	A	0.110	No
24	Figueroa/ 220th and NB I-110	City of Carson	ICU	Signalized	0.871	D	1.153	F	0.282	Yes
		Caltrans	HCM	Signalized	52.6	D	89.9	F	37.3	Yes
25	Western / 223rd	City of Torrance	HCM	Signalized	27.3	C	35.5	D	8.2	No
		City of Los Angeles	CMA	Signalized	0.881	D	0.981	E	0.100	Yes
		Caltrans	HCM	Signalized	27.3	C	35.5	D	8.2	Yes
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.729	C	0.741	C	0.012	No
		County of Los Angeles	ICU	Signalized	0.683	B	0.694	B	0.011	No
27	Meyler/ 223rd	County of Los Angeles	ICU	Signalized	0.593	A	0.817	D	0.224	Yes
28	Vermont/ 223rd	County of Los Angeles	ICU	Signalized	0.845	D	1.119	F	0.274	Yes
29	SB I-110 Ramps/ 223rd	County of Los Angeles	ICU	Signalized	0.748	C	1.036	F	0.288	Yes
		Caltrans	HCM	Signalized	18.6	B	42.3	D	23.7	Yes
30	Figueroa/ 223rd	City of Carson	ICU	Signalized	0.690	B	0.875	D	0.185	No
31	Main/ 223rd	City of Carson	ICU	Signalized	0.645	B	0.678	B	0.033	No
32	SB I-110 Ramps/ Hamilton	County of Los Angeles	ICU	AWSC	1.032	F	1.404	F	0.372	Yes
		Caltrans	HCM	AWSC	49.9	E	140.5	F	90.6	Yes
33	Figueroa/ NB I-110 Ramps	City of Carson	ICU	Signalized	0.617	B	0.671	B	0.054	No
		Caltrans	HCM	Signalized	26.5	C	30.0	C	3.5	No
34	Avalon/ NB I-405	City of Carson	ICU	Signalized	0.301	A	0.315	A	0.014	No
		Caltrans	HCM	Signalized	15.9	B	15.9	B	0.0	No
35	Avalon/ SB I-405	City of Carson	ICU	Signalized	0.460	A	0.466	A	0.006	No
		Caltrans	HCM	Signalized	11.8	B	12.1	B	0.3	No
36	Western/ Torrance	City of Torrance	HCM	Signalized	40.9	D	41.4	D	0.5	No
		City of Los Angeles	CMA	Signalized	0.88	D	0.884	D	0.004	No
		Caltrans	HCM	Signalized	40.9	D	41.4	D	0.5	No

Table 5.13-15 Existing Year (2016) with Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	No Project		With Project		Change in V/C or Delay	Significant Impact?
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS		
37	Western/ 220th	City of Torrance	HCM	Signalized	7.2	A	8.9	A	1.7	No
		City of Los Angeles	CMA	Signalized	0.591	A	0.662	B	0.071	No
		Caltrans	HCM	Signalized	7.2	A	8.9	A	1.7	No
PM										
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	0.989	E	0.989	E	0.000	No
		County of Los Angeles	ICU	Signalized	0.850	D	0.850	D	0.000	No
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.770	C	0.911	E	0.141	Yes
3	Figueroa / Torrance	City of Carson	ICU	Signalized	0.669	B	0.736	C	0.067	No
4	Vermont / Javelin	County of Los Angeles	ICU	Signalized	0.373	A	0.527	A	0.154	No
5	Carson / Cabrillo / Cravens	City of Torrance	HCM	Signalized	18.0	B	19.9	B	1.9	No
6	Western / Carson	City of Torrance	HCM	Signalized	37.4	D	51.3	D	13.9	No
		City of Los Angeles	CMA	Signalized	0.999	E	1.093	F	0.094	Yes
		Caltrans	HCM	Signalized	37.4	D	51.3	D	13.900	No
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	0.900	D	0.962	E	0.062	Yes
		County of Los Angeles	ICU	Signalized	0.773	C	0.827	D	0.054	Yes
8	Budlong / Carson	County of Los Angeles	ICU	Signalized	0.388	A	0.482	A	0.094	No
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.427	A	0.741	C	0.314	No
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.702	C	0.974	E	0.272	Yes
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.665	B	0.897	D	0.232	No
		Caltrans	HCM	Signalized	20.9	C	60.5	E	39.6	Yes
12	Figueroa / Carson	City of Carson	ICU	Signalized	0.567	A	0.795	C	0.228	No
13	Moneta / Carson	City of Carson	ICU	Signalized	0.291	A	0.363	A	0.072	No
14	Main / Carson	City of Carson	ICU	Signalized	0.501	A	0.554	A	0.053	No
15	Dolores / Carson	City of Carson	ICU	Signalized	0.339	A	0.399	A	0.060	No
16	Grace / Carson	City of Carson	ICU	Signalized	0.346	A	0.406	A	0.060	No
17	Avalon / Carson	City of Carson	ICU	Signalized	0.732	C	0.780	C	0.048	No
18	Bonita / Carson	City of Carson	ICU	Signalized	0.729	C	0.772	C	0.043	No
19	SB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.582	A	0.606	B	0.024	No

Table 5.13-15 Existing Year (2016) with Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	No Project		With Project		Change in V/C or Delay	Significant Impact?
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS		
		Caltrans	HCM	Signalized	7.1	A	7.3	A	0.2	No
20	NB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.579	A	0.603	B	0.024	No
		Caltrans	HCM	Signalized	12.4	B	13.0	B	0.6	No
21	Normandie / 220th	City of Los Angeles	CMA	Signalized	0.442	A	0.470	A	0.028	No
		County of Los Angeles	ICU	Signalized	0.414	A	0.441	A	0.027	No
22	Meyler / 220th	County of Los Angeles	HCM	AWSC	0.315	A	0.499	A	0.184	No
23	Vermont / 220th	County of Los Angeles	ICU	Signalized	0.498	A	0.613	B	0.115	No
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	0.786	C	1.237	F	0.451	Yes
		Caltrans	HCM	Signalized	46.1	D	134.4	F	88.3	Yes
25	Western / 223rd	City of Torrance	HCM	Signalized	29.4	C	31.3	C	1.9	No
		City of Los Angeles	CMA	Signalized	0.930	E	0.941	E	0.011	Yes
		Caltrans	HCM	Signalized	29.4	C	31.3	C	1.9	No
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.699	B	0.724	C	0.025	No
		County of Los Angeles	ICU	Signalized	0.655	B	0.678	B	0.023	No
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.523	A	0.694	B	0.171	No
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.769	C	1.009	F	0.240	Yes
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.818	D	1.028	F	0.210	Yes
		Caltrans	HCM	Signalized	28.4	C	64.3	E	35.9	Yes
30	Figueroa / 223rd	City of Carson	ICU	Signalized	0.664	B	0.827	D	0.163	No
31	Main / 223rd	City of Carson	ICU	Signalized	0.732	C	0.762	C	0.030	No
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	1.115	F	1.173	F	0.058	Yes
		Caltrans	HCM	AWSC	128.4	F	139.0	F	10.6	Yes
33	Figueroa / NB I-110 Ramps	City of Carson	ICU	Signalized	0.615	B	0.743	C	0.128	No
		Caltrans	HCM	Signalized	20.9	C	27.9	C	7.0	No
34	Avalon / NB I-405	City of Carson	ICU	Signalized	0.410	A	0.415	A	0.005	No
		Caltrans	HCM	Signalized	15.1	B	15.2	B	0.1	No
35	Avalon / SB I-405	City of Carson	ICU	Signalized	0.408	A	0.420	A	0.012	No
		Caltrans	HCM	Signalized	10.3	B	10.5	B	0.2	No

Table 5.13-15 Existing Year (2016) with Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	No Project		With Project		Change in V/C or Delay	Significant Impact?
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS		
36	Western / Torrance	City of Torrance	HCM	Signalized	34.1	C	36.4	D	2.3	No
		City of Los Angeles	CMA	Signalized	0.823	D	0.836	D	0.013	No
		Caltrans	HCM	Signalized	34.1	C	**36.4**	**D**	2.3	Yes
37	Western / 220th	City of Torrance	HCM	Signalized	14.6	B	15	B	0.4	No
		City of Los Angeles	CMA	Signalized	0.807	D	0.848	D	0.041	Yes
		Caltrans	HCM	Signalized	14.6	B	15	B	0.4	No

Source: IBI Group, 2017
AWSC = All Way Stop Control. **Bold** = Intersection operates at an unacceptable LOS using the methodology listed.

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

This page intentionally left blank.

Future Year Plus Project Conditions Intersections Level of Service

Study intersections were evaluated to determine if they were significantly impacted by the addition of project-generated traffic. A summary of the AM and PM peak hour intersection level of service analysis results for the Future Year (2035) With Project condition is presented in Table 5.13-16. The intersection impact thresholds are outlined in Section 3.

The following seventeen intersections are expected to be significantly impacted by project traffic:

- Normandie Avenue and Torrance Boulevard
- Vermont Avenue and Torrance Boulevard
- Western Avenue and Carson Street
- Normandie Avenue and Carson Street
- Berendo Avenue and Carson Street
- Vermont Avenue and Carson Street
- SB I-110 Ramps and Carson Street
- Figueroa Street and 220th Street / NB I-110 Ramps
- Western Avenue and 223rd Street
- Normandie Avenue and 223rd Street
- Meyler Street and 223rd Street
- Vermont Avenue and 223rd Street
- SB I-110 Ramps and 223rd Street
- Figueroa Street and 223rd Street
- Hamilton Avenue and SB I-110 Ramps
- Western Avenue and Torrance Boulevard
- Western Avenue and 220th Street

This page intentionally left blank

Table 5.13-16 Future Year (2035) with Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	Future No Project		Future with Project		Change in V/C or Delay	Significant Impact?
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS		
AM										
1	Normandie/ Torrance	City of Los Angeles	CMA	Signalized	1.065	F	1.085	F	0.020	Yes
		County of Los Angeles	ICU	Signalized	0.786	C	0.895	D	0.109	Yes
2	Vermont/ Torrance	County of Los Angeles	ICU	Signalized	0.782	C	0.970	E	0.188	Yes
3	Figueroa/ Torrance	City of Carson	ICU	Signalized	0.756	C	0.784	C	0.028	No
4	Vermont/ Javelin	County of Los Angeles	ICU	Signalized	0.507	A	0.697	B	0.190	No
5	Carson/Cabrillo/Cravens	City of Torrance	HCM	Signalized	20.7	C	21.7	C	1.0	No
6	Western/ Carson	City of Torrance	HCM	Signalized	33.6	C	42.6	D	9.0	No
		City of Los Angeles	CMA	Signalized	0.985	E	1.040	F	0.055	Yes
		Caltrans	HCM	Signalized	33.6	C	42.6	D	9.0	Yes
7	Normandie/ Carson	City of Los Angeles	CMA	Signalized	0.980	D	1.006	F	0.026	Yes
		County of Los Angeles	ICU	Signalized	0.747	C	0.864	D	0.117	Yes
8	Budlong/ Carson	County of Los Angeles	ICU	Signalized	0.450	A	0.569	A	0.119	No
9	Berendo/ Carson	County of Los Angeles	ICU	Signalized	0.456	A	0.669	B	0.213	No
10	Vermont/ Carson	County of Los Angeles	ICU	Signalized	0.758	C	1.121	F	0.363	Yes
11	SB I-110 Ramps/ Carson	County of Los Angeles	ICU	Signalized	0.724	C	1.177	F	0.453	Yes
		Caltrans	HCM	Signalized	38.2	D	138.2	F	100.0	Yes
12	Figueroa/ Carson	City of Carson	ICU	Signalized	0.633	B	0.774	C	0.141	No
13	Moneta/ Carson	City of Carson	ICU	Signalized	0.359	A	0.441	A	0.082	No
14	Main/ Carson	City of Carson	ICU	Signalized	0.426	A	0.500	A	0.074	No
15	Dolores/ Carson	City of Carson	ICU	Signalized	0.332	A	0.392	A	0.060	No
16	Grace/ Carson	City of Carson	ICU	Signalized	0.317	A	0.385	A	0.068	No
17	Avalon/ Carson	City of Carson	ICU	Signalized	0.770	C	0.791	C	0.021	No
18	Bonita/ Carson	City of Carson	ICU	Signalized	0.648	B	0.666	B	0.018	No
19	SB I-405 Ramps/ Carson	City of Carson	ICU	Signalized	0.554	A	0.564	A	0.010	No
		Caltrans	HCM	Signalized	7.9	A	7.8	A	-0.1	No
20	NB I-405 Ramps/ Carson	City of Carson	ICU	Signalized	0.623	B	0.685	B	0.062	No
		Caltrans	HCM	Signalized	14.2	B	17.8	B	3.6	No

Table 5.13-16 Future Year (2035) with Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	Future No Project		Future with Project		Change in V/C or Delay	Significant Impact?
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS		
21	Normandie/ 220th	City of Los Angeles	CMA	Signalized	0.495	A	0.563	A	0.068	No
		County of Los Angeles	ICU	Signalized	0.412	A	0.528	A	0.116	No
22	Meyler/ 220th	County of Los Angeles	ICU	AWSC	0.307	A	0.522	A	0.215	No
23	Vermont/ 220th	County of Los Angeles	ICU	Signalized	0.428	A	0.606	B	0.178	No
24	Figueroa/ 220th and NB I-110	City of Carson	ICU	Signalized	0.981	E	1.263	F	0.282	Yes
		Caltrans	HCM	Signalized	65.6	E	114.3	F	48.7	Yes
25	Western / 223rd	City of Torrance	HCM	Signalized	38.7	D	53.7	D	15.0	No
		City of Los Angeles	CMA	Signalized	0.992	E	1.092	F	0.100	Yes
		Caltrans	HCM	Signalized	38.7	D	53.7	D	15.000	No
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.821	D	0.833	D	0.012	No
		County of Los Angeles	ICU	Signalized	0.683	B	0.780	C	0.097	No
27	Meyler/ 223rd	County of Los Angeles	ICU	Signalized	0.593	A	0.891	D	0.298	No
28	Vermont/ 223rd	County of Los Angeles	ICU	Signalized	0.845	D	1.226	F	0.381	Yes
29	SB I-110 Ramps/ 223rd	County of Los Angeles	ICU	Signalized	0.748	C	1.130	F	0.382	Yes
		Caltrans	HCM	Signalized	25.9	C	62.0	E	36.1	Yes
30	Figueroa/ 223rd	City of Carson	ICU	Signalized	0.778	C	0.959	E	0.181	Yes
31	Main/ 223rd	City of Carson	ICU	Signalized	0.727	C	0.760	C	0.033	No
32	SB I-110 Ramps/ Hamilton	County of Los Angeles	ICU	AWSC	1.032	F	1.576	F	0.544	Yes
		Caltrans	HCM	AWSC	78.0	F	183.5	F	105.5	Yes
33	Figueroa/ NB I-110 Ramps	City of Carson	ICU	Signalized	0.695	B	0.749	C	0.054	No
		Caltrans	HCM	Signalized	31.2	C	34.8	C	3.6	No
34	Avalon/ NB I-405	City of Carson	ICU	Signalized	0.352	A	0.366	A	0.014	No
		Caltrans	HCM	Signalized	18.4	B	18.3	B	-0.1	No
35	Avalon/ SB I-405	City of Carson	ICU	Signalized	0.519	A	0.524	A	0.005	No
		Caltrans	HCM	Signalized	14.4	B	15	B	0.6	No
36	Western/ Torrance	City of Torrance	HCM	Signalized	55.1	E	55.8	E	0.7	Yes
		City of Los Angeles	CMA	Signalized	0.991	E	0.995	E	0.004	No
		Caltrans	HCM	Signalized	55.1	E	55.8	E	0.7	No

Table 5.13-16 Future Year (2035) with Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	Future No Project		Future with Project		Change in V/C or Delay	Significant Impact?
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS		
37	Western/ 220th	City of Torrance	HCM	Signalized	8.4	A	11.3	B	2.9	No
		City of Los Angeles	CMA	Signalized	0.666	B	0.737	C	0.071	No
		Caltrans	HCM	Signalized	8.4	A	11.3	B	2.9	No
PM										
1	Normandie / Torrance	City of Los Angeles	CMA	Signalized	1.113	F	1.113	F	0.000	No
		County of Los Angeles	ICU	Signalized	0.850	D	0.957	E	0.107	Yes
2	Vermont / Torrance	County of Los Angeles	ICU	Signalized	0.770	C	0.989	E	0.219	Yes
3	Figueroa / Torrance	City of Carson	ICU	Signalized	0.754	C	0.820	D	0.066	No
4	Vermont / Javelin	County of Los Angeles	ICU	Signalized	0.373	A	0.575	A	0.202	No
5	Carson / Cabrillo / Cravens	City of Torrance	HCM	Signalized	22.1	C	26.2	C	4.1	No
6	Western / Carson	City of Torrance	HCM	Signalized	56.9	E	75.7	E	18.8	Yes
		City of Los Angeles	CMA	Signalized	1.124	F	1.220	F	0.096	Yes
		Caltrans	HCM	Signalized	56.9	E	75.7	E	18.8	No
7	Normandie / Carson	City of Los Angeles	CMA	Signalized	1.013	F	1.076	F	0.063	Yes
		County of Los Angeles	ICU	Signalized	0.773	C	0.924	E	0.151	Yes
8	Budlong / Carson	County of Los Angeles	ICU	Signalized	0.388	A	0.529	A	0.141	No
9	Berendo / Carson	County of Los Angeles	ICU	Signalized	0.427	A	0.795	C	0.368	No
10	Vermont / Carson	County of Los Angeles	ICU	Signalized	0.702	C	1.050	F	0.348	Yes
11	SB I-110 Ramps / Carson	County of Los Angeles	ICU	Signalized	0.665	B	0.981	E	0.316	No
		Caltrans	HCM	Signalized	31.6	C	92.4	F	60.8	Yes
12	Figueroa / Carson	City of Carson	ICU	Signalized	0.639	B	0.867	D	0.228	No
13	Moneta / Carson	City of Carson	ICU	Signalized	0.328	A	0.400	A	0.072	No
14	Main / Carson	City of Carson	ICU	Signalized	0.564	A	0.618	B	0.054	No
15	Dolores / Carson	City of Carson	ICU	Signalized	0.382	A	0.442	A	0.060	No
16	Grace / Carson	City of Carson	ICU	Signalized	0.390	A	0.450	A	0.060	No
17	Avalon / Carson	City of Carson	ICU	Signalized	0.824	D	0.873	D	0.049	No
18	Bonita / Carson	City of Carson	ICU	Signalized	0.822	D	0.864	D	0.042	No
19	SB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.656	B	0.680	B	0.024	No

Table 5.13-16 Future Year (2035) with Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	Future No Project		Future with Project		Change in V/C or Delay	Significant Impact?
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS		
		Caltrans	HCM	Signalized	8.7	A	9.1	A	0.4	No
20	NB I-405 Ramps / Carson	City of Carson	ICU	Signalized	0.653	B	0.676	B	0.023	No
		Caltrans	HCM	Signalized	13.8	B	14.5	B	0.7	No
21	Normandie / 220th	City of Los Angeles	CMA	Signalized	0.498	A	0.526	A	0.028	No
		County of Los Angeles	ICU	Signalized	0.414	A	0.493	A	0.079	No
22	Meyler / 220th	County of Los Angeles	HCM	AWSC	0.315	A	0.537	A	0.222	No
23	Vermont / 220th	County of Los Angeles	ICU	Signalized	0.498	A	0.674	B	0.176	No
24	Figueroa / 220th and NB I-110	City of Carson	ICU	Signalized	0.886	D	1.337	F	0.451	Yes
		Caltrans	HCM	Signalized	58.3	E	168.3	F	110.0	Yes
25	Western / 223rd	City of Torrance	HCM	Signalized	47.3	D	51.6	D	4.3	No
		City of Los Angeles	CMA	Signalized	1.049	F	1.059	F	0.010	Yes
		Caltrans	HCM	Signalized	47.3	D	51.6	D	4.300	No
26	Normandie / 223rd	City of Los Angeles	CMA	Signalized	0.787	C	0.812	D	0.025	No
		County of Los Angeles	ICU	Signalized	0.655	B	0.761	C	0.106	No
27	Meyler / 223rd	County of Los Angeles	ICU	Signalized	0.523	A	0.760	C	0.237	No
28	Vermont / 223rd	County of Los Angeles	ICU	Signalized	0.769	C	1.116	F	0.347	Yes
29	SB I-110 Ramps / 223rd	County of Los Angeles	ICU	Signalized	0.818	D	1.130	F	0.312	Yes
		Caltrans	HCM	Signalized	46.7	D	97.6	F	50.9	Yes
30	Figueroa / 223rd	City of Carson	ICU	Signalized	0.748	C	0.901	E	0.153	Yes
31	Main / 223rd	City of Carson	ICU	Signalized	0.824	D	0.854	D	0.030	No
32	SB I-110 Ramps / Hamilton	County of Los Angeles	ICU	AWSC	1.115	F	1.351	F	0.236	Yes
		Caltrans	HCM	AWSC	184.2	F	195.9	F	11.7	Yes
33	Figueroa / NB I-110 Ramps	City of Carson	ICU	Signalized	0.693	B	0.821	D	0.128	No
		Caltrans	HCM	Signalized	24.3	C	34.2	C	9.9	No
34	Avalon / NB I-405	City of Carson	ICU	Signalized	0.461	A	0.466	A	0.005	No
		Caltrans	HCM	Signalized	18.1	B	18.1	B	0.0	No
35	Avalon / SB I-405	City of Carson	ICU	Signalized	0.460	A	0.472	A	0.012	No
		Caltrans	HCM	Signalized	11.8	B	12.1	B	0.3	No

Table 5.13-16 Future Year (2035) with Project Intersection LOS

ID	Intersection	Jurisdiction	Analysis Method	Intersection Control	Future No Project		Future with Project		Change in V/C or Delay	Significant Impact?
					V/C or Delay (sec)	LOS	V/C or Delay (sec)	LOS		
36	Western / Torrance	City of Torrance	HCM	Signalized	43.9	D	48.1	D	4.2	No
		City of Los Angeles	CMA	Signalized	0.927	E	0.940	E	0.013	Yes
		Caltrans	HCM	Signalized	43.9	D	48.1	D	4.2	No
37	Western / 220th	City of Torrance	HCM	Signalized	20.3	C	22.0	C	1.7	No
		City of Los Angeles	CMA	Signalized	0.909	E	0.951	E	0.042	Yes
		Caltrans	HCM	Signalized	20.3	C	22.0	C	1.7	No

Source: IBI Group, 2017
AWSC = All Way Stop Control. **Bold** = Intersection operates at an unacceptable LOS using the methodology listed.

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

This page intentionally left blank

Peak Hour Roadway Segments Level of Service

Existing (2016) Plus Project Conditions

The peak hour link volumes are derived from the turning movement volumes; more specifically, the arriving and departing volumes between two intersections that the link of interest joins. In the event that the departures of one intersection did not equal the arrivals of the second intersection, an average of the two volumes was taken to be the link volume experienced. A loss, or even gain, in volumes between two intersections is not uncommon, especially in situations where additional intersections or driveways are present between the intersections of interest. The following links are expected to be operate at LOS E or worse:

- Carson Street from Budlong Avenue to Berendo Avenue
- Carson Street from Vermont Avenue to I-110 SB Ramp
- Carson Street from Western Avenue to Normandie Avenue
- Vermont Avenue from Javelin Street to Carson Street
- Vermont Avenue from 220th Street to 223rd Street
- Figueroa Street from Carson Street to 220th Street

Table 5.13-17 presents existing year plus project peak hour roadway segment analysis.

This page intentionally left blank

Table 5.13-17 Existing Year (2016) with Project Link Level of Service Analysis

ID	Roadway	Segment		Capacity per Lane	Direction	Existing No Project			Existing With Project			Increase in V/C
		From	To			Volumes	V/C Ratio	LOS	Volumes	V/C Ratio	LOS	
AM												
1	Carson Street	Budlong Ave	Berendo Ave	750	NB/EB	787	0.52	A	996	0.66	B	0.14
					SB/WB	1354	0.90	D	1508	1.01	F	0.10
2	Carson Street	Vermont Ave	SB Harbor Fwy Ramp	750	NB/EB	903	0.40	A	1196	0.53	A	0.13
					SB/WB	1648	1.10	F	2433	1.62	F	0.52
3	Carson Street	Figueroa St	Moneta Ave	750	NB/EB	566	0.38	A	664	0.44	A	0.07
					SB/WB	733	0.49	A	995	0.66	B	0.17
4	Carson Street	Western Ave	Normandie Ave	750	NB/EB	967	0.64	B	1164	0.78	C	0.13
					SB/WB	1,344	0.90	D	1418	0.95	E	0.05
5	Normandie Avenue	Torrance Blvd	Carson St	600	NB/EB	925	0.77	C	936	0.78	C	0.01
					SB/WB	579	0.48	A	584	0.49	A	0.00
6	Normandie Avenue	Carson St	220th St	600	NB/EB	935	0.78	C	935	0.78	C	0.00
					SB/WB	635	0.53	A	635	0.53	A	0.00
7	Vermont Avenue	Javelin St	Carson St	750	NB/EB	999	0.67	B	1316	0.88	D	0.21
					SB/WB	792	0.53	A	1136	0.76	C	0.23
8	Vermont Avenue	Carson St	220th St	750	NB/EB	1076	0.72	C	1201	0.80	C	0.08
					SB/WB	792	0.53	A	1153	0.77	C	0.24
9	Vermont Avenue	220th St	223rd St	750	NB/EB	1,156	0.77	C	1392	0.93	E	0.16
					SB/WB	636	0.42	A	781	0.52	A	0.10
10	Figueroa Street	Carson St	220th St	750	NB/EB	957	0.64	B	1110	0.74	C	0.10
					SB/WB	875	0.58	A	1031	0.69	B	0.10
PM												
1	Carson Street	Budlong Ave	Berendo Ave	750	NB/EB	1195	0.80	C	1340	0.89	D	0.10
					SB/WB	1136	0.76	C	1325	0.88	D	0.13
2	Carson Street	Vermont Ave	SB Harbor Fwy Ramp	750	NB/EB	1322	0.59	A	2014	0.90	D	0.31
					SB/WB	1217	0.81	D	1515	1.01	F	0.20

Table 5.13-17 Existing Year (2016) with Project Link Level of Service Analysis

ID	Roadway	Segment		Capacity per Lane	Direction	Existing No Project			Existing With Project			Increase in V/C
		From	To			Volumes	V/C Ratio	LOS	Volumes	V/C Ratio	LOS	
3	Carson Street	Figueroa St	Moneta Ave	750	NB/EB	714	0.48	A	945	0.63	B	0.15
					SB/WB	644	0.43	A	744	0.50	A	0.07
4	Carson Street	Western Ave	Normandie Ave	750	NB/EB	1396	0.93	E	1471	**0.98**	E	0.05
					SB/WB	1148	0.77	C	1322	0.88	D	0.12
5	Normandie Avenue	Torrance Blvd	Carson St	600	NB/EB	720	0.60	A	724	0.60	A	0.00
					SB/WB	925	0.77	C	975	0.81	D	0.04
6	Normandie Avenue	Carson St	220th St	600	NB/EB	654	0.55	A	654	0.55	A	0.00
					SB/WB	983	0.82	D	983	0.82	D	0.00
7	Vermont Avenue	Javelin St	Carson St	750	NB/EB	679	0.45	A	994	0.66	B	0.21
					SB/WB	1053	0.70	B	1346	**0.90**	E	0.20
8	Vermont Avenue	Carson St	220th St	750	NB/EB	764	0.51	A	1013	0.68	B	0.17
					SB/WB	1062	0.71	C	1186	0.79	C	0.08
9	Vermont Avenue	220th St	223rd St	750	NB/EB	580	0.39	A	703	0.47	A	0.08
					SB/WB	1199	0.80	C	1409	**0.94**	E	0.14
10	Figueroa Street	Carson St	220th St	750	NB/EB	542	0.36	A	600	0.40	A	0.04
					SB/WB	1058	0.71	C	1434	**0.96**	E	0.25

Source: IBI Group, 2017
Bold = Unacceptable LOS

Future (2035) Plus Project Conditions

The peak hour link volumes are derived from the turning movement volumes; more specifically, the arriving and departing volumes between two intersections that the link of interest joins. In the event that the departures of one intersection did not equal the arrivals of the second intersection, an average of the two volumes was taken to be the link volume experienced. A loss, or even gain, in volumes between two intersections is not uncommon, especially in situations where additional intersections or driveways are present between the intersections of interest. LOS D is generally taken to be the minimum. The following links are expected to be operate at LOS E or worse:

- Carson Street from Budlong Avenue to Berendo Avenue
- Carson Street from Vermont Avenue to Southbound Harbor Freeway ramp
- Carson Street from Western Avenue to Normandie Avenue
- Normandie Avenue from Carson Street to 220th Street
- Vermont Avenue from 220th Street to 223rd Street
- Figueroa Street from Carson Street to 220th Street

Table 5.13-18 presents existing year plus project peak hour roadway segment analysis.

This page intentionally left blank

Table 5.13-18 Future Year (2035) with Project Link Level of Service Analysis

ID	Roadway	Segment		Capacity per Lane	Direction	Future No Project			Future With Project			Increase in V/C
		From	To			Volumes	V/C Ratio	LOS	Volumes	V/C Ratio	LOS	
AM												
1	Carson Street	Budlong Ave	Berendo Ave	750	NB/EB	887	0.59	A	1096	0.73	C	0.14
					SB/WB	1526	1.02	F	1680	1.12	F	0.10
2	Carson Street	Vermont Ave	SB Harbor Fwy Ramp	750	NB/EB	1017	0.45	A	1310	0.58	A	0.13
					SB/WB	1855	1.24	F	2641	1.76	F	0.52
3	Carson Street	Figueroa St	Moneta Ave	750	NB/EB	638	0.43	A	736	0.49	A	0.07
					SB/WB	825	0.55	A	1087	0.72	C	0.17
4	Carson Street	Western Ave	Normandie Ave	750	NB/EB	1090	0.73	C	1287	0.86	D	0.13
					SB/WB	1513	1.01	F	1587	1.06	F	0.05
5	Normandie Avenue	Torrance Blvd	Carson St	600	NB/EB	1042	0.87	D	1053	0.88	D	0.01
					SB/WB	652	0.54	A	656	0.55	A	0.00
6	Normandie Avenue	Carson St	220th St	600	NB/EB	1053	0.88	D	1053	0.88	D	0.00
					SB/WB	715	0.60	A	715	0.60	A	0.00
7	Vermont Avenue	Javelin St	Carson St	750	NB/EB	1125	0.75	C	1442	0.96	E	0.21
					SB/WB	892	0.59	A	1236	0.82	D	0.23
8	Vermont Avenue	Carson St	220th St	750	NB/EB	1212	0.81	D	1336	0.89	D	0.08
					SB/WB	1089	0.73	C	1274	0.85	D	0.12
9	Vermont Avenue	220th St	223rd St	750	NB/EB	1302	0.87	D	1538	1.03	E	0.16
					SB/WB	736	0.49	A	863	0.58	A	0.08
10	Figueroa Street	Carson St	220th St	750	NB/EB	1078	0.72	C	1231	0.82	D	0.10
					SB/WB	986	0.66	B	1142	0.76	C	0.10
PM												
1	Carson Street	Budlong Ave	Berendo Ave	750	NB/EB	1346	0.90	D	1491	0.99	E	0.10
					SB/WB	1280	0.85	D	1469	0.98	E	0.13
2	Carson Street	Vermont Ave	SB Harbor Fwy Ramp	750	NB/EB	1489	0.66	B	2181	0.97	E	0.31
					SB/WB	1371	0.91	E	1669	1.11	F	0.20

Table 5.13-18 Future Year (2035) with Project Link Level of Service Analysis

ID	Roadway	Segment		Capacity per Lane	Direction	Future No Project			Future With Project			Increase in V/C
		From	To			Volumes	V/C Ratio	LOS	Volumes	V/C Ratio	LOS	
3	Carson Street	Figueroa St	Moneta Ave	750	NB/EB	804	0.54	A	1035	0.69	B	0.15
					SB/WB	726	0.48	A	826	0.55	A	0.07
4	Carson Street	Western Ave	Normandie Ave	750	NB/EB	1573	**1.05**	F	1648	**1.10**	F	0.05
					SB/WB	1293	0.86	D	1467	**0.98**	E	0.12
5	Normandie Avenue	Torrance Blvd	Carson St	600	NB/EB	811	0.68	B	815	0.68	B	0.00
					SB/WB	1041	0.87	D	1051	0.88	D	0.01
6	Normandie Avenue	Carson St	220th St	600	NB/EB	736	0.61	B	736	0.61	B	0.00
					SB/WB	1107	**0.92**	E	1107	**0.92**	E	0.00
7	Vermont Avenue	Javelin St	Carson St	750	NB/EB	765	0.51	A	1079	0.72	C	0.21
					SB/WB	1187	0.79	C	1479	**0.99**	E	0.19
8	Vermont Avenue	Carson St	220th St	750	NB/EB	860	0.57	A	1110	0.74	C	0.17
					SB/WB	1196	0.80	C	1321	0.88	D	0.08
9	Vermont Avenue	220th St	223rd St	750	NB/EB	653	0.44	A	776	0.52	A	0.08
					SB/WB	1350	0.90	D	1560	**1.04**	E	0.14
10	Figueroa Street	Carson St	220th St	750	NB/EB	610	0.41	A	669	0.45	A	0.04
					SB/WB	1247	0.83	D	1569	**1.05**	E	0.21

Source: IBI Group, 2017
Bold = Unacceptable LOS

In summary, the proposed project is anticipated to create significant traffic impacts at fourteen of the study intersections in the Existing Year (2016) With Project Scenario; and at seventeen study intersections for the Future Year (2035) With Project scenario. A summary of the impacts and the scenarios in which they occur is provided below:

- **1. Normandie / Torrance:** Existing (AM); Future (AM and PM)
- **2. Vermont / Torrance:** Existing (AM and PM); Future (AM and PM)
- **6. Western / Carson:** Existing (AM and PM); Future (AM and PM)
- **7. Normandie / Carson:** Existing (AM and PM); Future (AM and PM)
- **9. Berendo / Carson:** Future (PM)
- **10. Vermont / Carson:** Existing (AM and PM); Future (AM and PM)
- **11. SB I-110 Ramps / Carson:** Existing (AM and PM); Future (AM and PM)
- **24. Figueroa / 220th and NB I-110:** Existing (AM and PM); Future (AM and PM)
- **25. Western / 223rd:** Existing (AM and PM); Future (AM and PM)
- **26. Normandie / 223rd:** Future (AM and PM)
- **27. Meyler / 223rd:** Existing (AM); Future (AM and PM)
- **28. Vermont / 223rd:** Existing (AM and PM); Future (AM and PM)
- **29. SB I-110 Ramps / 223rd:** Existing (AM and PM); Future (AM and PM)
- **30. Figueroa / 223rd:** Future (AM and PM)
- **32. SB I-110 Ramps / Hamilton:** Existing (AM and PM); Future (AM and PM)
- **36. Western / Torrance:** Existing (PM); Future (AM and PM)
- **37. Western / 220th:** Existing (PM); Future (PM)

In addition, the proposed project is anticipated to create significant traffic impacts at seven roadway segments, as follows.

- (1) Carson Street from Budlong Avenue to Berendo Avenue:
  - Existing (AM), Future (AM and PM)
- (2) Carson Street from Vermont Avenue to SB 1-110 ramp:
  - Existing (AM and PM), Future (AM and PM)

- (4) Carson Street from Western Avenue to Normandie Avenue:
  - Existing (AM and PM), Future (PM)

- (7) Vermont Avenue from Javelin Street to Carson Street:
  - Existing (PM), Future (AM and PM)

- (9) Vermont Avenue from 220th Street to 223rd Street:
  - Existing (AM and PM), Future (AM and PM)

- (10) Figueroa Street from Carson Street to 220th Street:
  - Existing (PM), Future (PM)

Level of Significance before Mitigation: Upon implementation of regulatory requirements, Impact 5.13-1 would be potentially significant.

TRANS 5.13-2: Project would result in a significant increase in Freeway Mainline Level of Service. [Threshold T-1]

Impact Analysis:

Existing Year (2016) plus Project Freeway Mainline Analysis

The freeway mainline analysis results for the AM and PM peak hours are summarized in Table 5.13-19. All freeway segments are anticipated to operate at an unacceptable level of service (LOS D or worse) with the exception of SR-91 at Avalon Boulevard and I-110 at SR-1 (Pacific Coast Highway).

A significant impact with the project is expected to occur at the northbound and southbound segments of I-405 at I-710 (postmile 7.63).

Table 5.13-19 Existing Year (2016) with Project Freeway Mainline Analysis

ID	Freeway	Location	Direction	AM Peak Hour		PM Peak Hour	
				Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
1	SR-91	At Avalon Blvd	NB	14.5	B	22.0	C
			SB	25.0	C	16.8	C
2	I-110	At SR-1 (Pacific Coast Highway)	NB	25.5	C	16.5	B
			SB	17.6	B	25.1	C
3	I-110	At Sepulveda Boulevard	NB	32.2	D	19.9	D
			SB	21.1	C	30.2	D
4	I-110	At El Segundo Boulevard	NB	24.1	C	23.7	C
			SB	31.8	D	30.2	D
5	I-405	At I-710	NB	47.9	F	36.4	D
			SB	38.5	E	75.0	F
6	I-405	South of I-110 (Carson Scales)	NB	25.8	C	22.5	C
			SB	20.1	C	27.0	D
7	I-405	At Western Avenue	NB	26.7	D	29.5	D
			SB	29.1	D	32.6	D

Source: IBI Group, 2017
Bold = Unacceptable LOS (LOS D or worse). Pc/mi/ln = passenger-car mile per lane
Grey cell= impacted segment.

Future Year (2035) plus Project Freeway Mainline Analysis

The freeway mainline analysis results for the AM and PM peak hours are summarized in Table 5.13-20. All freeway segments operate at an unacceptable level of service (LOS D or worse). A significant impact is expected to occur at the northbound and southbound segments of I-405 at I-710 (postmile 7.63).

Table 5.13-20 Future Year (2035) with Project Freeway Mainline Analysis

ID	Freeway	Location	Direction	AM Peak Hour		PM Peak Hour	
				Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
1	SR-91	At Avalon Blvd	EB	16.3	B	25.4	C
			WB	29.3	D	18.9	C
2	I-110	At SR-1 (Pacific Coast Highway)	NB	30.0	D	18.6	C
			SB	19.9	C	29.5	D
3	I-110	At Sepulveda Boulevard	NB	39.6	E	22.7	C
			SB	24.2	C	36.6	E
4	I-110	At El Segundo Boulevard	NB	28.1	D	27.6	D
			SB	38.9	E	36.8	D
5	I-405	At I-710	NB	66.8	F	46.4	F
			SB	49.8	F	140.1	F

Table 5.13-20 Future Year (2035) with Project Freeway Mainline Analysis

ID	Freeway	Location	Direction	AM Peak Hour		PM Peak Hour	
				Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
6	I-405	South of I-110 (Carson Scales)	NB	30.4	D	26.1	D
			SB	22.9	C	32.0	D
7	I-405	At Western Avenue	NB	31.7	D	35.6	E
			SB	34.9	D	40.2	E

Source: IBI Group, 2017
Bold = Unacceptable LOS (LOS D or worse). Pc/mi/ln = passenger-car mile per lane
Grey cell= impacted segment.

The proposed project is anticipated to create significant traffic impacts at one freeway mainline study location in the Existing Year (2016) With Project Scenario and the Future Year (2035) With Project scenario. A summary of the impacts and the scenarios in which they occur is provided below:

- **5. I-405 at I 7-10:** Existing (AM); Future (AM and PM)

Level of Significance before Mitigation: Upon implementation of regulatory requirements, Impact 5.13-2 would be potentially significant.

TRANS 5.13-3: Project-related trip generation in combination with existing and proposed cumulative development would exceed the capacity at freeway off-ramps. [Threshold T-1]

Impact Analysis:

Per Caltrans traffic study guidelines, a queue analysis for freeway off-ramps at intersections of interest is to be provided.

Existing Year (2016) with Project Off-ramp Queue Analysis

Under Existing Conditions, as shown on Table 5.13-12, all freeway off-ramps provide sufficient storage capacity such that the 85% storage capacity is not exceeded. Table 5.13-21 summarizes the storage capacities and queue lengths expected for these off-ramps. All freeway off-ramps are expected to provide sufficient storage capacity such that the 85% storage capacity is not exceeded with the addition of project traffic with the exception of:

- I-110 Southbound Off-Ramp at Carson Street
- I-110 Southbound Off-Ramp at Hamilton Avenue

Therefore, the project would cause queues to exceed acceptable storage levels at freeway off-ramps, this would be a significant impact.

Table 5.13-21 Existing Year (2016) with Project Off-ramp Queue Analysis

ID	Ramp	Cross Street	Ramp Length (ft)	85% Ramp Length (ft)	Ramp Turn Lanes at Intersection			AM Queue		PM Queue		Queue Exceeds 85% Storage?	
					Lanes	Movement	Length	Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	AM	PM
11	I-110 SB Off-Ramp	Carson Street	980	830	2	Left	980	57	842	851	851	Yes	Yes
						Right	380	842		182			
19	I-405 SB Off-Ramp	Carson Street	1,100	940	2	Left	660	41	41	28	28	No	No
						Right	1,100	41		19			
20	I-405 NB Off-Ramp	Carson Street	1,200	1,020	2	Through/Left	1,200	26	163	30	144	No	No
						Right	620	163		144			
24	I-110 NB Off-Ramp	Figueroa Street	1,150	980	2	Through/Left	1,150	739	739	688	688	No	No
						Right	530	108		92			
29	I-110 SB Off-Ramp	223rd Street	935	800	2	Through/Left	935	545	545	759	759	No	No
						Right/Through	405	545		759			
32	I-110 SB Off-Ramp	Hamilton Avenue	890	760	3	Left	890	800	800	213	213	Yes	No
						Left	355	800		118			
						Right	40	38		118			
33	I-110 NB Off-Ramp	Figueroa Street	880	750	2	Left	880	432	432	210	210	No	No
						Right/Left	340	230		90			
34	I-405 NB Off-Ramp	Avalon Boulevard	980	830	3	Left	980	38	219	45	133	No	No
						Through/Left	320	40		46			
						Right	320	219		133			
35	I-405 SB Off-Ramp	Avalon Boulevard	390	330	5	Left	390	66	215	43	128	No	No
						Left	390	66		43			
						Through	390	3		23			
						Through	390	3		23			
						Right	240	215		128			

Source: IBI Group, 2017
Bold = Unacceptable LOS

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

This page intentionally left blank

Future Year with Project Off-ramp Queue Analysis

Under 2035 No Project Conditions, as shown on Table 5.9 of the traffic study, all freeway off-ramps provide sufficient storage capacity such that the 85% storage capacity is not exceeded by expected queues. Table 5.13-22 summarizes the storage capacities and queue lengths expected for these off-ramps. All freeway off-ramps provide sufficient storage capacity such that the 85% storage capacity is not exceeded by expected queues with the exception of:

- I-110 Southbound Off-Ramp at Carson Street
- I-110 Southbound Off-Ramp at 223rd Street
- I-110 Southbound Off-Ramp at Hamilton Avenue

Therefore, the project would cause queues to exceed acceptable storage levels at freeway off-ramps, this would be a significant impact.

This page intentionally left blank

Table 5.13-22 Future Year (2035) with Project Off-ramp Queue Analysis

ID	Ramp	Cross Street	Ramp Length (ft)	85% Ramp Length (ft)	Ramp Turn Lanes at Intersection			AM Queue		PM Queue		Queue Exceeds 85% Storage?	
					Lanes	Movement	Length	Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	AM	PM
11	I-110 SB Off-Ramp	Carson Street	980	830	2	Left	980	65	886	211	1051	Yes	Yes
						Right	380	886		1051			
19	I-405 SB Off-Ramp	Carson Street	1,100	940	2	Left	660	44	44	36	36	No	No
						Right	1,100	43		31			
20	I-405 NB Off-Ramp	Carson Street	1,200	1,020	2	Through/Left	1,200	28	244	34	185	No	No
						Right	620	244		185			
24	I-110 NB Off-Ramp	Figueroa Street	1,150	980	2	Through/Left	1,150	872	872	775	775	No	No
						Right	530	141		109			
29	I-110 SB Off-Ramp	223rd Street	935	800	2	Through/Left	935	679	679	911	911	No	Yes
						Right/Through	405	679		911			
32	I-110 SB Off-Ramp	Hamilton Avenue	890	760	3	Left	890	970	970	148	148	Yes	No
						Left	355	970		148			
						Right	40	48		23			
33	I-110 NB Off-Ramp	Figueroa Street	880	750	2	Left	880	527	527	302	302	No	No
						Right/Left	340	310		144			
34	I-405 NB Off-Ramp	Avalon Boulevard	980	830	3	Left	980	41	268	49	200	No	No
						Through/Left	320	42		49			
						Right	320	268		200			
35	I-405 SB Off-Ramp	Avalon Boulevard	390	330	5	Left	390	81	286	60	194	No	No
						Left	390	81		60			
						Through	390	3		31			
						Through	390	3		31			
						Right	240	286		194			

Source: IBI Group, 2017
Bold = Unacceptable LOS

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

This page intentionally left blank

Level of Significance before Mitigation: Upon implementation of regulatory requirements, Impact 5.13-3 would be potentially significant.

TRANS 5.13-4: Project-related trip generation in combination with existing and proposed cumulative development would result in designated road and/or highways exceeding county congestion management agency service standards. [Threshold T-2]

Impact Analysis:

This analysis was conducted in accordance with the procedures outlined in Congestion Management Program for Los Angeles County (CMP) (Metro, 2010). The criteria for determining the study area for CMP arterial monitoring intersections and for freeway monitoring locations are:

- All CMP arterial monitoring intersections where the Proposed Project will add 50 or more trips during either the AM or PM peak hours of adjacent street traffic.

- All CMP mainline freeway monitoring locations where the Proposed Project will add 150 or more trips, in either direction, during either the AM or PM peak hours.

The CMP traffic impact analysis guidelines establish that a significant Proposed Project impact occurs when a certain threshold is exceeded. If the Proposed Project increases traffic demand on a CMP facility by 2 percent of capacity ($V/C \geq 0.02$), causing LOS F ($V/C > 1.00$), a significant impact would occur. If the facility is already at LOS F, a significant impact occurs when the Proposed Project increases traffic demand on a CMP facility by 2 percent of capacity ($V/C \geq 0.02$).

Existing Year with Project CMP Monitoring Station Analysis

As discussed in Section 5.13-1, peak hour traffic conditions at six CMP monitoring stations were analyzed utilizing the procedures outlined in the CMP. The CMP method assesses a freeway segment based on the density to capacity ratio in the No Project and With Project scenarios for an analysis year. A summary of the CMP monitoring station locations analyzed is provided in Table 5.13-3. The designation of LOS based on the density to capacity ratio observed is summarized in Table 5.13-4. LOS F(1) through F(3) designations are assigned where severely congested conditions prevail for more than an hour.

The CMP monitoring station analysis results for the AM and PM peak hours are summarized in Table 5.13-23. The analysis was performed in accordance with the methodology, outlined above. An unacceptable LOS (LOS F) is observed at the following locations:

- I-405 at Santa Fe Avenue
- I-405 north of Inglewood Avenue

No significant impacts are expected due to the addition of project traffic.

This page intentionally left blank

Table 5.13-23 Existing Year (2016) With Project CMP Monitoring Station Analysis

ID	Freeway	Segment	Station	Lanes	Capacity	Direction	Existing Year No Project			Existing Year With Project			Change in V/C
							Volume	V/C	LOS	Volume	V/C	LOS	
AM													
1	I-110	At Wilmington Blvd s/o C Street	1045	4	8,000	NB	4,348	0.544	C	4,566	0.571	C	0.027
						SB	3,176	0.397	B	3,257	0.407	B	0.010
2	I-110	At Manchester Blvd	1046	6	12,000	NB	8,479	0.707	C	8,601	0.717	C	0.010
						SB	10,330	0.861	D	10,657	0.888	D	0.027
3	I-405	At Santa Fe Ave	1066	5	10,000	NB	10,365	1.037	F(0)	10,583	1.058	F(0)	0.022
						SB	12,090	1.209	F(0)	12,171	1.217	F(0)	0.008
4	I-405	South of I-110	1067	5	10,000	NB	9,065	0.907	D	9,511	0.951	E	0.045
						SB	7,438	0.744	C	8,636	0.864	D	0.120
5	I-405	North of Inglewood Avenue	1068	5	10,000	NB	8,075	0.808	D	8,197	0.820	D	0.012
						SB	10,608	1.061	F(0)	10,935	1.094	F(0)	0.033
6	SR-91	East of Alameda Street/Santa Fe Ave	1033	6	12,000	EB	7,978	0.665	C	8,100	0.675	C	0.010
						WB	5,800	0.483	B	6,127	0.511	B	0.027
PM													
1	I-110	At Wilmington Blvd s/o C Street	1045	4	8,000	NB	2,921	0.365	B	3,004	0.376	B	0.010
						SB	4,436	0.555	C	4,628	0.579	C	0.024
2	I-110	At Manchester Blvd	1046	6	12,000	NB	9,321	0.777	D	9,609	0.801	D	0.024
						SB	11,375	0.948	E	11,499	0.958	E	0.010
3	I-405	At Santa Fe Ave	1066	5	10,000	NB	9,313	0.931	E	9,396	0.940	E	0.008
						SB	15,074	1.507	F(3)	15,266	1.527	F(3)	0.019
4	I-405	South of I-110	1067	5	10,000	NB	8,250	0.825	D	9,305	0.931	E	0.106
						SB	9,408	0.941	E	9,862	0.986	E	0.045

Table 5.13-23 Existing Year (2016) With Project CMP Monitoring Station Analysis

ID	Freeway	Segment	Station	Lanes	Capacity	Direction	Existing Year No Project			Existing Year With Project			Change in V/C
							Volume	V/C	LOS	Volume	V/C	LOS	
5	I-405	North of Inglewood Avenue	1068	5	10,000	NB	10,015	1.002	F(0)	10,303	1.030	F(0)	0.029
						SB	10,390	1.039	F(0)	10,514	1.051	F(0)	0.012
6	SR-91	East of Alameda Street/Santa Fe Ave	1033	6	12,000	EB	7,618	0.635	C	7,906	0.659	C	0.024
						WB	6,138	0.512	B	6,262	0.522	B	0.010

Source: IBI Group, 2017
Bold = Unacceptable LOS

No significant impacts are expected due to the addition of project traffic.

Future Year with Project CMP Monitoring Station Analysis

The CMP monitoring station analysis results for the AM and PM peak hours are summarized in Table 5.13-24, respectively. The analysis was performed in accordance with the methodology outlined above. An unacceptable LOS (LOS F) is observed at the following locations:

- I-110 at Manchester Boulevard
- I-405 at Santa Fe Avenue
- I-405 south of I-110
- I-405 north of Inglewood Avenue

Per CMP significant impact criteria outlined in the methodology section above, no significant impacts are expected due to the addition of project traffic.

This page intentionally left blank

Table 5.13-24 Future Year (2035) With Project CMP Monitoring Station Analysis

ID	Freeway	Segment	Station	Lanes	Capacity	Direction	Future Year No Project			Future Year With Project			Change in V/C
							Volume	V/C	LOS	Volume	V/C	LOS	
AM													
1	I-110	At Wilmington Blvd s/o C Street	1045	4	8,000	NB	4,898	0.612	C	5,116	0.640	C	0.027
						SB	3,577	0.447	B	3,658	0.457	B	0.010
2	I-110	At Manchester Blvd	1046	6	12,000	NB	9,551	0.796	D	9,673	0.806	D	0.010
						SB	11,636	0.970	E	11,963	0.997	E	0.027
3	I-405	At Santa Fe Ave	1066	5	10,000	NB	11,675	1.168	F(0)	11,893	1.189	F(0)	0.022
						SB	13,618	1.362	F(2)	13,699	1.370	F(2)	0.008
4	I-405	South of I-110	1067	5	10,000	NB	10,211	1.021	F(0)	10,657	1.066	F(0)	0.045
						SB	8,378	0.838	D	9,576	0.958	E	0.120
5	I-405	North of Inglewood Avenue	1068	5	10,000	NB	9,096	0.910	D	9,218	0.922	D	0.012
						SB	11,949	1.195	F(0)	12,276	1.228	F(0)	0.033
6	SR-91	East of Alameda Street/Santa Fe Ave	1033	6	12,000	EB	8,986	0.749	C	9,108	0.759	C	0.010
						WB	6,533	0.544	C	6,860	0.572	C	0.027
PM													
1	I-110	At Wilmington Blvd s/o C Street	1045	4	8,000	NB	3,290	0.411	B	3,373	0.422	B	0.010
						SB	4,997	0.625	C	5,189	0.649	C	0.024
2	I-110	At Manchester Blvd	1046	6	12,000	NB	10,499	0.875	D	10,787	0.899	D	0.024
						SB	12,813	1.068	F(0)	12,937	1.078	F(0)	0.010
3	I-405	At Santa Fe Ave	1066	5	10,000	NB	10,490	1.049	F(0)	10,573	1.057	F(0)	0.008
						SB	16,979	1.698	F(3)	17,171	1.717	F(3)	0.019
4	I-405	South of I-110	1067	5	10,000	NB	9,293	0.929	D	10,348	1.035	F(0)	0.106
						SB	10,597	1.060	F(0)	11,051	1.105	F(0)	0.045

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

Table 5.13-24 Future Year (2035) With Project CMP Monitoring Station Analysis

ID	Freeway	Segment	Station	Lanes	Capacity	Direction	Future Year No Project			Future Year With Project			Change in V/C
							Volume	V/C	LOS	Volume	V/C	LOS	
5	I-405	North of Inglewood Avenue	1068	5	10,000	NB	11,281	**1.128**	F(0)	11,569	**1.157**	F(0)	0.029
						SB	11,703	**1.170**	F(0)	11,827	**1.183**	F(0)	0.012
6	SR-91	East of Alameda Street/Santa Fe Ave	1033	6	12,000	EB	8,581	0.715	C	8,869	0.739	C	0.024
						WB	6,914	0.576	C	7,038	0.587	C	0.010

Source: IBI Group, 2017
Bold = Unacceptable LOS

Per CMP significant impact criteria outlined in in the methodology section above, no significant impacts are expected due to the addition of project traffic.

Level of Significance before Mitigation: Upon implementation of regulatory requirements, Impact 5.13-4 would be less than significant.

TRANS 5.13-5: The project would increase total VMT, but would result in and decrease in VMT per capita. [Threshold T-1]

Impact Analysis: As discussed previously, in light of SB 743, metrics related to vehicle miles traveled (VMT) and vehicle miles traveled per capita will replace the current LOS metrics to evaluate transportation impacts. However, no specific significance thresholds have yet been adopted for purposes of complying with SB 743. Neither the City of Los Angeles nor the County of Los Angeles have specifically adopted elements of SB 743 into their current traffic study guidelines. Therefore, this evaluation is provided for information purposes only.

The Specific Plan facilitates implementation of the goals and policies of the County of Los Angeles 2035 General Plan (General Plan), including the vision for the TOD priority areas. It expands opportunities for compact, infill development, which is in line with the intent of the goals of SB743. VMT calculations are provided in detail in Tables 4.10, 5.10, 7.12, and 8.12. A summary of the total VMT, the population and employees, and the VMT per capita for the 2016 and 2035 without and with project scenarios is presented in Table 5.13-25. Table 5.13-25 shows that the project would increase the total VMT, but would result in a decrease in VMT per capita.

Table 5.13.-25 VMT Summary Table

Land Use	Annual VMT	Population/ Employees	Annual VMT per Capita
Existing 2016	110,989,268	10,522	134,863
2016 With Project	182,011,028	19,535	98,591
2035 No Project	184,014,885	12,149	162,229
2035 With Project	223,691,381	21,138	100,336

Source: Derived from Tables 4.10, 5.10, 7.12, and 8.12 in the TIA (IBI, June 2017)

Level of Significance before Mitigation: Not applicable, as VMT metrics have not been certified by the State of California and the County of Los Angeles have not yet specifically adopted elements of SB 743 into their current traffic study guidelines.

TRANS 5.13-6: The project would not affect air travel or result in substantial safety risks. [Threshold T-3]

Impact Analysis: The project site is not in an airport influence area, or near a public-use or private airport, identified in the *Los Angeles County Airport Land Use Plan* revised by the Los Angeles County Airport Land Use Commission in 2004. No airport-related impacts would occur.

Level of Significance before Mitigation: Upon implementation of regulatory requirements, Impact 5.13-6 no airport-related impacts would occur.

5.13.7 Cumulative Impacts

As discussed in Section 4.6, the cumulative impact analyses in this DEIR relied on the projections in the County's recently updated General Plan and other long-range planning document, such as the California Water Service Rancho Dominguez Water District 2015 Urban Water Management Plan for water supply and SCAG's 2016-2040 RTP/SCS for land use and planning impacts. The traffic study (IBI 2007) considered both project-specific impacts and the project's cumulative contribution to traffic in project vicinity. The traffic forecasts are based on a regional transportation demand model and incorporates regional growth projections identified by SCAG.

Cumulative traffic impacts are addressed above in Impacts 5.13-1 to 5.13-5 under the Future Year scenarios, which accounts for traffic generation both by regional (ambient) growth and by related projects. Significant cumulative traffic impacts were identified at intersections, roadway segments, and freeway facilities, as discussed in Section 5.13-8 below.

5.13.8 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.13-4, 5.13-5, and 5.13-6.

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.13-1** The proposed project is anticipated to create significant traffic impacts at fourteen of the study intersections in the Existing Year (2016) With Project Scenario; and at seventeen study intersections for the Future Year (2035) With Project scenario.

- **Impact 5.13-2** The proposed project is anticipated to create significant impacts at one freeway mainline location for the Future Year (2035) With Project scenario. The proposed project is anticipated to create significant traffic impacts at one freeway mainline study locations in the Existing Year (2016) With Project Scenario; and at one freeway mainline location are anticipated for the Future Year (2035) With Project scenario.

- **Impact 5.13-3** The project would cause queues to exceed acceptable storage levels at freeway off-ramps at two locations under 2016 with project conditions and at three locations under 2035 with project conditions.

5.13.9 Mitigation Measures

Impact 5.13-1

T-1 Prior to issuance of building permits for any project forecast to generate 100 or more peak hour trips, the property owner/developer shall submit to the County a traffic study to identify when the improvements identified in the West Carson Transit Oriented District Specific Plan EIR Traffic Impact Study, IBI Group, June 2017 (Appendix J of this DEIR) shall be designed and constructed. Each traffic study shall comply with the traffic study guidelines from the affected agencies in effect at that time.

a) The traffic study will specify the timing, funding, construction and fair-share responsibilities for all traffic improvements necessary to maintain satisfactory levels of service within the specific plan area and surrounding jurisdictions, as defined by the County's General Plan, based on thresholds of significance, performance standards and methodologies utilized in this DEIR, Metro's CMP Program and established in the adopted traffic impact analysis guidelines for the affected agencies.

b) Prior to issuance of occupancy permit, the property owner/developer shall construct, bond for or enter into a funding agreement for necessary circulation system improvements, as determined by the affected agency. At minimum, fair-share calculations shall include intersection improvements, rights-of-way, and construction costs, unless alternative funding sources have been identified to help pay for the improvement.

Impacts 5.13-2 and 5-13-3

T-2 The County of Los Angeles shall continue to secure the funding needed to implement the future planned improvements within the specific plan area. A variety of funding sources shall be explored, such as Metro's CMP Fee Program, Metro Call for Project funds, and federal and state grant opportunities. If the CMP fee program is not adopted by Metro and the County of Los Angeles, other funding sources for regional transportation needs in the specific plan area, including Caltrans facilities, shall be pursued such as a potential West Carson Development Impact Fee Program, development agreements for large projects, and/or mitigation agreements between future applicants and Caltrans for projects that impact Caltrans facilities.

T-3 The County shall work with Caltrans as they prepare plans to add additional lanes or complete other improvements to various freeways within and adjacent to unincorporated areas. This includes adding or extending mixed flow general purpose lanes, adding or extending existing HOV lanes, adding Express Lanes (high occupancy toll lanes), incorporating truck climbing lanes, improving interchanges and other freeway related improvements.

T-4 The County shall require traffic engineering firms retained to prepare traffic impact studies for future development projects to consult with Caltrans, when a development proposal meets the requirements of statewide, regional, or areawide significance per CEQA Guidelines §15206(b). When preparing traffic impact studies, the most up to date Guide for the Preparation of Traffic Impact Studies from Caltrans shall be followed. Proposed developments meeting the criteria of statewide, regional or areawide include:

- Proposed residential developments of more than 500 dwelling units
- Proposed shopping centers or business establishments employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space.
- Proposed commercial office buildings employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space
- Proposed hotel/motel developments of more than 500 rooms

When the CEQA criteria of regional significance are not met, Caltrans recommends that Project Applicants consult with Caltrans when a proposed development includes the following characteristics:

- All proposed developments that have the potential to cause a significant impact to state facilities (right-of-way, intersections, interchanges, etc.) and when required mitigation improvements are proposed in the initial study. Mitigation concurrence should be obtained from Caltrans as early as possible.
- Any development that assigns 50 or more trips (passenger car equivalent trips) during peak hours to a state highway/freeway.
- Any development that assigns 10 or more trips (passenger car equivalent trips) during peak hours to an off-ramp. On/off-ramps that are very close to each other in which the project trips may cause congestion on the left-turn lane storage to the on-ramp.
- Any development located adjacent to or within 100 feet of a state highway facility and may require a Caltrans Encroachment Permit. (Exceptions: additions to single family homes or 10 residential units or less).
- When the County cannot determine whether or not Caltrans will expect a traffic impact analysis pursuant to CEQA.

5.13.10 Level of Significance After Mitigation

Impact 5.13-1

The proposed project is anticipated to create significant impacts at several study intersections for the Future Year (2035) With Project scenario.

Mitigation Measures T-1 through T-4 would require various improvements at study area intersections to mitigate project impacts. These include, but are not limited to, adding turn lanes, widening lanes, restriping lanes, expanding the Automated Traffic Surveillance and Control network, and improving traffic signal lights.

Improvements to three of the roadway intersections (Vermont Avenue/223rd Street, Vermont Avenue/Carson Street; and Vermont Avenue/Torrance Boulevard) would require the acquisition of right-of-way for the proposed improvements. Right-of-way acquisition at these intersections is believed to be infeasible due to existing development of adjacent land. Therefore, project impacts to these three roadway intersections are determined to be significant and unavoidable.

Additionally, as the primary responsibility for approving and/or completing certain improvements located outside of the specific plan area lies with agencies other than the County of Los Angeles (i.e., Cities of Los Angeles, Torrance and Carson), there is the potential that significant impacts may not be fully mitigated if such improvements are not completed for reasons beyond the County's control (e.g., the County cannot undertake or require improvements outside of the County's jurisdiction). Therefore, project impacts to intersections located in the Cities of Los Angeles, Torrance, and Carson are determined to be significant and unavoidable.

Impact 5.13-2 and 5.13-3

The proposed project is anticipated to create significant impacts at one freeway mainline location and several freeway ramps for the Future Year (2035) With Project.

State highway facilities within the study area are not within the jurisdiction of the County of Los Angeles. Rather, those improvements are planned, funded, and constructed by the State of California through a legislative and political process involving the State Legislature; the California Transportation Commission (CTC); the California Business, Transportation, and Housing Agency; the California Department of Transportation (Caltrans); and OCTA. Recent funding opportunities designated by Metro's Measure M provide the vehicle for designated improvements on the freeway facilities within the study area.

While potential impacts to the freeway mainline segments and ramps have been evaluated, implementation of the transportation improvements to Caltrans facilities listed above is the primary responsibility of Caltrans. While Caltrans has recognized that private development has a role to play in funding fair share improvements to impacts on the I-405 and I-110, neither Caltrans nor the State has adopted a program that can ensure that locally-contributed impact fees will be tied to improvements to freeway mainlines and only Caltrans has jurisdiction over mainline improvements. Because Caltrans has exclusive control over state highway improvements, ensuring that developer fair share contributions to mainline improvements are actually part of a program tied to implementation of mitigation is within the jurisdiction of Caltrans. However, a number of programs are in place in Los Angeles County to improve and upgrade the regional transportation system. These include the State Transportation Improvement Program (STIP), Caltrans Traffic Operations Strategies (TOPS), State Highway Operation and Protection Program (SHOPP), and Metro's Measure M program. State and federal fuel taxes generate most of the funds used to pay for these improvements. Funds expected to be available for transportation improvements are identified through a Fund Estimate prepared by Caltrans and adopted by the California Transportation Commission (CTC). These funds, along with other fund sources,

are deposited in the State Highway Account to be programmed and allocated to specific project improvements in both the STIP and SHOPP by the CTC. However, if these programs are not implemented by the agencies with the responsibility to do so, the project's freeway ramp and mainline impacts would remain **significant and unmitigated**.

5.13.11 References

Airnav.com. 2016, November 23. Airport Information. http://www.airnav.com/airports/.

California Department of Transportation (Caltrans). 2016, March 28. 2016 California Public Use Airports and Federal Airfields. http://www.dot.ca.gov/hq/planning/aeronaut/documents/maps /PublicUseAirports_MilitaryAirfieldsMap.pdf.

California Governor's Office of Planning and Research. Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA. January 20, 2016.

Los Angeles County Airport Land Use Commission (LACALUC). LACALUC Comprehensive Land Use Plan. http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf.

Los Angeles Department of Transportation (LADOT). 2016. LADOT Transit. DASH. http://www.ladottransit.com/dash/

Metropolitan Transportation Authority of Los Angeles County (Metro). 2010 Congestion Management Program.

———. 2016, June 16. Regional Connector Transit Project. https://www.metro.net/projects/connector/

Southern California Association of Governments (SCAG). 2016a, April (adopted). The 2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy. http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

———. 2016b, June 5. 2015 Federal Transportation Improvement Program. http://ftip.scag.ca.gov/Documents/15FTIP_Transit_Amend15_0118LA.pdf.

IBI, June 9, 2017. West Carson TOD Specific Plan Traffic Impact Study.

Institute of Transportation Engineers (ITE), 2012. Trip Generation Manual, 9th Edition.

5.14 TRIBAL CULTURAL RESOURCES

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the West Carson TOD Specific Plan to impact tribal cultural resources in the community of West Carson. Tribal cultural resources include landscapes, sacred places, or objects with cultural value to a California Native American tribe. Other potential impacts to cultural resources (i.e., historic, archaeological, and paleontological) are evaluated in Section 5.3, *Cultural Resources*. The analysis in this section is based in part on the following information:

- *Cultural Resources Overview and Assessment: The City of Los Angeles, West Carson Transit Oriented District (TOD) Specific Plan Project Area, Los Angeles County, California*, McKenna et al., August 28, 2016.

A complete copy of this study is included in the Technical Appendices of this Draft EIR (Volume II, Appendix E).

5.14.1 Environmental Setting

5.14.1.1 RELEVANT PROGRAMS AND REGULATIONS

Federal

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 regulates the protection of archaeological resources and sites that are on federal lands and Indian lands.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act is a federal law passed in 1990 that provides a process for museums and federal agencies to return certain Native American cultural items—such as human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants and culturally affiliated Indian tribes.

State

California Public Resources Code

Archaeological resources are protected pursuant to a wide variety of state policies and regulations enumerated under the California Public Resources Code. In addition, cultural resources are recognized as a nonrenewable resource and therefore receive protection under the California Public Resources Code and CEQA.

- **California Public Resources Code §§ 5097.9–5097.991** provide protection to Native American historical and cultural resources, and sacred sites and identify the powers and duties of the Native American Heritage Commission (NAHC). It also requires notification

> to descendants of discoveries of Native American human remains and provides for treatment and disposition of human remains and associated grave goods.

California Health and Safety Code

The discovery of human remains is regulated per California Health and Safety Code Section 7050.5, which states that:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation…until the coroner…has determined…that the remains are not subject to…provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible…. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. If the coroner determines that the remains are not subject to his or her authority and…has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

California Senate Bill 18

Existing law provides limited protection for Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places. These places may include sanctified cemeteries, religious and ceremonial sites, shrines, burial grounds, prehistoric ruins, archaeological or historic sites, Native American rock art inscriptions, or features of Native American historic, cultural, and sacred sites.

Senate Bill 18 (SB 18) on traditional tribal cultural places was signed into law in September 2004 and went into effect on March 1, 2005. It placed new requirements on local governments for the adoption, revision, amendment, or update of a city's or county's general plan within or near traditional tribal cultural places (TTCP). Although SB 18 does not specifically mention consultation or notice requirements for adoption or amendment of specific plans, the Final Tribal Guidelines advise that SB 18 requirements extend to specific plans as well, since state planning law requires local governments to use the same process for amendment or adoption of specific plans as general plans (defined in Government Code § 65453).

SB 18 requires local jurisdictions to provide opportunities for involvement of California Native Americans tribes in the land planning process for the purpose of preserving traditional tribal cultural places. The Final Tribal Guidelines recommend that the NAHC provide written information as soon as possible but no later than 30 days after receiving notice of the project to inform the lead agency if the proposed project is determined to be in proximity to a TTCP and another 90 days for tribes to respond to a local government if they want to consult with the local government to determine whether the project would have an adverse impact on the TTCP. There is no statutory limit on the consultation duration. Forty-five days before the action is publicly considered by the local government council, the local government refers action to agencies, following the CEQA public review time frame. The CEQA public distribution list may include tribes listed by

the NAHC who have requested consultation or it may not. If the NAHC, the tribe, and interested parties agree upon the mitigation measures necessary for the proposed project, it would be included in the project's EIR. If both the County of Los Angeles and the tribe agree that adequate mitigation or preservation measures cannot be taken, then neither party is obligated to take action.

In addition, SB 18 provided a new definition of TTCP, requiring a traditional association of the site with Native American traditional beliefs, cultural practices, or ceremonies or the site must be shown to actually have been used for activities related to traditional beliefs, cultural practices, or ceremonies. Previously, the site was defined to require only an association with traditional beliefs, practices, lifeways, and ceremonial activities. In addition, SB 18 law also amended Civil Code § 815.3 and added California Native American tribes to the list of entities that can acquire and hold conservation easements for the purpose of protecting their cultural places.

Assembly Bill 52

Assembly Bill 52 (AB 52) took effect July 1, 2015, and requires inclusion of a new section in CEQA documents titled Tribal Cultural Resources (TCR), for projects where the Notice of Preparation or Notice to adopt a Negative Declaration or Mitigated Negative Declaration is filed after this date. Similar to SB 18, AB 52 requires consultation with tribes at an early stage (within 14 days of a lead agency deeming an application complete or deciding to undertake a project) to determine whether the project would have an adverse impact on the TCR and provide mitigation to protect them.

5.14.1.2 EXISTING CONDITIONS

Natural Setting

Geologically, the West Carson TOD Specific Plan project area is in the western and southwestern blocks of the Los Angeles Basin (Basin), which is part of the Peninsular Range Geomorphic Province of California. The Los Angeles Basin is a coastal plain extending from the Pacific Ocean on the south to the Santa Monica Mountains and Puente Hills on the north.

The project area consists of surficial deposits of younger Quaternary Alluvium, derived primarily as alluvial fan deposits from the slightly elevated terrain to the west, but also possibly as fluvial deposits derived from the drainage in the northern portion of the project area that flows toward the Dominguez Channel. Older Quaternary deposits underlie the project area at various depths. These deeper deposits have been associated with fossil specimens (camel, horse, etc.) at significant depths—up to 35 feet below the current surface. Shallow earth-moving is not expected to impact fossil bearing deposits; however, deeper excavations (15 to 18 feet below the presence surface) are likely to be sensitive for the presence of significant fossil remains.

The project area is west of the Los Angeles River channel and the Newport-Inglewood Fault. The nature of the loose, sandy deposits of the older and younger Quaternary Alluvium are subject to liquefaction and ground failures (sinking/rising/expanding, etc.), but less likely to result in landslides because of the flat terrain. In its natural setting, the project area is considered a coastal plain/coastal sage scrub biotic environment. At this time, given the extent of urban development, the native vegetation and coastal sage scrub community are no longer evident.

Tribal Cultural Setting

The project area is well within the present-day Los Angeles Basin and associated with the traditional territory of the prehistoric and protohistoric Native American populations generally referred to as the Gabrieliño/Tongva. The Gabrieliño/Tongva society is identified by Late Prehistoric/Protohistoric ethnographic records, and archaeological data identify Late Prehistoric occupation of Southern California.

The term Gabrieliño refers to Native American populations that were under the jurisdiction of the Mission San Gabriel de Archangel. Mission San Gabriel serviced the entire Los Angeles Basin and into the San Bernardino area. The present-day City of Los Angeles is somewhat centrally located in the ethnographic boundaries for the Gabrieliño, and the core area of the Los Angeles Basin was the site of the historical City of Los Angeles and the ethnographic village of Yangna. Following the founding of the Pueblo de Los Angeles, a large Catholic church (Church of Our Lady the Queen of the Angels) was constructed to service the small but sedentary population of the pueblo, including Native Americans and early European settlers (primarily Spanish/Mexican, but also many others). Evidence of the prehistoric occupation of the area, including the village of Yangna, has been sporadically identified, and the native populations became known as Gabrieliños. The project area is in the inland areas of Gabrieliño territory.

Consultation Process

In accordance with SB 18 and AB 52, the County contacted the NAHC and inquired into the presence/absence of sacred or religious sites in the vicinity of the Specific Plan area. The NAHC responded that there are no sacred lands within the project area or a half-mile radius and provided a list of AB 52–specific Native American tribes with traditional lands or cultural places within the boundaries of the proposed project. These tribes include the Soboba Band of Mission Indians, Gabrieleno/Tongva San Gabriel Band of Mission Indians, Gabrielino/Tongva Nation, Gabrielino Tongva Indians of California Tribal Council, Gabrielino-Tongva Tribe, and Gabrieleno Band of Mission Indians-Kizh Nation. On November 30, 2015, in compliance with CEQA and SB 18, the County sent letters to the six Native American contacts notifying them of the proposed project and requesting comments or concerns for the project area.

5.14.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

TCR-1 Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public

Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

The County of Los Angeles Environmental Checklist also includes the following threshold as part of Section 5.3, *Cultural Resources*.

C-5 Cause a substantial adverse change in the significance of a tribal cultural resource as defined in the CEQA Public Resources Code Section 21074.

Per AB 52, tribal cultural resources must be analyzed in its own EIR section. Thus, analysis of this threshold is included in this section—Section 5.14, *Tribal Cultural Resources*.

5.14.3 Plans, Programs, and Policies

5.14.3.1 REGULATORY REQUIREMENTS

RR CUL-1 All construction activities will be conducted in accordance with Section 7050.5 of the California Health and Safety Code regarding the potential discovery of human remains. If applicable, the Native American Heritage Commission will be responsible for designating the most likely descendant (MLD), as required by Section 5097.98 of the California Public Resources Code. If the landowner rejects the recommendations of the MLD, the burial location would be determined in compliance with California Public Resources Code, Section 5097.98.

5.14.4 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-1: The proposed project may cause a substantial adverse change in the significance of a tribal cultural resource. [Threshold TCR-1 and C-5]

Impact Analysis: Public Resources Code Section 21074 defines "tribal cultural resources" as 1) listed or determined to be eligible for listing on the national, state, or local register of historic resources; or 2) a resource that the lead agency chooses, in its discretion, to treat as a tribal cultural resource. In the second instance, the lead agency must determine that the resource meets the criteria for listing in the state register of historic resources pursuant to Public Resources Code Section 5024.1. The cultural resources assessment prepared by McKenna et al. did not identify any resources listed or eligible for listing on the national, state, or local register of historic places, and the County has not identified any tribal cultural resource that meets the criteria for listing in the state register of historic resources.

However, as detailed above, the project area is within the territory inhabited by Native Americans (Gabrielino/Tongva) and may have sensitive tribal cultural resources. Conducting consultation early in the

CEQA process allows tribal governments, public lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process.

In accordance with AB 52 and SB 18 requirements, the County sent invitation letters to representatives of the six Native American contacts provided by the NAHC on November 30, 2015, formally inviting tribes to consult with the County on the West Carson TOD Specific Plan project. The intent of the consultations is to provide an opportunity for interested Native American contacts to work with the County during the project planning process to identify and protect tribal cultural resources. Anthony Morales, Chair of the San Gabriel Band of Gabrielino/Tongva Mission Indians, responded by telephone to discuss the project details. Mr. Morales had no specific information pertaining to the project area, but requested to be kept informed and permitted to comment on any resources that may be identified at a later date. No other tribes responded to the County's notification letter.

The archaeological and paleontological records searches conducted by McKenna et al. did not find any cultural resources of significance in the project area. Nevertheless, there is always potential to uncover previously undiscovered resources, including tribal cultural resources, particularly in areas of deeper excavation. Additionally, regulatory requirement CUL-1 requires that all construction activities be conducted in accordance with Section 7050.5 of the California Health and Safety Code regarding the potential discovery of human remains. If applicable, the Native American Heritage Commission will be responsible for designating the most likely descendant, as required by Section 5097.98 of the California Public Resources Code.

Level of Significance before Mitigation: With implementation of regulatory requirement RR CUL-1, Impact 5.14-1 would still be potentially significant.

5.14.5 Cumulative Impacts

Cumulative impacts to tribal cultural resources occur when the impacts of the proposed project, in conjunction with other projects and development in the region, result in multiple and/or cumulative impacts to tribal cultural resources in the area. There are no known tribal cultural resources in the project area. Each future discretionary project in accordance with the West Carson TOD Specific Plan would be required to evaluate that project's impacts to site-specific tribal cultural resources as part of CEQA review, including tribal consultation with AB 52–specific Native American tribes. Where significant impacts to tribal cultural resources are identified, projects would be required to either avoid impacts or implement feasible mitigation measures to reduce impacts. Consequently, impacts to tribal cultural resources would not be cumulatively considerable.

5.14.6 Level of Significance Before Mitigation

Without mitigation, the following impacts would be **potentially significant:**

- **Impact 5.14-1** Development of the proposed project may impact tribal cultural resources.

5.14.7 Mitigation Measures

Impact 5.14-1

Mitigation Measures CUL-1 through CUL-3 from Section 5.4, *Cultural Resources*, would also be applicable to Impact 5.13-1. In addition, TCR-1 below ensures compliance with RR CUL-1.

TCR-1 If human remains are encountered, the County or its contractor shall halt work in the vicinity (within 100 feet) of the find and contact the Los Angeles County Coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC will be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98. The NAHC will designate an MLD for the remains per PRC Section 5097.98. Until the landowner has conferred with the MLD, County shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity, is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.

5.14.8 Level of Significance After Mitigation

The mitigation measures identified in Section 5.4, *Cultural Resources*, and above would reduce potential impacts associated with tribal cultural resources to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to tribal cultural resources remain.

5.14.9 References

McKenna et al. 2016, August 28. Cultural Resources Overview and Assessment: The City of Los Angeles, West Carson Transit Oriented District (TOD) Specific Plan Project Area, Los Angeles County, California.

5. Environmental Analysis
TRIBAL CULTURAL RESOURCES

This page intentionally left blank.

5.15 UTILITIES AND SERVICE SYSTEMS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the West Carson TOD Specific Plan to impact wastewater conveyance and treatment; water supplies, treatment, and conveyance; storm drainage systems; and solid waste disposal in the community of West Carson. The analysis in this section is based, in part, upon questionnaire responses by service providers of the project area and the following technical report:

- Written response to service questionnaire by Johnmar Deguzman, Project Engineer, Sanitation Districts of Los Angeles County, February 2, 2017 (Appendix I).
- *West Carson TOD Sewer Area Study*, IBI Group, February 2, 2018 (Appendix K).
- *West Carson Water Area Study*, IBI Group, August 13, 2017 (Appendix L).

Complete copies of the questionnaire responses and technical reports are included in the Technical Appendices to this Draft EIR.

5.15.1 Wastewater Treatment and Collection

5.15.1.1 ENVIRONMENTAL SETTING

Relevant Programs and Regulations

Federal

Clean Water Act

The federal Clean Water Act (CWA), United States Code, Title 33, Sections 1251 et seq., established regulations to control the discharge of pollutants into the waters of the United States and regulates water quality standards for surface waters. Under the CWA, the US Environment Protection Agency (EPA) is authorized to set wastewater standards for industry and runs the National Pollutant Discharge Elimination System (NPDES) permit program. Under the NPDES program, permits are required for all new developments that generate discharges directly into waters of the United States. Additionally, Sections 1251 et seq. of the CWA require wastewater treatment of all effluent before it is discharged into surface waters.

Local

Los Angeles Regional Water Quality Control Board

Waste discharge requirements pursuant to NPDES regulations for the Sanitation Districts of Los Angeles County (LACSD) water reclamation plant (WRP) treating wastewater from the Specific Plan area—the Joint Water Pollution Control Plant (JWPCP) in the City of Carson—are set forth in Los Angeles Regional Water Quality Control Board (RWQCB) Order No. R4-2011-0151, issued in 2011. This order sets discharge prohibitions—e.g., high-level radiological wastes or discharges that degrade water supplies—and effluent limitations and discharge specifications.

County Sanitation Districts of Los Angeles County

Capital improvements to LACSD water reclamation plants are funded from connection fees charged to new developments, redevelopments, and expansions of existing land uses. The connection fee is a capital facilities fee used to provide additional conveyance, treatment, and disposal facilities (capital facilities) required by new users connecting to the LACSD's sewerage system or by existing users who significantly increase the quantity or strength of their wastewater discharge. The Connection Fee Program ensures that all users pay their fair share for any necessary expansion of the system. Estimated wastewater generation factors used in determining connection fees in LACSD's 22 member districts are set forth in the Connection Fee Ordinance for each respective district, available on LACSD's website. The project site is in District 8 of the Sanitation Districts (LACSD 2015a).

LACSD establishes discharge limits for wastewater discharges within its service areas to prevent discharge of substances to LACSD sewers that would exceed the treatment capacities or otherwise damage LACSD water reclamation facilities (LACSD 2017a). The discharge limits enable water reclamation facilities to maintain their effluents within Los Angeles RWQCB wastewater discharge requirements. The LACSD has an industrial pretreatment program where industries exceeding discharge limits pretreat liquid wastes before discharging them to sewers.

Existing Conditions

Wastewater Treatment Facilities

LACSD provides wastewater treatment for the project site at its JWPCP in the City of Carson just south of the Specific Plan area. The JWPCP provides primary and secondary treatment for an average of 258 million gallons per day (mgd) of wastewater from the Los Angeles region. The plant is rated to treat 400 mg and is the largest of LACSD's treatment plant (LACSD 2017b).

The influent to JWPCP is treated by bar screens, grit chambers, sedimentation tanks, anaerobic digesters, biological reactors, clarifiers, dissolved air flotation, and cryogenic oxygen. Treated effluent is discharged into the ocean through two outfalls that extend one and a half miles into the ocean, 200 feet below sea level. This effluent is discharged by gravity or using pumps totaling 170 mgd capacity. Bleach is injected into the effluent for final disinfection.

In November 2015, the LACSD and the Metropolitan Water District of Southern California (MWD) agreed to implement a demonstration project and feasibility studies for treatment and reuse of JWPCP effluent as recycled water for groundwater recharge. The demonstration project will have 500,000 gallons per day capacity. A full-scale operating system, if developed, would have up to 150 mgd capacity. Recycled water from the system would be used for groundwater recharge in Los Angeles and Orange counties (MWD 2016a).

The Water Replenishment District of Southern California (WRD) is building an advanced water treatment facility in the City of Pico Rivera that will provide 10,000 additional acre-feet per year (afy) of highly treated recycled water from the San Jose Creek WRP for groundwater recharge; the facility is scheduled to begin operation in 2018 (WRD 2016). The San Jose Creek WRP has capacity of 100 mgd (112,100 afy) and

currently treats about 65.7 mgd (73,650 afy; LACSD 2017c); thus, it has sufficient capacity to supply recycled water to the planned advanced water treatment facility.

Existing Wastewater Generation

Existing wastewater generation onsite is estimated to be approximately 1.06 mgd, with a peak flow of 4.12 cubic feet per second (IBI 2017).

Sewers

The community of West Carson is currently serviced by two sanitary systems. The Los Angeles County Sewer Maintenance District services local collection lines, while trunk sewers and treatment facilities are serviced by Los Angeles County Sanitation Districts (LACSD). Local collection lines are primarily 8" in diameter and composed of Vitrified Clay Pipe (VCP). These are routinely assessed through CCTV inspection, and repaired and replaced as part of a continuous improvement plan maintained by the Department of Public Works. The 8" sanitary collection lines are sufficient size to collect sanitary waste from houses and shops in the area and transport them to the main collection trunks.. The existing sewer system onsite is mapped on Figure 5.15-1, *Existing Sewer Mains Onsite*.

There are four main segments of LACSD trunk lines collecting the sewage from the Specific Plan area. The northeast corner of the Specific Plan area is served by a 12" VCP Trunk. Another trunk line runs east on Desford, south on Berendo, and east on Carson Street before connecting with the large trunk that runs south on Vermont Avenue. A third trunk line, 54" in diameter, runs east on Carson Street at the Specific Plan boundary, cutting south through the Harbor-UCLA Medical Center campus along the same center line as Meyler Street, continuing south past the Specific Plan boundary. The final trunk line runs east on 223rd Street, connecting with the second trunk and continuing south on Vermont Avenue. There are three segments of trunk line that are out of service – 1) 63" trunk running east along South Avenue connecting at Vermont Avenue, 2) 66" to 78" trunk running south along Vermont Avenue from Carson Street to 223rd Street, 3) The continuation of the first unused trunk running south from 220th Street to 223rd Street. The majority of these lines are reinforced concrete with linings.

The Specific Plan Area was delineated into 14 sewer main tributary areas which connect into the trunks of the Los Angeles County Sewer Maintenance Districts. These are detailed below:

223rd Street West of Meyler (Tributary Area 1) – Existing 8" pipe on the west side of Meyler Street in the southwestern portion of the Specific Plan area. Collects from proposed zones: Residential 1, Residential 3, Public (as Meyler Street Elementary) and additional flow from Residential 1 zones south of the Specific Plan area. The zone connects to the trunk from manhole 232 into manhole 402 along 223rd Street.

223rd Street East of Meyler (Tributary Area 2) – Existing 8" pipe on the east side Meyler Street in the southern portion of the Specific Plan area. Collects from proposed zones: Residential 1, Unlimited Commercial, Industrial Flex, and additional flow from Residential 1 zones south of the Specific Plan area. The zone connects to the trunk from manhole 195 into manhole 402 along 223rd Street.

Jay Street West of Meyler (Tributary Area 3) – Existing 8" pipe west of Meyler Street along Jay Street. Collects Residential 1 development. Connects to the No. 5 Main Trunk from manhole 973 into manhole 403.

Jay Street East of Meyler (Tributary Area 4) – Existing 8" pipe east of Meyler Street along Jay Street. Collects Residential 1 development. Connects to the No. 5 Main Trunk from manhole 203 into manhole 403.

220th Street (Tributary Area 5) – Existing 8" pipe on the east side of Meyler Street collecting. Collects Residential 1, Residential 3, and Residential Planned development. Connects to the Meyler Street Trunk at 223rd Street from manhole 395 to manhole 396.

Vermont Avenue at 220th Street (Tributary Area 6) – Existing 8" pipe on the east side of Vermont Avenue in the southeastern portion of the Specific Plan area. Collects from proposed zones: Mixed Use Development 2, Industrial Flex, Residential 3, and Residential 4. Connects to Sanitation District Trunk Sewer 659 from manhole 1082.

Medical Center (Tributary Area 7) – The Harbor-UCLA Medical Center is a collection of existing 8" to 15" pipes bound by Normandie Avenue, Vermont Avenue, 220th Street, and Carson Street. Manhole 1056 appears to connect some of this area to the trunk sewer. It is unknown the exact configuration of collection lines nor which trunk system they ultimately connect to because they are privately owned.

Vermont Avenue South of Carson (Tributary Area 8) – Existing 8" pipe on the south side of Carson Street that collects sewage in the eastern portion of the plan. Collects from Mixed Use Development 2. Connects to the Joint Outfall D sewer from manhole 130 to manhole 131.

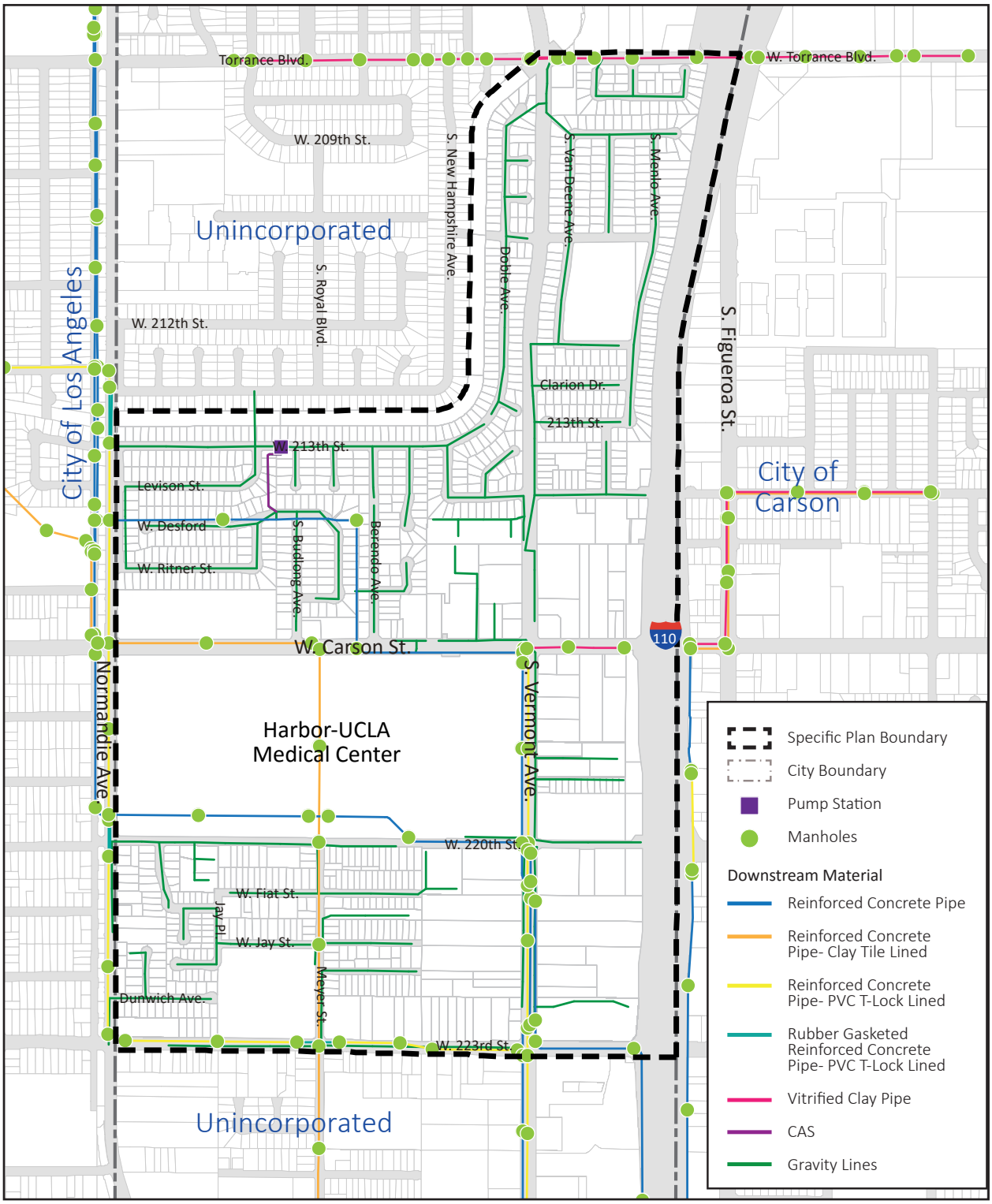
Vermont Avenue North of Carson (Tributary Area 9) – Existing 8" pipe on the north side of Carson Street that collects a small area north of Carson Street and west of Vermont Avenue. It collects sewage from Residential 4 and Mixed Use Development 1. Connects to the Joint Outfall D sewer from Manhole 132 to manhole 131.

West Carson Street (Tributary Area 10) – Existing 8" pipe on Carson Street east of Berendo Avenue. Collects a small area of Mixed Use Development 1 zoning. Connects to the Joint Outfall D sewer from manhole 432 to manhole 433.

Berendo and Broadwell Avenue (Tributary Area 11) – Existing 8" line collecting Residential 1 along Berendo Avenue and Broadwell, extending as far north as the back end of properties on Budlong and Meyler Courts. Collects from zones Mixed Use 1 and Residential 1. Connects to the Joint Outfall D sewer from manhole 271.

Desford Avenue (Tributary Area 12) – Existing 8" line collecting all sewage in the northwest portion of the plan through both a force main and gravity fed lines. Collects from zones: Residential 1, Mixed Use Development 1, and Residential 4. It also collects from zones outside of the plan area: Residential 1 north of the 208th Street Drain, and a collection line from the City of Los Angeles. Connects to the Joint Outfall D sewer from Manhole 436.

Figure 5.15-1 - Existing Sewer Mains Onsite
5. Environmental Analysis



Base Map Source: ESRI, IBI Group, 2018

5. Environmental Analysis
UTILITIES AND SERVICE SYSTEMS

This page intentionally left blank.

Van Deene Avenue (Tributary Area 13) – Existing 10" line collecting all lines east of Vermont Avenue and north of Carson Street with exception to the Greenhedge cul-de-sac. This collection zone was delineated into 13A and 13B. 13A collects from Mixed Use Development 1 and Mixed Use Development 2 east of Vermont and north of Carson, all Residential 1 east of Vermont, Planned Development east of Vermont, and the entirety of Van Deene Avenue Elementary School (as Public). 13B is an 8" line that collects Residential 1 from Doble Avenue and continues to the Torrance Avenue Trunk. It connects with 13A at manhole 96. Once it combines 13A and 13B into a 10" sewer, it also collects the Neighborhood Commercial Zone on the North end of the Plan Area. Connects to the Torrance Boulevard Trunk from manhole 100.

Greenhedge Avenue (Tributary Area 14) – Existing 8" line collecting the Greenhedge cul-de-sacs of Residential 1. Connects with Torrance Boulevard Trunk at Conradi Avenue from manhole 101.

5.15.1.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-1 Would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

U-2 Would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

U-5 Would result in a determination by the wastewater treatment provider which serves or may serve the project that is has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

5.15.1.3 PLANS, PROGRAMS, AND POLICIES

Regulatory Requirements

RR USS-1 The proposed project will be designed, constructed, and operated in accordance with the County of Los Angeles Sanitation District's (LACSD) Wastewater Ordinance. All wastewater discharges into LACSD facilities shall be required to comply with the discharge standards set forth to protect the public sewage system.

RR USS-2 The project's sewer, storm drain, and other utility infrastructure improvements will be designed, constructed, and operated in accordance with the applicable regulations in the Los Angeles County Code, which incorporates by reference the California Building Code, the California Electrical Code, the California Mechanical Code, the California Plumbing Code, the California Fire Code, and the Green Building Standards Code.

RR HAZ-1 Any project-related hazardous materials and hazardous wastes will be transported to and/or from the project in compliance with any applicable State and federal requirements, including

the U.S. Department of Transportation regulations listed in the Code of Federal Regulations (Title 49, Hazardous Materials Transportation Act); California Department of Transportation (Caltrans) standards; and the California Occupational Safety and Health Administration (Cal/OSHA) standards.

RR HAZ-2 Any project-related hazardous waste generation, transportation, treatment, storage, and disposal will be conducted in compliance with the Subtitle C of the Resource Conservation and Recovery Act (RCRA) (Code of Federal Regulations, Title 40, Part 263), including the management of non-hazardous solid wastes and underground tanks storing petroleum and other hazardous substances. The project will be designed and constructed in accordance with the regulations of the Los Angeles County Fire Department, which serves as the designated CUPA and which implements State and federal regulations for the following programs: (1) Hazardous Waste Generator Program, (2) Hazardous Materials Release Response Plans and Inventory Program, (3) CalARP, (4) AST Program, and (5) UST Program.

RR HYD-2 The project will be constructed and operated in accordance with the Los Angeles County MS4 Permit (Order No. R4-2012-0175), as amended by Order WQ 2015-0075. The MS4 Permit requires new development and redevelopment projects to retain on-site a specified volume of stormwater runoff from a design storm event. The Low Impact Development Standards Manual provides the guidance on how new development and redevelopment projects can meet these on-site retention requirements through the use of stormwater quality control measures.

5.15.1.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.15-1: Project-generated wastewater would be adequately treated by the Sanitation Districts of Los Angeles County's Joint Water Pollution Control Plant, but may require infrastructure improvements. [Thresholds U-1, U-2 (part), and U-5]

Impact Analysis:

Wastewater Generation

Wastewater generation onsite at Specific Plan buildout is estimated to be approximately 2.41 mgd, a net increase of about 1.35 mgd (IBI 2017). The estimate is based on acreages of proposed zoning districts and wastewater generation factors for general land use categories per district. There is sufficient wastewater treatment capacity in the region for estimated project wastewater generation (Deguzman 2017), and Specific Plan buildout would not require LACSD to build new or expanded wastewater treatment facilities. Impacts would be less than significant.

Sewers

The analysis conducted for the Sewer Area Study assesses the potential impact of the proposed Specific Plan in terms of the system's physical capacity to transport wastewater through collection mains. There is an increase in land use density in the proposed build-out, with a corresponding increase in water and wastewater demand anticipated. While strictly single-family residential areas are minimally affected, the increases in other zones warrant analysis. Collection areas were delineated from collection line locations. Sewage effluent in each collection area was calculated using the Zoning Coefficient for runoff for a typical sewer area study developed by Los Angeles County Department of Public Works Land Development Division. Each planned development zone's acreage in collection zones was used with the Zoning Coefficient to determine total flow through the lines.

All existing sewer mains in the Specific Plan area are 8" or above in diameter. Using the minimum allowable slope of 0.24% (0.12% for 15" or above), the design capacity for the existing sewer pipes is 0.265 cfs for 8" mains and 0.455 cfs for 10" pipes. Design capacity for lines below 15" diameter, defined by LA County Sanitation District, is half of the diameter of the pipe to be filled.

One of the purposes of this study is to determine the deficiencies in existing utilities when using the future development of the Plan Area. Based on this analysis, four (4) of the existing tributary areas have the potential to exceed the existing sewage capacity defined by LA County. Tributary Areas 2, 8, 12, and 13 have the potential to exceed the existing sewage capacity of their connecting sewer mains. The remaining tributary areas, based on zoning coefficients from Los Angeles County, should remain below the designed sewage capacity.

- Tributary Area 2 has an estimated cumulative sewage flow of 0.404 cfs which is 150% of the design capacity of 0.27 cfs allowed by an 8" collection line. This area includes flow from Residential 1, Unlimited Commercial, Industrial Flex, and additional Residential 1 from outside the TOD Plan Area.

- Tributary Area 8 has an estimated cumulative sewage flow of 0.378 cfs which is 140% of the design capacity of 0.27 cfs allowed by an 8" collection line. This area includes flow from Mixed use Development 2.

- Tributary Area 12 has an estimated cumulative sewage flow of 0.651 cfs which is 241% of the design capacity of 0.27 cfs allowed by an 8" collection line. This area includes flow from Residential 1, Mixed Use Development 1, and Residential 4 in the Plan Area. This area also includes flow from Residential 1 outside of the plan area, as well as additional flow from a City of Los Angeles sewer that connects to manhole 329. Communications with the City have indicated the peak flow from that 8" sewer to be 0.124 cfs.

- Tributary Area 13 has an estimated cumulative flow of 0.551 cfs which is 110% of the design capacity of 0.50 cfs allowed by a 10" collection line. This area includes flow from two 8" lines in the Plan Area and collects from Residential 1, Mixed Use Development 1, Mixed Use Development 2, Residential Planned Development, Neighborhood Commercial, and a public elementary school.

A more detailed analysis of types of buildings and historical flows in areas where little to no build-out will occur can mitigate some of the issues in collection mains. For example, Tributary Area 12, based on the analysis, would be over capacity. However, communication with LACDPW has indicated they have had no known issues with lines in the existing West Carson area, and Tributary Area 12 is not expecting to change much in full build out.

Since the design identifies full "build out" condition, there is no immediate need for upgrades to the existing sewer mains. A detailed study – with projected building and consumer flows – around the existing tributary areas of potential will identify the required upgrades to the tributaries. In general, new or upgraded sewer laterals are required for new buildings. This will be paid for by future developers. All new sewer infrastructure development and upgrades will have to be reviewed by the County's Department of Public Works.

Regional Water Quality Control Board Wastewater Discharge Requirements

As required under regulatory requirement RR USS-1, projects developed under the Specific Plan would comply with LACSD discharge requirements—using industrial pretreatment where needed—and JWPCP operations would comply with Los Angeles RWQCB Order No. R4-2011-0151. Regulatory requirements RR HAZ-1 and HAZ-2 require compliance with state and federal regulations governing transport and disposal of hazardous materials, and thus are also pertinent to discharge limits for sewers. Compliance with these regulatory requirements would ensure wastewater generated by project buildout would comply with existing wastewater discharge requirements of the Los Angeles RWQCB.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.15-1 would be potentially significant.

5.15.1.5 CUMULATIVE IMPACTS

Wastewater Treatment Capacity

The area considered for cumulative impacts is the service area of the JWPCP, which is owned and operated by the LACSD. The JWPCP serves approximately 3.5 million people throughout Los Angeles County (LACSD 2017b). Wastewater flows through the JWPCP are projected to increase to 295 mgd in 2035 in proportion to estimated population growth in Los Angeles County over the 2015-2035 period (LACSD 2015b). The JWPCP has a 400 mgd capacity. Therefore, there is adequate wastewater treatment capacity in the region to accommodate projected future growth, and cumulative impacts to wastewater treatment capacity would be less than significant.

Wastewater Treatment Requirements

Future cumulative projects developed in accordance with the County's General Plan would also be required to comply with LACSD discharge limits and Los Angeles RWQCB waste discharge requirements. Adherence to these regulatory requirements would reduce cumulative impacts to less than significant levels.

Sewers

Impacts of buildout under the proposed project to sewers would be limited to sewers in and near the Specific Plan area. LACSD would require future projects to prepare sewer capacity studies to determine whether sewer upgrades are needed. These projects would also be required to pay connection fees to the LACSD. Therefore, impacts of the proposed project would not combine with impacts of other cumulative development projects in Los Angeles County, or with impacts of development projects in LACSD's service area but outside the county, to result in significant cumulative impacts.

5.15.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.15-1** Project development would result in an impact on the County's and Sanitation Districts of Los Angeles County's wastewater conveyance systems.

5.15.1.7 MITIGATION MEASURES

Impact 5.15-1

USS-1 Prior to the issuance of grading permits for individual development projects in the West Carson TOD Specific Plan area, the Los Angeles County Department of Public Works shall review the recommended sewer line replacement and upsizing improvements outlined in the "West Carson TOD Sewer Area Study" prepared by IBI Group, Inc. (dated February 2, 2018) and determine whether sewer improvements would be required as part of the proposed projects.

To assist in the determination, the Department of Public Works may require the project applicant/developer to submit a site-specific sewer flow monitoring study to provide a more detailed analysis of the true sewer flow depths over time and to determine if the potential for surcharge conditions would occur due to project development. The sewer flow monitoring study shall be submitted to the Department of Public Works for review and approval.

5.15.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Upon implementation of Regulatory Requirements USS-1, HAZ-1, and HAZ-2 and Mitigation Measure USS-1, impacts would be reduced to less than significant levels.

5.15.2 Water Supply and Distribution Systems

5.15.2.1 ENVIRONMENTAL SETTING

Relevant Programs and Regulations

Federal

Clean Water Act

The federal Clean Water Act establishes regulatory requirements for potable water supplies, including criteria for raw and treated water quality. The California Water Service Company, Dominguez District the water purveyor for the project site – is required to monitor water quality and conform to the CWA.

Safe Drinking Water Act

The federal Safe Drinking Water Act sets standards for drinking water quality and is enforced by the EPA, who oversees the states, localities, and water suppliers that implement those standards. The Safe Drinking Water Act protects drinking water and its sources, which include rivers, lakes, and groundwater.

State

Urban Water Management Planning Act

The Urban Water Management Planning Act of 1983 requires water management planning for large suppliers of water. The threshold for water management plans is 3,000 acre-feet annually (2.6 mgd) OR supplying more than 3,000 customers. Under this rule, water providers are required to:

- Prepare a plan that assesses source water sustainability and reliability over expected water demand growth in 5-year increments for a minimum of 20 years future planning.
- Prepare a plan for water supply in future years under the following conditions: normal, one year drought, and multiple year drought. Water sources must be able to supply the water demand in all conditions.
- Provide a plan to implement conservation measures by customers.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act—collectively, Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319—passed in 2014 and defines sustainable groundwater measures. The legislation provides guidance for groundwater management and identifies the undesirable results of groundwater withdrawal. The plan is intended to ensure sustainability measures are used in all groundwater activities such as pumping and intentional recharge.

Water Conservation Plan

The 20x2020 Water Conservation Plan of 2010 was a byproduct of the Water Conservation Act of 2009. The plan had a threefold effect: 1) established a benchmark of current usage per capita off 2005 baseline data; 2)

established an intermediate goal for all water providers to meet by 2015; and 3) established a 20 percent reduction in water usage by 2020.

Senate Bill 407

California Senate Bill 407 of 2009 was enacted to decrease wasteful water usage by homeowners. It requires all noncompliant plumbing fixtures installed before 1994 to be updated with plumbing fixtures that meet current usage standards. Standards for water-conserving plumbing fixtures are set forth in California Green Building Standards Code (CALGreen; Title 24, California Code of Regulations, Part 11) Section 301.1.1. CALGreen is updated triennially; the 2016 CALGreen took effect on January 1, 2017.

Drought Emergency Regulation

In this regulation, adopted in May 2015 and extended through 2016, the State Water Resources Control Board mandated that urban water suppliers reduce potable water use from a 2013 benchmark by a percentage dictated by the board. The Rancho Dominguez District was required to reduce potable water use by 16 percent.

Existing Conditions

Water Supply

The Rancho Dominguez District (RDD) of the California Water Service Company (CWSC) is the provider of potable water within the boundaries of the West Carson TOD Specific Plan. RDD has a 35-square-mile service area and includes the majority of the City of Carson; a large section of the City of Torrance; small sections of the cities of Compton, Long Beach, and Los Angeles; and a portion of unincorporated Los Angeles County.

RDD water supplies come from the following sources:

- **Groundwater:** Groundwater comprised 17 percent of all water distributed in the RDD from 2011 to 2015. This water is provided through nine active wells in the RDD. The RDD's urban water management plan (UWMP) relies on groundwater for 10 to 25 percent of all supplied water. Reliance on groundwater has decreased in the most recent years due to drought conditions (IBI 2017).

  In 2015, RDD supplies included 4,405 acre-feet of groundwater. RDDs allowable pumping allocation from the West Coast and Central subbasins combined was 16,897 acre-feet in 2015 (RDD 2016). The WRD is building an advanced water treatment facility—scheduled to begin operation in 2018—that will provide an additional 10,000 afy of highly treated recycled water for groundwater recharge (WRD 2016).

- **Purchased Water:** Purchased water comprised 68 percent of all water distributed in the RDD in the years 2011 to 2015. This water is provided through four feeders of the West Basin Municipal Water District from treated water from the Colorado River. The rated capacity of the purchased water feeders totals 72,000 gallons per minute (gpm) or 103.68 mgd (IBI 2017).

  In 2015, RDD supplies included 26,886 acre-feet of imported water (RDD 2016).

- **Recycled Water:** Recycled water comprised 15 percent of all water distributed in the years 2011 to 2015. This is provided through West Basin, a separate water supplier in El Segundo operated by the West Basin Municipal Water District. However, no recycled water lines are located in the Specific Plan area. West Basin does provide water to the RDD, so future expansion efforts to use recycled water to mitigate potable water use can be explored (IBI 2017).

  In 2015, RDD water supplies included 6,081 acre-feet of recycled water. Recycled water uses in RDD's service area consist of landscape irrigation, industrial uses, and groundwater recharge (RDD 2016).

Forecast water supplies are shown in Table 5.15-1. Based on the Rancho Dominguez District UWMP, RDD forecasts that in 2040, groundwater will comprise about 39 percent of its water supplies, imported water about 36 percent, and recycled water 25 percent.

Table 5.15-1 Rancho Dominguez Water Supply and Demands Summary, afy

	2020	2025	2030	2035	2040
Supply					
Imported Water	16,897	16,897	16,897	16,897	16,897
Groundwater	17,899	17,804	17,919	18,074	18,274
Recycled Water	7,950	8,800	9,700	10,700	11,800
Total	42,746	43,501	44,516	45,671	46,971
Demands					
Potable and Raw Water	31,508	31,413	31,528	31,683	31,883
Recycled Water	11,238	12,088	12,988	13,988	15,088
Total Demands	42,746	43,501	44,516	45,671	46,971

Source: RDD 2016.

Water Supply Reliability

Based on RDD's 2015 UWMP, the district will be able to meet water demands in its service area in normal, single-dry-year, and multiple-dry-year conditions over the 2020-2040 period. Future water demands are forecast based on historical growth rates over 15 or 20 years depending on the land use category (RDD 2016). MWD also estimates that it will be able to meet all demands of its 26 member agencies for imported water over the 2020-2040 period (RDD 2016).

Further, the forecast groundwater supplies in Table 5.15-1 are considered reliable because the WRD is building an advanced water treatment facility that will provide an additional 10,000 afy of highly treated recycled water for groundwater recharge and is scheduled to begin operations in 2018.

Water Shortage Contingency Plan

RDD has a water shortage contingency plan consisting of four stages; Stage 1 responds to a supply reduction of up to 10 percent and Stage 4 a supply reduction of over 35 percent. The contingency plan includes a set of restrictions and prohibitions on indoor and outdoor water use for each of the four stages.

Water Treatment Facilities

Water treatment facilities filter and/or disinfect water before it is delivered to customers. Water imported by the MWD is treated at five treatment plants with total capacity of 2.64 billion gallons per day. The two treatment plants in the Los Angeles Basin are the Weymouth Treatment Plant in the City of La Verne, with 520 mgd capacity, and the Diemer Treatment Plant in the City of Yorba Linda in Orange County, with 520 mgd capacity (MWD 2017). Actual treated water production at the Weymouth Treatment Plant in 2015 was about 301 mgd, for a residual capacity of approximately 219 mgd; production at the Diemer Plant in 2015 was about 223 mgd, for a residual capacity of about 297 mgd (MWD 2016b).

The WRD's advanced water treatment facility, which will provide an additional 10,000 afy of highly treated recycled water for groundwater recharge, is scheduled to begin operation in 2018 (WRD 2016).

Two facilities in the City of Torrance remove salt entering the West Coast Subbasin through seawater intrusion: the Brewer Desalting Facility with 2.1 mgd capacity operated by the West Basin Municipal Water District (WBMWD); and the Goldsworthy Desalter, operated by the WRD, with an expansion to 5 mgd capacity scheduled for completion in 2017 (WBMWD 2016).

Historical Water Demands for the District

Historical yearly water usage for the District and the breakdown of the water source are shown in Figure 5.15-2. Historical demand is shown in acre-feet, but the range of usage since 1992 is between 26 and 36 MGD. (IBI 2017).

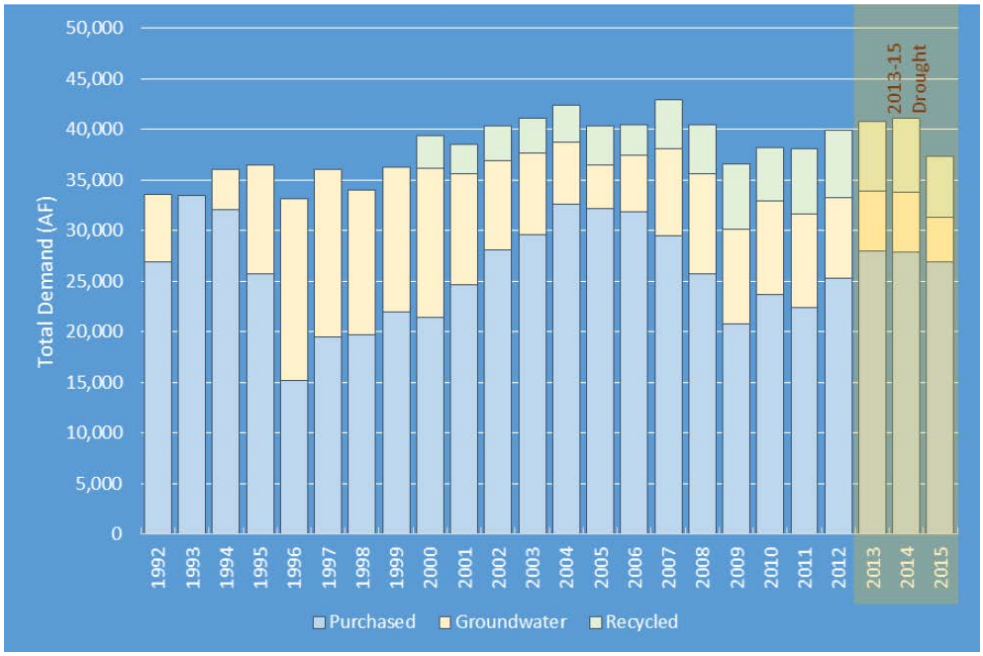


Figure 5.15-2 Historical Water Demands

Taken From Dominguez District Conservation Master Plan: 2016-2020 (2015). Figure shows breakdown, by year, of supplied water by source.

Water Conveyance

Rancho Dominguez District operates 392 miles of pipeline. The Specific Plan area is serviced by pipe sizes varying from 2-inch connectors to 33-inch main lines. The vast majority of pipe is composed of either transite (asbestos-cement) or polyvinyl chloride (PVC). The largest pipe connects the Specific Plan area to the east side of Interstate 110 via a 33-inch water main. This decreases to a 16-inch main before connecting to the 10-inch distribution pipe on the west boundary of the Specific Plan area on Normandie Avenue. The majority of distribution pipes off the main lines are 6-inch and 8-inch water lines. Figure 5.15-3, *Existing Water Main Sizes Onsite,* shows existing water main sizes onsite.

Water supply requirements and flows were estimated using industry standards to determine capacities. The Harbor UCLA Medical Center, located along the main ranging from 24 to 33 inches diameter, is the largest estimated consumer in the area. The large water main next to the medical center campus can provide both water supply and fire flow protection. The distribution pipe size is sufficient for existing water demands in the Specific Plan area.

RDD has a water line replacement plan with the goal to replace water mains every 50 years. The pipes in West Carson are included in this plan. The district no longer uses transite pipes for water mains, and existing transite pipes will be phased out and replaced over time (IBI 2017).

5.15.2.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-2 Would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

U-4 Would not have sufficient water supplies available to serve the project from existing entitlements and resources, and new and/or expanded entitlements would be needed.

5.15.2.3 PLANS, PROGRAMS, AND POLICIES

Regulatory Requirements

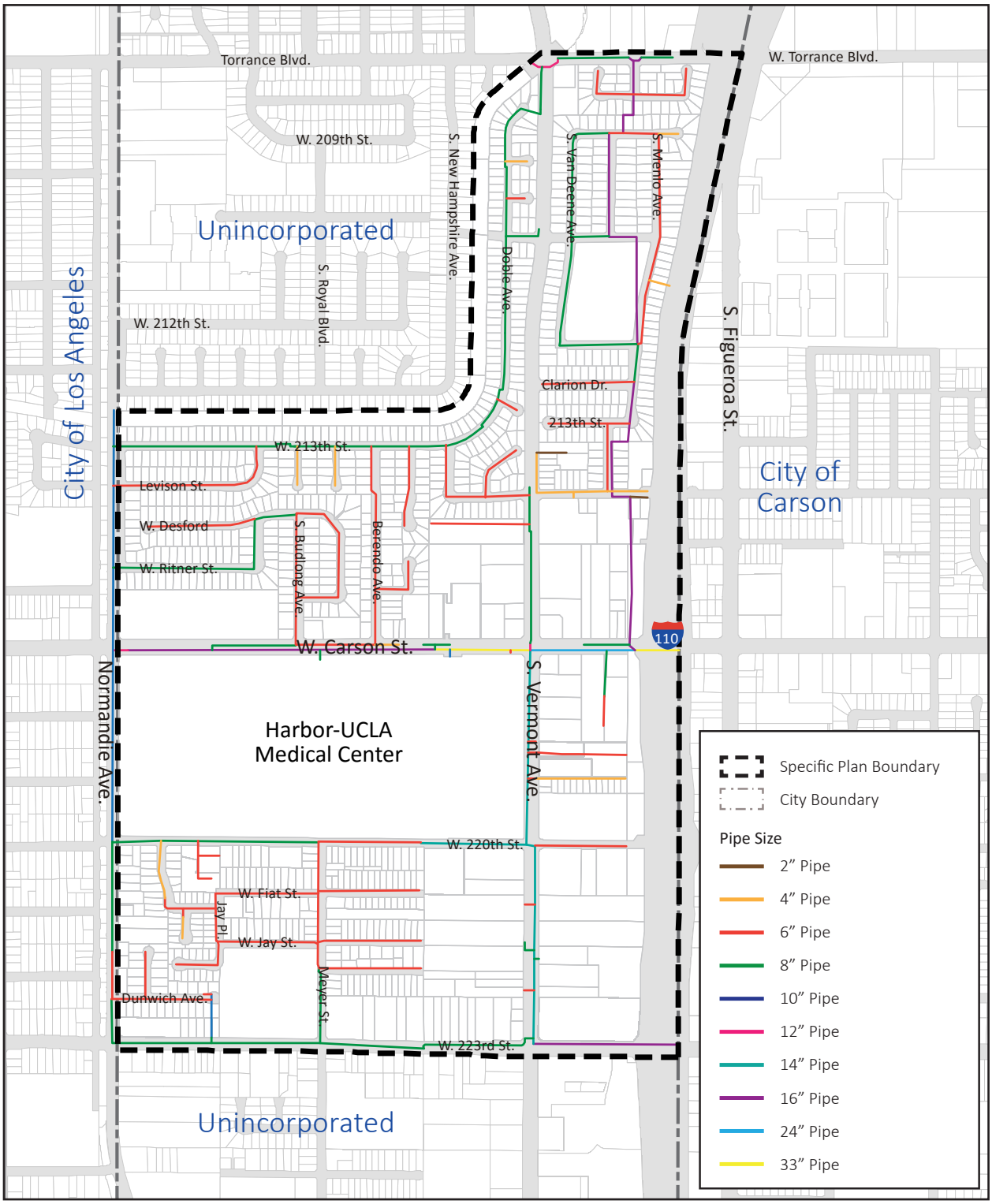
See RR USS-2 in Section 5.15.1.3.

5.15.2.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Figure 5.15-3 - Existing Water Main Sizes

5. Environmental Analysis



Base Map Source: ESRI, IBI Group, 2017

This page intentionally left blank.

Impact 5.15-2: Water supply and delivery systems are adequate to meet project requirements. [Thresholds U-2 (part) and U-4]

Impact Analysis: The analysis in this section for water systems assesses the impact of the proposed Specific Plan on two elements of the water system: 1) the supply of water for the Specific Plan area and 2) the water distribution system and its physical capacity to transport and supply water to new development in the Specific Plan area.

Water demand levels were calculated using the demand forecasts in the RRD's 2015 UWMP. Water demand considers changes in development and population within the plan area for single-family and multifamily residences and commercial, industrial, and institutional land uses. The assessment of water delivery systems considered the current size and condition of these systems in the Specific Plan area, along with existing flows and utilization of these facilities.

Water Delivery System

The Specific Plan area land use changes include an influx of new households and water flow in areas north of Carson Street and east of Vermont Avenue around the Harbor-UCLA Medical Center. South from West 220th Street along Vermont Avenue, this increase in flow is a result of additional proposed development on both sides of Vermont Avenue. The water main service line in the area, along Carson Street coming from the east, ranges between 24 and 33 inches diameter. A worst-case scenario for water service demand with buildout of the Specific Plan land uses was determined following these guidelines:

- 200 gallons per day per person
- Maximum daily demand of 1.75 x average daily demand
- Peak factor of 3 x average daily demand
- Maximum head loss in the pipe – that is, conveyance loss due to friction between wastewater and the pipe walls – not to exceed 3.5 feet per 1,000 feet of water pipeline

The pipeline flow was analyzed against these parameters, and the forecast change in water demand with the proposed project is detailed in Table 5.15-2.

Table 5.15-2 Forecast Water Demand with and without Project, gallons per day

Scenario	Average Daily Demand	Maximum Daily Demand
2035 Baseline	911,500	1,595,125
2035 with Project	2,133,900	3,734,325

Source: IBI Group 2017.

The 14-inch pipe along Vermont Avenue from West Carson Street to West 220th Street is forecast to receive a sufficient increase in flow to require resizing according to the analysis parameters identified above. To meet the requirements of these parameters, the pipeline would require resizing to a 20-inch pipe at minimum. South from 220th Street to 223rd Street along Vermont Avenue, the 14-inch pipeline is near the head loss

threshold. The flow rate north from West Carson Street to West 214th Street is split between two lines: an 8-inch pipe along Vermont Avenue and a 16-inch pipe along Menlo Avenue. Depending on the locations of the planned households and which distribution line supplies the water, one or both of these lines will need to be replaced with larger-capacity pipes. Without knowing flow into each pipeline, exact sizing cannot be recommended at this time. However, anticipated locations of water main upgrades are shown on Figure 5.15-4, *Recommended Locations of Water Main Upgrades for Specific Plan Buildout*.

A recent fact sheet from the California Water Board titled "August 2015 Statewide Conservation Data" shows that the average flow in the South Coast Hydrologic Region has decreased significantly to roughly 100 gallons per capita per day. Using this flow and assuming that water conservation measures—low water use toilets, low flow showerheads, watering lawns and gardens in morning or evening hours, improved leak detection and repair, etc.—are in place to maintain a low average daily demand, there is no pipe that exceeds the threshold of head loss per 1,000 feet noted above.

The Water Area Study for the proposed project, included as Appendix L to this DEIR, recommends the following infrastructure improvements to the current water conveyance system to accommodate buildout of the proposed project:

- **Vermont Avenue.** The 14-inch pipe running between West Carson Street and West 220th Street shall be replaced with a 20-inch pipe.

- **Vermont Avenue.** The 14-inch pipe running between 220th Street and 223rd Street is near the head loss threshold and shall be monitored for potential need for upsizing to 20-inch pipe.

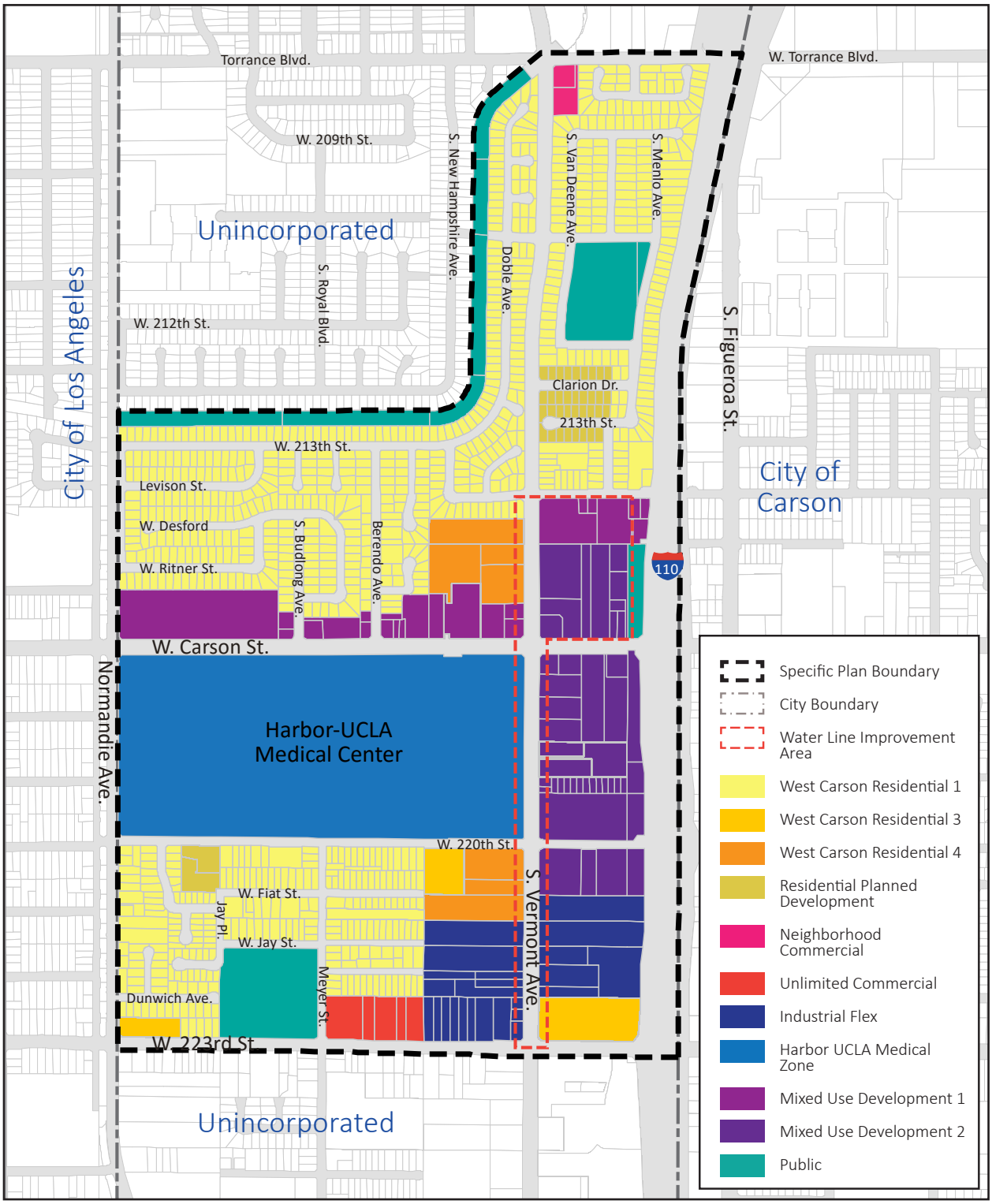
- **Vermont Avenue.** The 8-inch pipe running between West 214th Street and West Carson Street shall be monitored for potential upsizing, depending on the location of new development north of West Carson Street.

- **Menlo Avenue.** The 16-inch pipe running between West 214th Street and West Carson Street shall be monitored for potential upsizing, depending on the location of new development north of West Carson Street.

Without implementation of these water conveyance infrastructure improvements, impacts may be potentially significant.

Figure 5.15-4 - Anticipated Water Main Upgrades

5. Environmental Analysis



Base Map Source: ESRI, IBI Group, 2017

This page intentionally left blank.

Water Supplies

Buildout of the proposed project would increase the population in the Specific Plan area from 3,879 to 9,990. Under the current 20x2020 reduction program, an overall demand of 173 gallons per capita per day (gpcd) would result in an increase in water demand of 1,164 afy. Within the Specific Plan area, annual water demand would increase from 739 to 1,903 acre-feet.[1,2] This amount is within the growth range expected for water demand during the 2015-2035 period (see Table 5.15-1). If the 20x2020 reduction is not met and water demand remains at the 2015 target levels (200 gpcd), new growth resulting from the Specific Plan would result in an increase in demand of 1,283 afy.

Nevertheless, both demand growth figures fall within the anticipated demand growth identified in the RDD's 2015 UWMP. In addition, projects developed under the Specific Plan would implement water conservation and water efficiency measures in the California Green Building Standards Code, as required under RR USS-2. Thus, impacts to water supply resulting from the proposed Specific Plan are anticipated to be less than significant.

Water Treatment

As stated in Section 5.15.2.1 under *Water Treatment Facilities*, the Diemer and Weymouth Water Treatment Plants have combined remaining capacity of approximately 516 mgd. Therefore, the water treatment plants would be able to treat the increased water demand at full buildout of the proposed project. Impacts to water treatment facilities would be less than significant.

Level of Significance before Mitigation: Based on the analysis above, Impact 5.15-2 would be potentially significant.

5.15.2.5 CUMULATIVE IMPACTS

Water Delivery System

Impacts to water mains due to buildout of the proposed project would be limited to mains in and near the Specific Plan area. Therefore, project-related impacts would not combine with impacts of other cumulative development projects within the County under the County's General Plan to result in significant cumulative impacts.

[1] Estimated wastewater generation at project buildout per the Environmental Assessment is about 2.41 mgd or 2,702 afy (see Section 5.15.1.4 of this DEIR), greater than estimated water demands. Wastewater generation was estimated based on acreage per proposed zoning district and wastewater generation factors for general land use categories; water demand is estimated based on a demand target per person per day from RDD's 2015 UWMP.

[2] The estimated water demand onsite at project buildout used in analyzing water main capacity is about 2.134 mgd (see Table 5.15-2), higher than the aforementioned 1,903 afy, or about 1.698 mgd. The demand estimate for analyzing water main capacity used worst-case scenario demand factors to minimize the possibility of underestimating impacts on water main capacity.

Water Supplies

The analysis of water supplies and demands above addresses Rancho Dominguez District's entire 35-square-mile service area, and thus addresses cumulative impacts. Thus, as analyzed above, cumulative impacts to water supplies would be less than significant.

Water Treatment

The two water treatment plants for which residual capacity information is available (described in Section 5.15.2.1 under *Water Treatment Facilities*), the Diemer and Weymouth treatment plants, have combined residual capacity of about 516 mgd. Water demands in RDD's service area are forecast to increase by about 9,599 afy, or 8.6 mgd, between 2015 and 2040 (see Table 5.15-1). There is sufficient water treatment capacity in the region for the estimated net increase in water demands in RDD's service area and from the proposed project. Thus, cumulative impacts to water treatment facilities would be less than significant.

5.15.2.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Without mitigation, these impacts would be **potentially significant**:

- Impact 5.15-2 Buildout of the proposed project would require infrastructure improvements for the project area's water conveyance system.

5.15.2.7 MITIGATION MEASURES

Impact 5.15-2

USS-2 Prior to the issuance of grading permits for individual development projects in the West Carson TOD Specific Plan area that would be served by the trunk line south of 220th Street, the Los Angeles County Department of Public Works shall review the recommended water conveyance system improvements outlined in the "West Carson Water Area Study" prepared by IBI Group, Inc. (dated August 13, 2017) and determine whether recommended improvements would be required as part of the proposed projects.

To assist in the determination, the Department of Public Works may require the project applicant/developer to submit a site-specific water flow monitoring study to provide a more detailed analysis of the true water flow depths over time to determine if the potential surcharge conditions would occur due to project development. The water flow monitoring study shall be submitted to the Department of Public Works for review and approval.

5.15.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Upon implementation of RR USS-2 and MM USS-2, impacts would be less than significant.

5.15.3 Storm Drainage Systems

5.15.3.1 ENVIRONMENTAL SETTING

Relevant Programs and Regulations

Regulations governing storm drainage – the federal Clean Water Act and National Pollutant Discharge Elimination System, and the Los Angeles County Low Impact Development Standards Manual – are described in Section 5.7, *Hydrology and Water Quality*, of this DEIR.

Existing Conditions

Stormwater runoff in the Specific Plan area is managed by closed and open drainage channels that are split into two drainage systems. The first drainage runs north and east as part of the 208th Street drainage channel, which eventually joins the Dominguez Channel to the northeast in the City of Carson. This drainage is a 10-foot reinforced cement concrete channel next to the northern Specific Plan Area boundary. All drainage basins connected to this channel connect via reinforced concrete pipe ranging from 18 to 84 inches in diameter. The second drainage system is in the southern part of the Specific Plan area and runs south and east into Line A, a storm drain in Figueroa Street, eventually draining into the Wilmington Drain. Both drainage systems have surface runoff and catch basin runoff that feed into the channel, and both are heavily dependent on upstream flows for capacities. Figure 5.15-5, *Existing Storm Drains Onsite*, illustrates the storm drain system in the West Carson TOD Specific Plan area.

5.15.3.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-3 Would 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.

5.15.3.3 PLANS, PROGRAMS, AND POLICIES

Regulatory Requirements

See RR USS-2 and RR HYD-2.

5.15.3.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.15-3: Existing storm drainage systems in the Specific Plan area are adequate to serve the drainage requirements of the proposed project. [Threshold U-3]

Impact Analysis: Stormwater services in the Specific Plan area are connected to a large network of open channel drains, which are tied to a larger collection basin. Stormwater flow in these channels is greatly dependent on upstream and downstream flow. Nearly the entire Specific Plan area is built out with structures, homes, parking lots, streets and sidewalks, and other impervious surfaces. Therefore, development in accordance with the Specific Plan would not substantially increase impervious surfaces beyond existing conditions. For example, existing housing units with lots would retain pervious surface properties and would not require any additional collection basins, and current locations with impervious surfaces would continue to drain with the same infrastructure in place. No additional stormwater collection or transportation infrastructure is needed.

Further, as required under RR HYD-2, individual projects would be required to implement LID BMPs in accordance with the MS4 Permit and the Los Angeles County LID Standards Manual. The use of LID BMPs in project planning and design is intended to preserve a site's predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration, evapotranspiration, and runoff detention. LID BMPs help in offsetting these losses by introducing structural and nonstructural design components that restore these water quality functions into a project's land plan.

Adherence to RR USS-2 would ensure future project's storm drain improvements are designed, constructed, and operated in accordance with the applicable regulations in the Los Angeles County Code, which incorporates by reference the California Building Code, the California Electrical Code, the California Mechanical Code, the California Plumbing Code, the California Fire Code, and the Green Building Standards Code.

Level of Significance before Mitigation: Upon implementation of regulatory requirements RR HYD-2 and USS-2, Impact 5.15-3 would be less than significant.

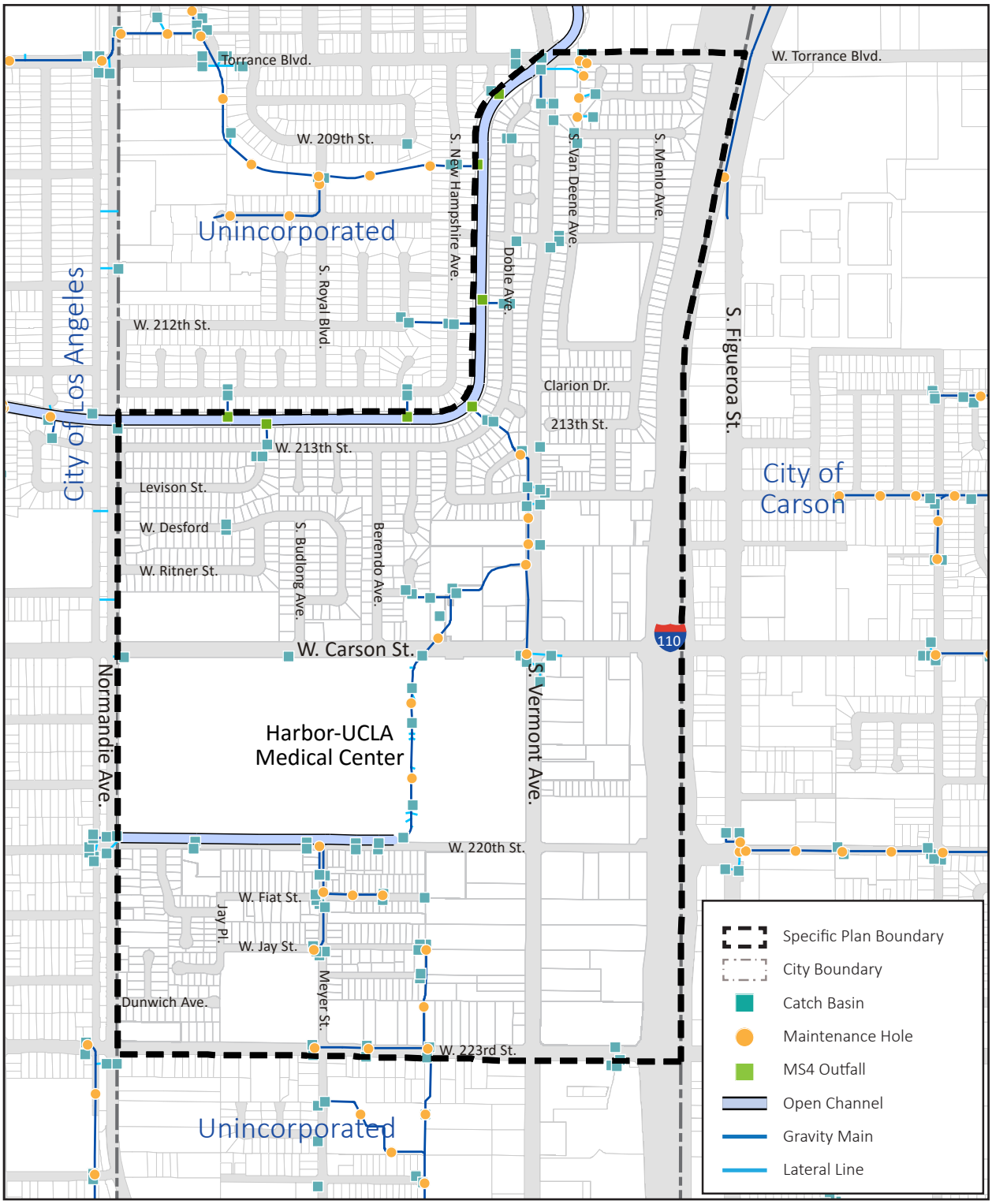
5.15.3.5 CUMULATIVE IMPACTS

The area considered for cumulative impacts to drainage and surface water quality is the Dominguez Watershed. Approximately 91 percent of the land area of the Dominguez Watershed is developed (MEC 2004). Thus, cumulative projects in the watershed are more likely to be redevelopment projects than development projects. These projects would create or replace impervious area and thus could affect the amount of runoff within the watershed. Therefore, the projects would be required to implement LID BMPs, in accordance with the MS4 Permit and the Los Angeles County LID Standards Manual. Cumulative impacts would be less than significant and project impacts would not be cumulatively considerable.

5.15.3.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements, Impact 5.15-3 would be less than significant.

Figure 5.15-5 - Existing Storm Drains
5. Environmental Analysis



Base Map Source: ESRI, IBI Group, 2017

This page intentionally left blank.

5.15.3.7 MITIGATION MEASURES

No mitigation measures are required.

5.15.3.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.15.4 Solid Waste

5.15.4.1 ENVIRONMENTAL SETTING

Relevant Programs and Regulations

Federal

The Resource Conservation and Recovery Act of 1976 (Title 40 of the Code of Federal Regulations), Part 258, contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design (liners, leachate collection, run-off control, etc.), groundwater monitoring, and closure of landfills.

State

Assembly Bills 939, 341, and 1826

Assembly Bill 939 (Integrated Solid Waste Management Act of 1989; Public Resources Code 40050 et seq.) established an integrated waste-management system that focused on source reduction, recycling, composting, and land disposal of waste. AB 939 required every California city and county to divert 50 percent of its waste from landfills by the year 2000. Compliance with AB 939 is measured in part by comparing solid waste disposal rates for a jurisdiction with target disposal rates. Actual rates at or below target rates are consistent with AB 939. AB 939 also requires California counties to show 15 years of disposal capacity for all jurisdictions in the county or show a plan to transform or divert its waste.

Assembly Bill 341 (Chapter 476, Statutes of 2011) increased the statewide solid waste diversion goal to 75 percent by 2020. The law also mandates recycling for commercial and multifamily residential land uses as well as schools and school districts.

Assembly Bill 1826 (California Public Resources Code Sections 42649.8 et seq.), signed into law in 2014, requires recycling of organic matter by businesses and multifamily residences of five of more units generating such wastes in amounts over certain thresholds. The law took effect in April 2016.

California Green Building Standards Code

Section 5.408 (Construction Waste Reduction, Disposal, and Recycling) of the California Green Building Standards Code (CALGreen; Title 24, California Code of Regulations, Part 11) requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. CALGreen is updated on a three-year cycle; the 2016 CALGreen took effect on January 1, 2017.

Existing Conditions

Solid Waste Collection

CalMet Services collects solid waste from single-family residences in West Carson under an exclusive franchise contract with the Los Angeles County Department of Public Works. Several waste haulers collect commercial and multi-family residential solid waste (dumpsters and roll-off containers) under nonexclusive franchise contracts with the Department of Public Works (DPW 2017a; DPW 2017b).

Solid Waste Recycling and Disposal

Solid waste from West Carson is taken to Paramount Resource Recycling in the City of Paramount, the Carson Transfer Station and Material Recovery Facility in the City of Carson, and the Southeast Resource Recovery Facility (SERRF) on Terminal Island in the City of Long Beach (Acosta 2016).

At the SERRF, recyclable materials are removed from the waste stream, the remainder is burned for electricity generation, and the ash is used for landfill road base material. The SERRF has a maximum permitted through-put of 2,240 tons per day and processes an average of 1,290 tons per day (LACSD 2016b; CalRecycle 2016a).

At Paramount Resource Recycling and the Carson Transfer Station, recyclable material is removed from the waste stream and the rest is transported either to a landfill or to a transformation facility such as the SERRF.

Solid waste from Paramount Resource Recycling and the Carson Transfer Station is taken to the Olinda-Alpha Sanitary Landfill near the City of Brea in Orange County and to the El Sobrante Landfill near the City of Corona in Riverside County (Acosta 2016). Capacity and disposal data and estimated closure dates for the two landfills and the SERRF are listed in Table 5.15-3. As shown, the three facilities have combined residual capacity of over 13,000 tons per day.

Table 5.15-3 Solid Waste Disposal and Transformation Facilities Serving West Carson

Facility and Nearest City	Remaining Capacity, cubic yards [tons]	Daily Disposal Capacity, tons			Estimated Closing Date
		Maximum Permitted	Actual (average)	Residual	
Olinda-Alpha Sanitary Landfill Brea, Orange County	34,200,000 [25,650,000]	8,000	5,447	2,553	2021
El Sobrante Landfill Corona, Riverside County	[145,530,000]	16,054	6,610	9,444	2045
Southeast Resource Recovery Facility Long Beach (Recycling and incineration)	—	2,240	1,290	950	Not Available
Total	[171,180,000]	26,294	12,947	13,347	—

Sources: Acosta 2016; CalRecycle 2016a; CalRecycle 2016b; CalRecycle 2016c.

Solid Waste Diversion Programs

There are 51 solid waste diversion programs in unincorporated Los Angeles County (data not available for specific unincorporated communities). Programs include composting; facility recovery, such as transfer stations; household hazardous waste collection and education programs; recycling; source reduction programs, including business waste reduction programs; special waste materials, such as tires and concrete/asphalt/rubble; and waste to energy (such as the SERRF) (CalRecycle 2016d).

Existing Solid Waste Generation

Existing solid waste generation onsite is estimated to be approximately 21,949 pounds per day, as shown in Table 5.15-4.

Table 5.15-4 Existing Solid Waste Generation Onsite

Land Use	Unit/Square Feet	Quantity	Solid Waste Generation, pounds per day	
			Per unit[1]	Total
Single-family residential	Unit	1,131	10	11,310
Multi-family residential	Unit	172	5.31	913
Commercial	SF	255,902	0.006	1,535
Office	SF	146,510	0.006	879
Industrial	SF	553,923	0.0132	7,312
			Total	21,949

[1] Source: CalRecycle 2017.

5.15.4.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-6 Would be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

U-7 Would not comply with federal, state, and local statutes and regulations related to solid waste.

5.15.4.3 PLANS, PROGRAMS, AND POLICIES

Regulatory Requirements

RR USS-3 The project will be constructed in accordance with the County's Green Building Standards Code and Construction and Demolition Debris Recycling and Reuse Ordinance, which requires a minimum of 65 percent of the "nonhazardous construction and demolition debris" (by weight or volume) to be recycled or reused unless a lower percentage is approved by the Director of Public Works.

RR USS-4 The project will be designed, constructed, and operated in accordance with the County's Departmental Recycling Program Directives to implement waste reduction and recycling measures.

5.15.4.4 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.15-4: Existing solid waste facilities would be able to accommodate project-generated solid waste and comply with related solid waste regulations. [Thresholds U-6 and U-7]

Impact Analysis:

Solid Waste Generation and Disposal

Solid waste generation onsite at Specific Plan buildout is forecast to be approximately 43,463 pounds per day, a net increase of approximately 21,514 pounds per day (or about 10.8 tons per day), as shown in Table 5.15-5. The two landfills and one transformation facility serving West Carson have residual capacity of over 13,000 tons per day (see Table 5.15-4). Thus, there is sufficient solid waste disposal and transformation capacity in the region for project-generated solid waste, and impacts would be less than significant.

Table 5.15-5 Estimated Solid Waste Generation Onsite at Specific Plan Buildout

Land Use	Unit/Square Feet	Quantity	Solid Waste Generation, pounds per day	
			Per unit[1]	Total
Single-family residential	Unit	938	10	9,380
Multi-family residential	Unit	2,636	5.31	13,997
Commercial	SF	754,294	0.006	4,526
Office	SF	1,335,075	0.006	8,010
Industrial	SF	571,951	0.0132	7,550
Total				43,463
Existing Solid Waste Generation (from Table 5.15-4)				21,949
Net Increase				21,514

[1] Source: CalRecycle 2017.

Compliance with Laws and Regulations Governing Solid Waste Disposal and Diversion

Projects developed under the Specific Plan would comply with laws and regulations pertaining to solid waste disposal and diversion. Per RR USS-3, at least 65 percent of nonhazardous construction and demolition waste from nonresidential construction operations would be recycled and/or salvaged in accordance with CALGreen Section 5.408. And per RR USS-4, commercial and multifamily residential projects developed pursuant to the Specific Plan would include storage areas for recyclable materials in accordance with AB 341. Businesses and multifamily residences of five or more units generating organic wastes exceeding certain amounts would recycle organic matter in compliance with AB 1826. Specific Plan buildout would not interfere with Los Angeles County's compliance with AB 939.

Level of Significance before Mitigation: Upon implementation of RRs USS-3 and USS-4, Impact 5.15-4 would be less than significant.

5.15.4.5 CUMULATIVE IMPACTS

The area for which cumulative solid waste disposal impacts are considered is Los Angeles County. The estimated countywide increase in solid waste disposal between 2015 and 2035 is shown in Table 5.15-6 and is based on the California Department of Finance 2015 households estimate; US Census Bureau 2011 employment estimate; SCAG projections for 2035 based on County General Plan development projections; and solid waste generation rates from the California Department of Resource Recovery and Recycling.

Table 5.15-6 Estimated Net Increase in Solid Waste Generation, County of Los Angeles

	2016 [2014]	2040	Net Increase, 2016-2040	Solid Waste Generation in Pounds per Day	
				Per unit	Total
Households	3,308,022	3,946,600	705,396	7.7 pound/unit/day[1]	5,431,549
Employment	[3,868,109]	5,226,000	1,357,891	6.1 pound/employee/day[2]	8,283,135
				Total	13,714,684

Sources: SCAG 2016; US Census 2016, CalRecycle 2017.
[1] The waste generation factor used here is the average of the rates for single-family and multifamily units (10 pounds/unit/day and 5.3 pounds/unit/day, respectively).
[2] The generation factor is for general commercial use; it is the median of three generation factors for general commercial use listed on the California Department of Resource Recycling and Recovery's website.

As shown in the table, the estimated net increase in solid waste disposal from the County of Los Angeles is approximately 13.7 million pounds per day, or about 6,857 tons per day. As shown in Table 5.15-3, the two landfills and one transformation facility accepting the vast majority of the solid waste from just the community of West Carson have a combined residual capacity of over 13,000 tons per day. Other landfills serving the County would receive solid waste generated by cumulative projects depending on their location in the County. Therefore, the estimated net increase in solid waste generation would not require the construction of new or expanded landfills. Cumulative impacts would be less than significant, and impacts of the proposed project on solid waste disposal capacity would not be cumulatively considerable.

5.15.4.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements, Impact 5.15-4 would be less than significant.

5.15.4.7 MITIGATION MEASURES

No mitigation measures are required.

5.15.4.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.15.5 Energy

Impacts arising from potential conflicts with the Los Angeles County Building Code and potential inefficient energy uses were determined to be less than significant in Section 6, *Energy*, of the Initial Study included as Appendix A to this DEIR.

Thus, the analysis in this section focuses on Threshold (e) in Section 19, Utilities and Service Systems, of the County's CEQA Checklist, which addresses energy capacity problems and construction of new energy facilities.

5.15.5.1 ENVIRONMENTAL SETTING

Relevant Programs and Regulations

Federal

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (Public Law 110-140) seeks to provide the nation with greater energy independence and security by increasing the production of clean renewable fuels; improving vehicle fuel economy; and increasing the efficiency of products, buildings, and vehicles. It also seeks to improve the energy performance of the federal government. The act sets higher corporate average fuel economy standards; the Renewable Fuel Standard; appliance energy efficiency standards; building energy efficiency standards; and accelerated research and development tasks on renewable energy sources (e.g., solar energy, geothermal energy, and marine and hydrokinetic renewable energy technologies), carbon capture, and sequestration.

State

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. CALGreen was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of CALGreen became effective January 1, 2011, and the 2016 CALGreen took effect on January 1, 2017.

Renewables Portfolio Standard

The California Renewables Portfolio Standard (RPS) was established in 2002 under Senate Bill 1078 and was amended in 2006 and 2011. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. The California Public Utilities Commission is required to provide quarterly progress reports on progress toward RPS goals. This has accelerated the development of renewable energy projects throughout the state. Based on the 3rd quarter 2014 report, the three largest retail energy utilities provided an average of 20.9 percent of its supplies from renewable energy sources. Since 2003, 8,248 megawatts of renewable energy projects have started operations (CPUC 2014). Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Appliance Efficiency Regulations

California's Appliance Efficiency Regulations contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters, fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California. These standards are updated regularly to allow consideration of new energy efficiency technologies and methods.

Title 24, California Code of Regulations, Part 6: Energy Efficiency Standards for Buildings

The Energy Efficiency Standards for Residential and Nonresidential Buildings (24 CCR Part 6) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The California Energy Commission adopted the 2008 changes to the Building Energy Efficiency Standards in order to (1) "Provide California with an adequate, reasonably-priced, and environmentally-sound supply of energy" and (2) "Respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its greenhouse gas emissions to 1990 levels by 2020." Title 24 Part 6 of the 2013 California Building Standards Code, the 2013 California Energy Code, went into effect on July 1, 2014, and includes energy efficiency updates (CBSC 2015). Buildings constructed in accordance with the 2013 Building and Energy Efficiency Standards were 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features.

Most recently, the California Energy Commission adopted the 2016 Building and Energy Efficiency Standards, which went into effect on January 1, 2017. The 2016 standards continue to improve upon the current 2013 standards for new construction of and additions and alterations to residential and nonresidential buildings. Under the 2016 standards, residential buildings are 28 percent more energy efficient than the 2013 standards, and nonresidential buildings are 5 percent more energy efficient than the 2013 standards (CEC 2015a).

The 2016 standards do not achieve zero net energy. However, they do get very close to the state's goal and make important steps toward changing residential building practices in California. The 2019 standards will

take the final step to achieve zero net energy for newly constructed residential buildings throughout California (CEC 2015b).

Existing Conditions

Electricity

The project site is in Southern California Edison's (SCE) service area, which spans much of southern California—from Orange and Riverside counties in the south to Santa Barbara County in the west to Mono County in the north (CEC 2015c). Total electricity consumption in SCE's service area in gigawatt-hours (GWh) was forecast to be 102,218 GWh in 2016 and increase to 113,612 GWh in 2025 for the middemand scenario (CEC 2016). (One GWH is equivalent to one million kilowatt-hours.) Sources of electricity sold by SCE in 2014, the latest year for which data are available, were:

- 24 percent renewable, consisting mostly of geothermal and wind
- 3 percent large hydroelectric
- 27 percent natural gas
- 6 percent nuclear
- 40 percent unspecified sources—that is, not traceable to specific sources (SCE 2015).

Existing electricity demands from existing development in the Specific Plan area are estimated to be approximately 19.9 million kilowatt-hours annually, as shown in Table 5.15-7.

Table 5.15-7 Estimated Existing Electricity Demands Onsite

Land Use	Unit/Square Feet	Quantity	Electricity Demands, kWh/yr	
			Per Unit[1]	Total
Single-Family Residential	Unit	1,131	7,204.5	8,148,290
Multifamily Residential	Unit	172	3,523.4	606,033
Commercial	SF	255,902	13.4	3,439,320
Office	SF	146,510	16.4	2,399,830
Industrial	SF	553,923	9.7	5,345,360
Total				19,938,833

[1] Source: CAPCOA 2016
Note: kWh/yr = kilowatt hours per year

Natural Gas

The Specific Plan area is in the Southern California Gas Company's (SCGC) service area, which spans much of the southern half of California—from Imperial County in the southeast to San Luis Obispo County in the northwest to part of Fresno County in the north to Riverside County and most of San Bernardino County in the east (CEC 2015a). Total natural gas supplies available to SCGC were forecast to remain constant at 3,875 million cubic feet per day from 2015 through 2035. Total natural gas consumption in SCGC's service area were forecast to be 2.681 billion cubic feet per day (bcfd) in 2016 and 2.382 bcfd in 2035 (CGEU 2016).

Estimated existing natural gas demand onsite is about 51.5 million kBTU annually, as shown below in Table 5.15-8.

Table 5.15-8 Estimated Existing Natural Gas Demands Onsite

Land Use	Unit/Square Feet	Quantity	Natural Gas Demands, kBTU/yr[1]	
			Per unit[2]	Total
Single-Family Residential	Unit	1,131	31,446.2	35,565,700
Multifamily Residential	Unit	172	9,137.0	1,571,570
Commercial	SF	255,902	2.1	539,953
Office	SF	146,510	10.8	1,586,700
Industrial	SF	553,923	22.1	12,241,700
Total				51,505,623

[1] One kBTU (1,000 British thermal units) is equivalent to about 0.971 cubic foot of natural gas.
[2] Source: CAPCOA 2016

5.15.5.2 THRESHOLDS OF SIGNIFICANCE

No specific thresholds apply to electricity and natural gas usage. Appendix F, Energy Conservation, of the CEQA Guidelines contains six possible impact thresholds focusing on energy demands, energy efficiency, impacts on energy supplies, and compliance with energy standards.

This analysis focuses on two topics:

1. Energy demands relative to energy supplies.
2. Energy efficiency in relation to energy standards.

5.15.5.3 PLANS, PROGRAMS, AND POLICIES

The following laws and regulations govern energy efficiency:

Federal

- Energy Independence and Security Act of 2007 (Public Law 110-140)

State

- California Green Building Standards Code (Title 24, California Code of Regulations, Part 11)
- Renewable Portfolio Standard
- Appliance Energy Regulations (California Code of Regulations [CCR], Title 20, Parts 1600–1608)
- Energy Efficiency Standards for Buildings (Title 24, California Code of Regulations, Part 6)

5.15.5.4 ENVIRONMENTAL IMPACTS

Impact 5.15-5 Southern California Edison and the Southern California Gas Company could supply project electricity and natural gas demands, respectively, from their forecast energy supplies, and Specific Plan energy demands would not require either provider to obtain new or expanded energy supplies.

Impact Analysis:

Estimated Project Electricity Demands

Specific Plan buildout is expected to generate total electricity demands onsite of about 57.5 million kilowatt-hours annually (kWh/yr), as shown in Table 5.15-9. The net increase in electricity demands is forecast at about 37.6 million kWh/yr. The net increase in electricity demands due to project buildout is within the forecast net increase in SCE's total electricity consumption between 2016 and 2025; thus, SCE would not need to obtain new or expanded electricity supplies to meet estimated project electricity demands. Impacts would be less than significant.

Table 5.15-9 Estimated Electricity Demands at Project Buildout

Land Use	Unit/Square Feet	Quantity	Electricity Demands, kWh/yr	
			Per unit	Total
Single-Family Residential	Unit	938	7,204.9	6,758,200
Multifamily Residential	Unit	2,636	4,059.8	10,701,600
Congregate Care (Assisted Living)	Unit	Not available	Not available	421,988
Commercial	SF	754,294	12.0	9,023,790
Office	SF	1,335,075	14.1	18,815,200
Industrial	SF	571,951	9.2	5,249,460
Total				57,514,238
Existing Demands (from Table 5.15-7)				19,938,833
Net Increase				37,575,405

[1] Source: CAPCOA 2016.
Note: kWh/yr = kilowatt hours per year

Estimated Project Natural Gas Demands

Natural gas demands onsite at Specific Plan buildout are estimated as about 90.8 million kBTU[3] annually, as shown in Table 5.15-10. The net increase in natural gas demands due to project buildout is estimated at about 39.3 million kBTU per year. The estimated net increase in natural gas demands is within SCGC's forecast total residual natural gas supplies in 2035 (that is, supplies less demands) of approximately 1.493 billion cubic feet per day (bcfd). Therefore, SCGC would not need to obtain new or expanded natural gas supplies to meet project natural gas demands, and impacts would be less than significant.

[3] One kBTU (1,000 British thermal units) is equivalent to about 0.971 cubic foot of natural gas.

Table 5.15-10 Estimated Natural Gas Demands at Project Buildout

Land Use	Unit/Square Feet	Quantity	Natural Gas Demands, kBTU/yr	
			Per unit[1]	Total
Single-Family Residential	Unit	938	31,446	29,496,600
Multifamily Residential	Unit	2,636	13,103	34,539,700
Congregate Care (Assisted Living)	Unit	Not available	Not available	1,361,970
Commercial	SF	754,294	2.0	1,503,560
Office	SF	1,335,075	8.7	11,679,900
Industrial	SF	571,951	21.3	12,196,070
Total				90,777,800
Existing Demands (from Table 5.15-8)				51,505,623
Net Increase				39,272,177

[1] Source: CAPCOA 2016.
Note: One kBTU (1,000 British thermal units) is equivalent to about 0.971 cubic foot of natural gas.

Impact 5.15-6 Developments built under the Specific Plan would comply with the requirements for energy efficiency described in Section 5.15.5.1, *Environmental Setting*.

Impact Analysis: Developments built under the Specific Plan would comply with the energy efficiency requirements described in Section 5.15.5.1, *Environmental Setting*:

- **Building Energy Efficiency**
  - **California Green Building Standard** (24 CCR Part 11). Updated triennially; the current 2016 standard took effect on January 1, 2017.
  - **Energy Efficiency Standards for Residential and Nonresidential Buildings** (24 CCR Part 6). Updated triennially; the current 2016 standard took effect on January 1, 2017.
- **Appliance Efficiency Regulations** (20 CCR Parts 1600–1608). Updated regularly.

Note that the Renewables Portfolio Standard described in Section 5.15.5.1 applies to utility providers, not development projects, and thus would not apply to projects developed under the Specific Plan. No adverse impact would occur.

5.15.5.5 CUMULATIVE IMPACTS

SCE's existing and forecast systemwide electricity consumption is described in Section 5.15.5.1, *Existing Conditions*; thus, the preceding analysis addresses cumulative impacts.

SCGC's existing and forecast systemwide natural gas supplies and demands are described in Section 5.15.5.1, *Existing Conditions*; thus, the above analysis addresses cumulative impacts.

5.15.5.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements, Impacts 5.15-5 and 5.15-6 would be less than significant.

5.15.5.7 MITIGATION MEASURES

No mitigation measures are required.

5.15.5.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant.

5.15.6 References

Acosta, Mario (Route Supervisor). 2016, December 6. Phone conversation. CalMet Services.

California Air Pollution Control Officers Association (CAPCOA). 2016, September. California Emissions Estimator Model (CalEEMod). Version 2016-3-1. Appendix D.

California Department of Resources Recycling and Recovery (CalRecycle). 2016a, December 6. Facility/Site Summary Details: Southeast Resource Recovery Facility. http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AK-0083/Detail/.

———. 2016b, December 6. Facility/Site Summary Details: Olinda Alpha: Facility/Site Summary Details: http://www.calrecycle.ca.gov/SWFacilities/Directory/30-AB-0035/Detail/.

———. 2016c, December 6. Facility/Site Summary Details: El Sobrante Landfill. http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0217/Detail/.

———. 2016d, December 6. Countywide, Regionwide, and Statewide Jurisdiction Diversion/Disposal Progress Report. http://www.calrecycle.ca.gov/LGCentral/Reports/jurisdiction/diversiondisposal.aspx.

———. 2017. Estimated Solid Waste Generation Rates. https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates.

California Energy Commission (CEC). 2015a, February 24. California Natural Gas Utility Service Areas. http://www.energy.ca.gov/maps/serviceareas/natural_gas_service_areas.pdf.

———. 2015b, June 10. 2016 Building and Energy Efficiency Standards Adoption Hearing. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf.

———. 2015c, February 24. California Electric Utility Service Areas. http://www.energy.ca.gov/maps/serviceareas/Electric_Service_Areas_Detail.pdf.

———. 2016, January. Electricity Demand by Utility Planning Area. Volume 2 of California Energy Demand 2016-2026 Revised Electricity Demand Forecast. http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN207438_20160115T152222_California_Energy_Demand_20162026_Revised_Electricity_Demand_Fo.pdf.

California Gas and Electric Utilities (CGEU). 2016, July. 2016 California Gas Report. https://www.socalgas.com/regulatory/documents/cgr/2016-cgr.pdf.

Deguzman, Johnmar (Project Engineer). 2017, February 2. Written response to service questionnaire. Sanitation Districts of Los Angeles County.

Department of Public Works of Los Angeles County (DPW). 2017a, June 28. Solid Waste Information Management System. Residential Franchise System: Ocean View/La Rambla/West Carson. https://dpw.lacounty.gov/epd/swims/Residents/FranchiseAreas.aspx.

———. 2017b, June 28. Business Trash Services. Solid Waste Information Management System. https://dpw.lacounty.gov/epd/swims/Businesses/.

Executive Department, State of California. 2016, May 9. Executive Order B-37-16. https://www.gov.ca.gov/docs/5.9.16_Executive_Order.pdf.

IBI Group. 2018, February 2. West Carson TOD Sewer Area Study. Prepared for Los Angeles County Department of Public Works.

———. 2017, August 13. West Carson Storm Water Study.

———. 2017, August 13. West Carson Water Area Study.

Los Angeles County, Sanitation Districts of (LACSD). 2015a, December. Districts Map. http://lacsd.org/civicax/filebank/blobdload.aspx?blobid=4445.

———. 2015b, February 27. 2014 Pretreatment Program Annual Report. http://www.lacsd.org/civicax/filebank/blobdload.aspx?blobid=10476.

———. 2016a, February 29. 2015 Pretreatment Program Annual Report. http://lacsd.org/civicax/filebank/blobdload.aspx?blobid=12481.

———. 2016b, December 12. Southeast Resource Recovery Facility (SERRF) Brochure. http://www.lacsd.org/solidwaste/swfacilities/rtefac/serrf/brochure.asp.

———. 2017a, January 13. Discharge Limits. http://www.lacsd.org/wastewater/industrial_waste/iwpolicies/discharge_limits.asp.

———. 2017b, January 13. Joint Water Pollution Control Plant. http://www.lacsd.org/wastewater/wwfacilities/jwpcp/.

———. 2017c, January 13. San Jose Creek Water Reclamation Plant. http://www.lacsd.org/wastewater/wwfacilities/joint_outfall_system_wrp/san_jose_creek.asp.

MEC. 2004, April. Background Information Report. Section 2 of Dominguez Watershed Management Master Plan. http://www.ladpw.org/wmd/watershed/dc/DCMP/docs/Section%202%20Background%20Information%20Report.pdf.

Metropolitan Water District of Southern California (MWD). 2016a, October 12. Regional Recycled Water Program. http://www.mwdh2o.com/PDF_About_Your_Water/Regional_Recyled_Water_Supply_Program.pdf.

———. 2016b, November 3. 2015 Production Records for the five MWD water treatment plants.

———. 2017, January 23. About Your Water: Quality & Treatment. http://mwdh2o.com/AboutYourWater/Water-Quality/Pages/default.aspx.

Public Policy Institute of California (PPIC). 2016, December 2. Just the Facts: California's Latest Drought. http://www.ppic.org/main/publication_show.asp?i=1087.

Rancho Dominguez District (RDD). 2016, June. 2015 Urban Water Management Plan. California Water Service Company. https://wuedata.water.ca.gov/public/uwmp_attachments/2878492057/01%5FDOM%5F2015%5FUWMP%5FFINAL%2Epdf.

Southern California Association of Governments (SCAG). 2016, April 7. 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

Southern California Edison (SCE). 2015. Power Content Label. http://www.energy.ca.gov/pcl/labels/2015_labels/Southern_California_Edison.pdf.

State Water Resources Control Board (SWRCB). 2016a, May 18. State Water Board Adopts 'Stress Test' Approach to Water Conservation Regulation. http://www.waterboards.ca.gov/press_room/press_releases/2016/pr051816_waterconsreg.pdf.

———. 2016b, November 1. Statewide Water Savings Top 18 Percent in September; Conservation Still Needed Despite Early Rains. http://www.waterboards.ca.gov/press_room/press_releases/2016/pr110116_sept_conservation.pdf.

US Census. 2016, November 16. Longitudinal Employer-Household Dynamics (LEHD). OnTheMap. http://onthemap.ces.census.gov/.

Water Replenishment District of Southern California (WRD). 2016, May 9. Engineering Survey and Report: 2016. http://www.wrd.org/WRD_ESR_Report_March_3_2016_Final_For_Web.pdf.

West Basin Municipal Water District (WBWMD). 2016, June. 2015 Urban Water Management Plan. https://wuedata.water.ca.gov/public/uwmp_attachments/1460981070/HiRes.UrbanWaterPlanBook.6.30.16.pdf.

6. Significant Unavoidable Adverse Impacts

At the end of Chapter 1, *Executive Summary*, is a table that summarizes the impacts, mitigation measures, and levels of significance before and after mitigation. Mitigation measures would reduce the level of impact, but the following impacts would remain significant, unavoidable, and adverse after mitigation measures are applied:

Air Quality

- **Impact 5.2-1:** Criteria air pollutant emissions associated with population and employment growth in the West Carson TOD Specific Plan area would conflict with the assumptions of the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP).

  Implementation of Regulatory Requirements (RR) AIR-1 through AIR-4, Project Design Features (PDFs) AIR-1 through AIR-8, Mitigation Measures AQ-1 through AQ-5 (for Impacts 5.2-2 and 5.2-3), and West Carson TOD Specific Plan policies would reduce the proposed project's regional construction-related and operational-phase criteria air pollutant emissions to the extent feasible to minimize potential conflict with the SCAQMD AQMP. However, no mitigation measures are available that would reduce impacts associated with inconsistency with the air quality management plans due to the magnitude of growth and associated emissions that would be generated by the buildout of West Carson TOD Specific Plan. Therefore, Impact 5.2-1 would remain **significant and unavoidable**.

- **Impact 5.2-2:** Construction activities associated with buildout of the West Carson TOD Specific Plan would exceed SCAQMD's regional significance thresholds.

  Construction activities associated with the buildout of the project would generate criteria air pollutant emissions that would exceed SCAQMD's regional significance thresholds, contribute to the nonattainment designations of the South Coast Air Basin (SoCAB), and contribute to known health effects from poor air quality—including worsening of bronchitis, asthma, and emphysema; a decrease in lung function; premature death of people with heart or lung disease; nonfatal heart attacks; irregular heartbeat; decreased lung function; and increased respiratory symptoms. RR AIR-3 and RR AIR-4 would minimize criteria air pollutant emissions from construction equipment exhaust and fugitive dust through compliance with the California Air Resources Board (CARB) and SCAQMD rules. Mitigation Measures AQ-1 through AQ-2 would reduce criteria air pollutants generated from project-related construction activities. Buildout of the proposed project would occur over a period of approximately 20 years or longer. Construction time frames and equipment for individual site-specific projects are not available at this time. There is a potential for multiple developments to be constructed at any one time, resulting in significant construction-related emissions. Therefore, despite adherence to Mitigation Measures AQ-1

through AQ-2, project-level and cumulative impacts under Impact 5.2-2 would remain **significant and unavoidable**.

- **Impact 5.2-3:** Long-term operation of the West Carson TOD Specific Plan would generate emissions that would exceed SCAQMD's regional significance thresholds.

  Buildout of the proposed land use plan would generate additional vehicle trips and area sources of criteria air pollutant emissions that exceed SCAQMD's regional significance thresholds and would contribute to the nonattainment designations of the SoCAB and known health effects from poor air quality—including worsening of bronchitis, asthma, and emphysema; a decrease in lung function; premature death of people with heart or lung disease; nonfatal heart attacks; irregular heartbeat; decreased lung function; and increased respiratory symptoms. RRs AIR-1 and AIR-2 would minimize criteria air pollutant emissions from transportation and energy use by requiring mandatory measures of the California Green Building Standards Code (CALGreen) as well as additional voluntary green building standards of CALGreen for nonresidential buildings 25,000 square feet and larger. Additionally, PDFs AIR-1 through AIR-8 identify Specific Plan components that integrate land use and transportation strategies to reduce vehicle miles traveled (VMT) per service population. Incorporation of Mitigation Measures AQ-3 through AQ-5 would reduce operation-related criteria air pollutants generated from stationary and mobile sources. Mitigation Measures AQ-4 and AQ-5 would encourage and accommodate use of alternative-fueled vehicles and nonmotorized transportation. However, despite adherence to Mitigation Measures AQ-3 through AQ-5, project-level and cumulative impacts identified under Impact 5.2-3 would remain **significant and unavoidable** due to the magnitude of land use development associated with the proposed Project.

- **Impact 5.2-4:** Construction of the proposed project would expose sensitive receptors to substantial pollutant concentrations.

  RRs AIR-3 and AIR-4 would minimize criteria air pollutant emissions from construction equipment exhaust and fugitive dust through compliance with CARB and SCAQMD rules. Mitigation Measures AQ-1 and AQ-2 (for Impact 5.2-2) would reduce the proposed project's regional construction emissions and therefore also reduce the project's localized construction-related criteria air pollutant emissions to the extent feasible. However, because existing sensitive receptors may be close to project-related construction activities, construction emissions generated by individual development projects have the potential to exceed SCAQMD's localized significance thresholds. Because of the scale of development activity associated with buildout of the project, for this broad-based program EIR analysis it is not possible to determine whether the scale and phasing of individual projects would result in the exceedance of the localized emissions thresholds and contribute to known health effects. Therefore, project-level and cumulative impacts under Impact 5.2-4 would remain **significant and unavoidable**.

Greenhouse Gas Emissions

- **Impact 5.5-1:** Development of the proposed project would result in a substantial increase of GHG emissions.

  RRs GHG-1 through GHG-4 and PDFs GHG-1 through GHG-8 would reduce emissions associated with transportation, energy, and water use within the Specific Plan. PDFs AIR-1 through AIR-8 identifies Specific Plan components that integrate land use and transportation strategies to reduce VMT per service population. Mitigation Measures AQ-3 through AQ-5 would encourage and accommodate use of alternative-fueled vehicles and nonmotorized transportation and ensure that GHG emissions from the buildout of the proposed project would be minimized. However, additional federal, state, and local measures would be necessary to reduce GHG emissions under the proposed project to meet the long-term GHG reduction goals under Executive Order S-03-05 and Senate Bill 32. The buildout GHG emissions inventory for the proposed project would generate 5.13 metric tons of carbon dioxide equivalent per service population ($MTCO_2e/SP$) and would exceed the efficiency target of 2.4 $MTCO_2e/SP$. At this time, there is no plan past 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology. Since no additional statewide measures are currently available, Impact 5.5-1 would remain **significant and unavoidable.**

Noise

- **Impact 5.9-1:** Construction activities would result in temporary noise increases in the vicinity of the project.

  Mitigation Measure N-1 would require all construction activities to occur within specified hours and days and require all mobile construction equipment to comply with maximum noise levels per Los Angeles County Code Section 12.08.430. Mitigation Measure N-2 would require future applicants of projects within 500 feet of noise-sensitive receptors to conduct project-level construction noise analysis to determine which best management practices would be required in consultation with the County of Los Angeles. These measures would reduce construction noise impacts to the extent feasible, but may not reduce noise levels to below the County Code thresholds. Given the expected noise levels and the unknown length of construction time for projects in accordance with the Specific Plan, Impact 5.9-1 would remain **significant and unavoidable**.

Transportation and Traffic

- **Impact 5.13-1:** The proposed project is anticipated to create significant impacts at several study intersections for the Future Year (2035) With Project scenario.

  Mitigation Measures T-1 through T-6 would require various improvements at study area intersections to mitigate project impacts. These include, but are not limited to, adding turn lanes, widening lanes,

restriping lanes, expanding the Automated Traffic Surveillance and Control network, and improving traffic signal lights.

Improvements to three of the roadway intersections (Vermont Avenue/223rd Street, Vermont Avenue/Carson Street; and Vermont Avenue/Torrance Boulevard) would require the acquisition of right-of-way for the proposed improvements. Right-of-way acquisition at these intersections is believed to be infeasible due to existing development of adjacent land. Therefore, project impacts to these three roadway intersections are determined to be **significant and unavoidable**.

Additionally, as the primary responsibility for approving and/or completing certain improvements located outside of the specific plan area lies with agencies other than the County of Los Angeles (i.e., Cities of Los Angeles, Torrance and Carson), there is the potential that significant impacts may not be fully mitigated if such improvements are not completed for reasons beyond the County's control (e.g., the County cannot undertake or require improvements outside of the County's jurisdiction). Therefore, project impacts to intersections located in the Cities of Los Angeles, Torrance, and Carson are determined to be **significant and unavoidable**.

- **Impact 5.13-2 and 5.13-3:** The proposed project is anticipated to create significant impacts at one freeway mainline location and several freeway ramps for the Future Year (2035) With Project.

  State highway facilities within the study area are not within the jurisdiction of the County of Los Angeles. Rather, those improvements are planned, funded, and constructed by the State of California through a legislative and political process involving the State Legislature; the California Transportation Commission (CTC); the California Business, Transportation, and Housing Agency; the California Department of Transportation (Caltrans); and OCTA. Recent funding opportunities designated by Metro's Measure M provide the vehicle for designated improvements on the freeway facilities within the study area.

  While potential impacts to the freeway mainline segments and ramps have been evaluated, implementation of the transportation improvements to Caltrans facilities listed above is the primary responsibility of Caltrans. While Caltrans has recognized that private development has a role to play in funding fair share improvements to impacts on the I-405 and I-110, neither Caltrans nor the State has adopted a program that can ensure that locally-contributed impact fees will be tied to improvements to freeway mainlines and only Caltrans has jurisdiction over mainline improvements. Because Caltrans has exclusive control over state highway improvements, ensuring that developer fair share contributions to mainline improvements are actually part of a program tied to implementation of mitigation is within the jurisdiction of Caltrans. However, a number of programs are in place in Los Angeles County to improve and upgrade the regional transportation system. These include the State Transportation Improvement Program (STIP), Caltrans Traffic Operations Strategies (TOPS), State Highway Operation and Protection Program (SHOPP), and Metro's Measure M program. State and federal fuel taxes generate most of the funds used to pay for these improvements. Funds expected to be available for transportation improvements are identified through a Fund Estimate prepared by Caltrans and adopted by the California Transportation Commission (CTC). These funds, along with other fund sources, are deposited in the State Highway Account to be programmed and allocated to specific project improvements in both the

STIP and SHOPP by the CTC. However, if these programs are not implemented by the agencies with the responsibility to do so, the project's freeway ramp and mainline impacts would remain **significant and unmitigated**.

6. Significant Unavoidable Adverse Impacts

This page intentionally left blank.

7. Alternatives to the Proposed Project

7.1 INTRODUCTION

7.1.1 Purpose and Scope

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 § 15126.6[a]). As required by CEQA, this chapter identifies and evaluates potential alternatives to the proposed project.

Section 15126.6 of the CEQA Guidelines explains the foundation and legal requirements for the alternatives analysis in an EIR. Key provisions are:

- "[T]he discussion of alternatives shall focus on alternatives to the project or its location which 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, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably 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 a '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." (15126.6[f])

- "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][1]).

- "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])

- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." (15126.6[f][3])

For each development alternative, this analysis:

- Describes the alterative.
- Analyzes the impact of the alternative as compared to the proposed project.
- Identifies the impacts of the project that would be avoided or lessened by the alternative.
- Assesses whether the alternative would meet most of the basic project objectives.
- Evaluates the comparative merits of the alternative and the project.

According to Section 15126.6(d) of the CEQA Guidelines, "[i]f an alternative would cause…significant effects in addition those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."

7.1.2 Project Objectives

As described in Section 3.2, *Statement of Objectives*, the following goals for the West Carson Transit Oriented District Specific Plan were developed based on input from the community members, stakeholders, County Task Force, and County staff. The project goals will aid decision makers in their review of the project and associated environmental impacts.

1. Adopt a specific plan for the project site consistent with the goals and policies of the County of Los Angeles 2035 General Plan.
2. Provide additional housing opportunities near transit consistent with the County's adopted Housing Element.
3. Create a distinct identity in the West Carson community.
4. Improve connections within the community and increase access to transit.
5. Ensure the health and safety of residents, visitors, and employees.
6. Ensure economic vitality of the project area.
7. Encourage a diverse mix of land use and transit oriented development.
8. Improve the quality of life for existing residents with improvements to the public realm.
9. Maximize the use of sustainable development practices.

7.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

As discussed above, a primary consideration in defining project alternatives is their potential to reduce or eliminate significant impacts compared to the proposed project. The CEQA requirement for consideration of alternatives is well settled—an EIR must describe a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the project and would also avoid or substantially lessen any of the significant impacts of the project, and it must evaluate the comparative merits of the alternatives. CEQA requires a reasonable range of alternatives to foster informed decision-making and public participation. As summarized in Chapter 6, *Significant Unavoidable Adverse Impacts,* upon implementation of recommended mitigation measures, the project would result in the following significant and unavoidable impacts:

Air Quality

- **Impact 5.2-1:** Criteria air pollutant emissions associated with population and employment growth in the West Carson TOD Specific Plan area would conflict with the assumptions of the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP).

- **Impact 5.2-2:** Construction activities associated with buildout of the West Carson TOD Specific Plan would exceed SCAQMD's regional significance thresholds.

- **Impact 5.2-3:** Long-term operation of the West Carson TOD Specific Plan would generate emissions that would exceed SCAQMD's regional significance thresholds.

- **Impact 5.2-4:** Construction of the proposed project would expose sensitive receptors to substantial pollutant concentrations.

Greenhouse Gas Emissions

- **Impact 5.5-1:** Development of the proposed project would result in a substantial increase of greenhouse gas (GHG) emissions.

Noise

- **Impact 5.9-1:** Construction activities would result in temporary noise increases in the vicinity of the project.

Transportation and Traffic

- **Impact 5.13-1**: The proposed project is anticipated to create significant impacts at several study intersections for the Future Year (2035) With Project scenario.

- **Impact 5.13-2:** The proposed project is anticipated to create significant impacts at one freeway mainline location for the Future Year (2035) With Project scenario.

7.3 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

The following is a discussion of the land use alternatives considered during the scoping and planning process and the reasons why they were not selected for detailed analysis in this EIR.

7.3.1 Alternative Development Areas

CEQA requires that the discussion of alternatives focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project. The key question and first step in the analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (CEQA Guidelines § 15126[5][B][1]). In general, any development of the size and type proposed by the project would have substantially the same impacts on air quality, land use and planning, noise, population and housing, public services, recreation, transportation and traffic, and utilities and service systems. Without a site specific analysis, impacts on aesthetics, geology and soils, hazards and hazardous materials, and hydrology and water quality cannot be evaluated. These impacts were found to be less than significant. Therefore, another location would not avoid or substantially lessen the effects of the proposed project.

As part of the County of Los Angeles General Plan Update, the County identified several urban and suburban areas with access to major transit and commercial corridors as priority policy areas for infill development. The West Carson TOD Specific Plan area was identified as one of these priority areas and is well suited for higher density housing and a mix of uses surrounding existing major commercial, employment, and civic activity nodes served by high-quality transit. The Specific Plan can leverage the Community of West Carson's assets, connecting uses and activities, and attracting future investment. The Carson Metro Station's (rapid bus transit) proximity to numerous community facilities, including the Harbor-UCLA Medical Center campus, creates many opportunities for improving the built environment and overall community that other locations would not be able to provide.

Overall, the purpose of the West Carson TOD Specific Plan is to expand opportunities for compact, infill development that is compatible with and supports the intensification of the Harbor-UCLA Medical Center, yet is sensitive to the existing single-family neighborhoods. The Specific Plan facilitates increased housing opportunities and employment-generating uses proximate to the Carson Metro Station to take advantage of the significant local and regional transit services already provided in the area. The proposed pedestrian, bicyclist, and transit improvements along Carson Street, Vermont Avenue, and throughout the project area would help create an opportunity for redevelopment of a unique high quality transit area in the Community of West Carson.

Further, the proposed buildout of the proposed project would allow for up to 3,574 dwelling units and 4,602,660 square feet of nonresidential uses within the project site. No other transit corridors within the Community of West Carson would be able to accommodate this proposed growth while achieving the proposed project's guiding principles, which are detailed above in Section 7.1.2, *Guiding Principles*. TOD specific plans for other priority policy areas identified in the County General Plan Update will also be prepared by the County (e.g., West Athens, Willowbrook, Del Aire, Lennox, and Sawtelle). Therefore, no other sites were considered for further alternatives analysis.

7.4 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria listed above, the following three alternatives have been determined to represent a reasonable range of alternatives which have the potential to feasibly attain most of the basic objectives of the project but which may avoid or substantially lessen any of the significant effects of the project. These alternatives are analyzed in detail in the following sections.

- No Project/Existing General Plan Alternative
- Reduced Intensity Alternative
- Alternative Land Use Plan

An EIR must identify an "environmentally superior" alternative and where the No Project/Existing General Plan Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated. Each alternative's environmental impacts are compared to the proposed project and determined to be environmentally superior, neutral, or inferior. Section 7.7 identifies the Environmentally Superior Alternative.

The preferred land use alternative (proposed project) is analyzed in detail in Chapter 5 of this DEIR.

Alternatives Comparison

The following statistical analysis provides a summary of general socioeconomic build-out projections determined by the four land use alternatives, including the proposed project. It is important to note that these are not growth projections. That is, they do not anticipate what is likely to occur by a certain time horizon, but rather provide a build-out scenario that would only occur if all the areas of the project site were to develop to the probable capacities yielded by the land use alternatives. The following statistics were developed as a tool to understand better the difference between the alternatives analyzed in the DEIR. Table 7-1 identifies community-wide information regarding dwelling unit, population and employment projections, and also provides the jobs to housing ratio for each of the alternatives.

7. Alternatives to the Proposed Project

Table 7-1 Buildout Statistical Summary

	Proposed Project	No Project/Existing General Plan Alternative	Reduced Intensity Alternative	Alternative Land Use Plan
Dwelling Units	3,574 (938 SFR and 2,636 MFR)	1,369 (1,188 SFR and 181 MFR)	2,502 (657 SFR and 1,845 MFR)	4,646 (1,219 SFR and 3,427 MFR)
Nonresidential SF	2,661,321	1,703,005 SF[1]	1,862,925[2]	1,862,925[2]
Population[3]	9,840	4,073	6,598	12,252
Employment[4]	4,195	1,858	2,365	2,365
Jobs-to-Housing Ratio	1.17	1.36	0.95	0.51

Notes: SFR = single family residential; MFR =multifamily residential

[1] Population projections are based on an occupancy rate of 99.0% and 3.08 persons per household (PPH) for SFR and an occupancy rate of 94.7% and 2.63 PPH for MFR. Average occupancy rates and PPH are used for alternatives with undistinguished SFR and MFR units (96.9% occupancy and 2.86 PPH).

[2] Total nonresidential SF for the Reduced Intensity Alternative and Alternative Land Use Plan consists of 45,785 SF commercial; 793,645 SF industrial; and 1,023,495 SF mixed use.

[3] Total nonresidential SF for the existing General Plan consists of 255,902 SF commercial; 146,510 SF office; and 1,300,593 SF industrial.

[3] Employment generation rates were based on those detailed in Table 5.10-9 of Section 5.10, *Population and Housing*, of this DEIR. The average of commercial and office employment generation rates were used to calculate jobs for Mixed Use development.

7.4.1 NO PROJECT/EXISTING GENERAL PLAN ALTERNATIVE

The No Project/Existing General Plan Alternative assumes the West Carson TOD Specific Plan would not be adopted and the current General Plan designations of the project area would remain. Pursuant to CEQA Guidelines Section 15126.6(e)(3)(A), where a project is the revision of an existing regulatory plan, the "no project" alternative assumes continuation of the existing plan, policy or operation into the future. Therefore, this alternative assumes that new development and redevelopment would continue to occur in the project area consistent with the provisions of the project site's General Plan designations, including Residential 9, 18, 30, and 50; General Commercial, Mixed Use, Light Industrial, and Public and Semi-Public uses (see Figure 4-2, *Existing General Plan Land Use Designations*).

As shown in Table 7-1, this alternative would allow substantially fewer dwelling units and nonresidential building square footage compared to the proposed project. Overall, development of the project site under the No Project/Existing General Plan Alternative would allow up to 1,369 dwelling units, 1,703,005 square feet of nonresidential development, which would generate approximately 4,073 residents and 1,858 jobs.

7.4.1.1 AESTHETICS =

Under the No Project/Existing General Plan Alternative, future development would occur in accordance with the existing General Plan designations and associated zoning district development standards. This alternative would introduce approximately 2,205 fewer dwelling units and 958,316 fewer square feet of nonresidential development. Therefore, the project site would experience substantially less intense development than under the proposed project.

However, without the proposed Specific Plan, the transit-oriented development improvements, including pedestrian, bicyclist, and transit user amenities, and infrastructure upgrades related to water and sewer lines would not be implemented. The proposed Specific Plan also includes urban design standards, streetscape enhancements, and public realm and park design strategies which would not be implemented under this

alternative. Therefore, aesthetic impacts of this alternative and the proposed project would balance out to be similar and remain less than significant.

7.4.1.2 AIR QUALITY <*

Development under the existing General Plan would decrease development potential by 2,205 units and 958,316 square feet of nonresidential use. Thus, project-related daily vehicle miles traveled (VMT) and associated mobile-source emissions would be reduced. Furthermore, stationary-source emissions would be reduced because there would be less residential and nonresidential development. A reduction in development would also reduce short-term emissions related to project construction activities. Although this alternative would reduce both long- and short-term pollutant emissions, it would not eliminate significant short- and long-term criteria air pollutant emissions that would exceed South Coast Air Quality Management District's (SCAQMD) regional significance thresholds and localized significance thresholds. However, it would be consistent with SCAQMD's air quality management plan (AQMP) since population and employment assumptions used to develop the regional emissions inventory in the latest AQMP are based on the existing General Plan. In comparison to the proposed project, this alternative would reduce mobile- and stationary-source emissions and criteria air pollutants from construction and operation activities, and eliminate one significant and unavoidable impact related to consistency with the AQMP.

7.4.1.3 CULTURAL RESOURCES =

Compared to the proposed project, buildout of the existing General Plan would substantially reduce residential and nonresidential development and less construction and grading activities would occur. However, the development footprint of the proposed project and this alternative would be the same. Therefore, the potential to impact historical resources and uncover previously undiscovered archaeological and paleontological resources would be similar. Overall, potential impacts to cultural resources would be less than significant with mitigation incorporated under both scenarios.

7.4.1.4 GEOLOGY AND SOILS <

The development footprints of the proposed project and the No Project/Existing General Plan Alternative are the same. Thus, similar geologic and seismic hazards, including the potential for strong ground shaking, liquefaction, subsidence, lateral spreading, soil expansion, and collapse, would apply to both scenarios. However, this alternative would introduce 2,205 fewer residential units and 958,316 fewer square feet of nonresidential development. Thus, this alternative would expose fewer residents and workers to geologic and seismic hazards associated with the project site. Impacts would be reduced and be less than significant.

7.4.1.5 GREENHOUSE GAS EMISSIONS <

The transit oriented development features of the West Carson TOD Specific Plan, including pedestrian, bicycle and transit amenities and public realm and park improvements would not be implemented under this alternative. While, the No Project/Existing General Plan Alternative would substantially decrease residential and nonresidential development, there are currently no plans past 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. As identified by the California Council on Science

and Technology, the state cannot meet the 2050 goal without major advancements in technology. Since no additional statewide measures are currently available, it is unlikely that this alternative would eliminate the project's significant and unavoidable GHG impact. Thus, impacts would be reduced but remain significant and unavoidable.

7.4.1.6 HAZARDS AND HAZARDOUS MATERIALS <

The development footprint of the proposed project and this alternative would remain the same. Therefore, development under either scenario could involve the transport, use and/or disposal of hazardous materials and require demolition of existing buildings that may contain asbestos or lead-based paints. However, this alternative would develop 2,205 fewer units and 958,316 fewer square feet of nonresidential development, which would decrease the potential for future projects to result in the release of hazardous materials through routine use or accident. Additionally, fewer existing buildings may be demolished under this scenario, resulting in less potential hazard from the release of asbestos and lead-based paints. Overall, hazards and hazardous materials impacts would be reduced under this alternative and remain less than significant impacts with mitigation.

7.4.1.7 HYDROLOGY AND WATER QUALITY =

This alternative would allow development of 2,205 fewer units and 958,316 fewer square feet of nonresidential development compared to the proposed project. However, short-term construction and long-term operational water quality impacts would be similar to the proposed project since development projects under this alternative would be required to comply with the Construction General Permit and the County's MS4 Permit (i.e., implementation of a Storm Water Pollution Prevention Plan [SWPPP] and Water Quality Management Plan [WQMP]). The project site is urbanized and almost completely built out; therefore, an increase in development under either scenario would not substantially change the amount of impervious surfaces throughout the project site nor would it interfere with groundwater recharge. Development under both scenarios would also be required to comply with the County's Low Impact Development Ordinance. Overall, hydrology and water quality impacts would be similar and less than significant.

7.4.1.8 LAND USE AND PLANNING =

The West Carson TOD Specific Plan would not be adopted under this alternative. Therefore, a General Plan amendment and zone change would not be required. The existing designations and zoning districts would remain and development would be consistent with the County's General Plan land use and zoning development standards.

However, this alternative would not implement a number of beneficial elements of the West Carson TOD Specific Plan, which include complete streets and multimodal mobility enhancements for pedestrians, bicyclists, motorists and transit users. This alternative would not implement streetscape enhancements, park and public realm strategies, and urban design standards that would help create a high quality transit-oriented community in West Carson. Overall, land use and planning impacts of this alternative and the proposed project would balance and be similarly less than significant.

7.4.1.9 NOISE <

The No Project/Existing General Plan Alternative would allow for substantially less residential and nonresidential development compared to the proposed Specific Plan. Therefore, noise associated with construction and operational activities (i.e., traffic and stationary noise sources), would also reduce. However, the proposed project's significant and unavoidable construction noise impact would remain because it is impossible to quantify construction noise impacts at specific off-site or onsite sensitive receptors without specific project-level information. Because these construction activities may occur near noise-sensitive receptors and may occur for prolonged periods of time (depending on the project type), construction noise impacts associated with implementation of the proposed project and this alternative are considered significant and unavoidable. Overall, construction and operational noise impacts would be reduced but construction noise impacts would remain significant and unavoidable.

7.4.1.10 POPULATION AND HOUSING <

Buildout of the project site based on the existing General Plan would introduce 1,369 units and 4,073 residents compared to the 3,574 units and 9,840 residents under the proposed project. This alternative would also reduce nonresidential development by 958,316 square feet and reduce employment by approximately 2,337 jobs compared to the proposed project. Thus, jobs-housing balance in the Specific Plan area would increase from 1.17 to 1.36. Although ideal jobs-housing ratios vary from jurisdiction to jurisdiction, a recommended target for an appropriate jobs-housing ratio is 1.5, with a recommended range of 1.3 to 1.7. Thus, this alternative would improve the jobs-housing balance.

Overall, population, housing and employment impacts would be reduced and remain less than significant.

7.4.1.11 PUBLIC SERVICES <

Buildout of the project area based on the existing General Plan would allow development of 2,205 fewer units and 958,316 fewer square feet of nonresidential uses. This buildout correlates to 5,767 fewer residents and 2,337 fewer jobs. Therefore, demand for public services, including fire, police, school and library services, would proportionally decrease compared to that of the proposed project. Overall impacts would be reduced and remain less than significant.

7.4.1.12 RECREATION <

Compared to the proposed project, the introduction of 5,767 fewer residents under this alternative would substantially decrease demand for park services provided by the County's Department of Parks and Recreation. Buildout of this alternative would introduce 1,188 single-family residences and 181 multifamily residences. Using the County's parkland obligation for Park Planning Area 21 (West Carson), buildout of this alternative would require approximately 11.7 acres of parkland—about 3.3 acres fewer than buildout of the Specific Plan. Therefore, demand for park services would be substantially reduced and impacts would remain less than significant.

7.4.1.13 TRANSPORTATION AND TRAFFIC >

Buildout of the Existing General Plan without the proposed Specific Plan would result in 2,205 fewer residential units and 958,316 fewer square feet of nonresidential development, thus reducing average daily trips and impacts to roadway and intersection levels of service. While average daily trips would reduce, significant and unavoidable impacts to study intersections would remain and the proposed mitigation measures under the proposed project would not be implemented. Development under the existing General Plan also would not take into account the TOD-nature of the proposed project; therefore, generated trips under the existing General Plan would not be reduced based on internal trip capture for mixed-use zones and traffic demand management reductions.

Additionally, this alternative would not implement a number of beneficial elements that would occur under the proposed project, including enhancements to the Specific Plan area's mobility and streetscape and complete streets network. The Specific Plan include a number of goals and policies and development standards that would enhance the project area's transportation system for vehicles, pedestrians, bicyclists, and transit users that the existing General Plan does not address. Thus, overall transportation and traffic impacts would be greater than the proposed project and still result in significant and unavoidable impacts.

7.4.1.14 TRIBAL CULTURAL RESOURCES =

The development footprint of the No Project/Existing General Plan Alternative is the same as the proposed project. Therefore, the potential to impact previously undiscovered tribal cultural resources is similar and, as with the proposed project, would be less than significant upon implementation of mitigation measures.

7.4.1.15 UTILITIES AND SERVICE SYSTEMS <

Based on a water demand rate of 173 gallons per capita per day, buildout of the No Project/Existing General Plan Alternative would generate a demand of 704,629 gallons per day (gpd) or 789 acre-feet per year. In comparison, buildout of the proposed project would generate an annual water demand of 1,903 acre-feet. Thus, impacts on water services, including water supply, delivery systems and treatment, would substantially reduce. Additionally, buildout of this alternative would generate 796,370 gpd of wastewater compared to 2.12 million gallons per day (mgd) under the proposed project (IBI 2017), and would generate 32,423 pounds per day (ppd) of solid waste compared to 43,463 ppd under the proposed project.

Overall, this alternative would reduce water demand, wastewater and solid waste generation compared to the proposed project. Impacts would remain less than significant.

7.4.1.16 CONCLUSION

Ability to Reduce Environmental Impact

As detailed above, the No Project/Existing General Plan Alternative would reduce impacts to air quality, geology and soils, GHG emissions, hazards and hazardous materials, noise, population and housing, public services, recreation, and utilities and service systems. Impacts to transportation and traffic would be greater,

and impacts to aesthetics, cultural resources, hydrology and water quality, land use and planning, and tribal cultural resources would be similar.

This alternative would be able to eliminate one significant and unavoidable air quality impact related to consistency with the SCAQMD's AQMP, but significant and unavoidable impacts to construction and operational air quality, GHG emissions, construction noise, and traffic would remain.

Ability to Achieve Project Objectives

The No Project/Existing General Plan Alternative would not be able to achieve as many of the project objectives as the West Carson TOD Specific Plan. Development in accordance with the County's General Plan would not include the urban design standards, development standards, and public realm strategies of the proposed Specific Plan that would help create a distinct identity to the West Carson community, encourage a diverse mix of land uses and transit oriented development, and improvements to the public realm (Objective No's 1, 5 and 6). This alternative also would not include the proposed project's multimodal transportation amenities and relocation of the Carson Metro Station that can improve connections within the community and increase access to transit (Objective No. 2). Development in accordance with the existing General Plan also would not include implementation of sustainable development guidelines detailed in the proposed Specific Plan (Objective No. 7).

Buildout of this alternative would be able to provide health and safety to residents, visitors and employees and ensure economic vitality of the project area (Objective No's 3 and 4); however, it would achieve these objectives to a lesser degree than the proposed project. The West Carson TOD Specific Plan includes complete streets strategies, including implementation of pedestrian, bicyclist, transit users, and motorist amenities that would help increase safety and connectivity within the community. Public realm strategies (i.e., pedestrian crossings, streetscape enhancements, multiuse trails, and pocket parks) would also encourage the health and safety of residents, visitors and employees. The proposed project would also allow a mix of transit oriented land use types that would bolster the economic vitality of West Carson more so than the existing General Plan.

7.4.2 REDUCED INTENSITY ALTERNATIVE

The Reduced Density Alternative was evaluated for its potential to reduce the proposed project's significant and unavoidable impacts related to construction and operational air quality, GHG emissions, and construction noise. This alternative would include adopting the West Carson TOD Specific Plan and implementing its goals and policies, but would reduce proposed residential and nonresidential development by 30 percent.

As shown in Table 7-1, buildout of the Reduced Intensity Alternative would allow up to 2,502 dwelling units (657 single-family residences and 1,845 multifamily residences) and 1,862,925 square feet of nonresidential development. This alternative would introduce approximately 6,598 residents and generate 2,365 jobs, creating a jobs-housing ratio of 0.95.

7.4.2.1 AESTHETICS <

This alternative would reduce residential and nonresidential development by 30 percent and broadly reduce overall intensity in the Specific Plan area. The Specific Plan would still be adopted and implemented; therefore, the beneficial aesthetic impacts of the proposed project, including pedestrian, bicyclist, and transit user amenities, infrastructure upgrades, urban design standards, streetscape enhancements, and public realm and park design strategies would still be implemented under this alternative. Overall, aesthetic impacts would be reduced and remain less than significant.

7.4.2.2 AIR QUALITY <

A 30 percent reduction in proposed development would significantly reduce project-related VMT and associated mobile-source emissions. While both short-term construction and long-term operational emissions would be reduced under this alternative, construction and operational emissions would still exceed SCAQMD's regional significance thresholds. Similarly, this alternative would not be consistent with the SCAQMD's AQMP since population and employment assumptions used to develop the regional emissions inventory in the latest AQMP are based on the existing General Plan, which has a further reduced development potential compared to this alternative.

Thus, in comparison to the proposed project, this alternative would reduce construction and operational air quality impacts but would not eliminate the project's significant and unavoidable impacts related to construction and operational emissions and consistency with the SCAQMD's AQMP.

7.4.2.3 CULTURAL RESOURCES =

Although development potential would reduce by 30 percent, the development footprint of this alternative and the proposed project would be the same. Thus, potential to adversely impact previously undiscovered historic, archaeological and paleontological resources would be similar. Likewise, impacts would be reduced to less than significant levels with mitigation.

7.4.2.4 GEOLOGY AND SOILS <

Similar geologic and seismic hazards, such as the potential for strong ground shaking, liquefaction, subsidence, lateral spreading, soil expansion, and collapse, would apply to both this alternative and the proposed project because the development footprint would remain the same. However, this alternative would introduce 1,072 fewer residential units and 798,396 fewer square feet of nonresidential development. Thus, this alternative would expose fewer residents and workers to geologic and seismic hazards associated with the Specific Plan area. Impacts would be reduced and remain less than significant.

7.4.2.5 GREENHOUSE GAS EMISSIONS <

A 30 percent reduction in residential and nonresidential development would proportionally decrease associated GHG emissions. However, similar to the proposed project, there are currently no plans past 2030 that achieves the long-term GHG reduction goal established under Executive Order S-03-05. Therefore, the project's significant and unavoidable GHG impacts would remain.

7.4.2.6 HAZARDS AND HAZARDOUS MATERIALS <

Although the development area would remain the same under the proposed project and this alternative, development potential would be reduced by 30 percent. Therefore, 1,072 fewer residential units and 798,396 fewer square feet of nonresidential development would be developed. Since less development would occur, the potential of release of hazardous materials due to routine transport, use and/or disposal of hazardous materials would also be reduced. Fewer existing buildings may be demolished as well, reducing the potential for release of hazards related to asbestos and lead-based paint. Thus, this alternative would have reduced hazards and hazardous materials impacts when compared to the proposed project, but would be similarly less than significant with mitigation incorporated.

7.4.2.7 HYDROLOGY AND WATER QUALITY =

Similar to the proposed project, future individual projects in accordance with the Specific Plan would be required to comply with the Construction General Permit and the County's MS4 Permit that require the preparation and implementation of a SWPPP and WQMP. Additionally, since the project area is nearly completely built out, the reduced intensity of this alternative would not substantially reduce the amount of impervious surfaces compared to the proposed project, nor would it interfere less with groundwater recharge. Development in accordance with the proposed project and Reduced Intensity Alternative would have similar impacts to hydrology and water quality and impacts would be less than significant.

7.4.2.8 LAND USE AND PLANNING =

Compared to the proposed project, this alternative would also require a General Plan Amendment and zone change to adopt the West Carson TOD Specific Plan. This alternative would also similarly implement the goals and policies of the Specific Plan. Therefore, land use and planning impacts of this alternative would be similar to the proposed project and be less than significant.

7.4.2.9 NOISE <

This alternative would reduce development by 1,072 residential units and 798,396 square feet of nonresidential development. Thus, construction and operational noise impacts would also proportionally reduce. However, the project's significant and unavoidable construction noise impact would remain since it is difficult to quantify construction noise impacts at site-specific offsite or onsite sensitive receptors without project-level information. The potential for multiple projects to be under construction at the same time in the same area for prolonged periods of time (depending on the project type) also contributes to the significant and unavoidable construction noise impacts. Thus, noise impacts would be reduced under this alternative but construction noise impacts would remain significant and unavoidable.

7.4.2.10 POPULATION AND HOUSING =

Buildout of the Reduced Intensity Alternative would allow up to 2,502 residential units and 1,862,925 square feet of nonresidential development. As shown in Table 7-1, this would introduce approximately 6,598 residents and generate about 6,598 jobs, creating a jobs-housing balance of 0.95. In comparison, the proposed project would introduce approximately 9,840 residents and generate about 4,195 jobs, resulting in a

jobs-housing balance of 1.17. Thus, this alternative would reduce impacts to population, but would reduce availability of both jobs and housing in the project area and result in a greater impact on jobs-housing balance. Overall, balancing the impacts to population, housing and jobs, impacts of this alternative would be similar to the proposed project and remain less than significant.

7.4.2.11 PUBLIC SERVICES <

This alternative would reduce residential and nonresidential development by 30 percent compared to the proposed project. Thus, the demand for fire and emergency, police, library and school services would also proportionally decrease. Overall, impacts to public services would be reduced and, similar to the proposed project, remain less than significant.

7.4.2.12 RECREATION <

Recreational impacts are determined based on the potential for future permanent residents to exacerbate existing or planned parks and recreational facilities. Since this alternative would introduce 3,242 fewer residents than the proposed project, impacts on the County's existing parkland and recreational facilities in the area would also reduce. Development in accordance with this alternative would also require dedication of parkland or payment of in-lieu fees to mitigate project impacts on recreation. Thus, impacts would be reduced and remain less than significant.

7.4.2.13 TRANSPORTATION AND TRAFFIC <

This alternative would reduce residential and nonresidential development by 30 percent; thereby, reducing average daily trips and impacts to roadway and intersection levels of service. The West Carson TOD Specific Plan would also be adopted under this alternative; therefore, the beneficial enhancements to the project area's transportation network would also be implemented. Similar to the proposed project, complete streets principles, pedestrian and bicyclist amenities, streetscape improvements, etc. would revitalize and enhance the project area. Thus, transportation and traffic impacts would be reduced under this alternative, but impacts to the three roadway intersections (Vermont Avenue/223rd Street, Vermont Avenue/Carson Street; and Vermont Avenue/Torrance Boulevard) would still be significant and unavoidable.

7.4.2.14 TRIBAL CULTURAL RESOURCES =

While the development potential of this alternative would be reduced by 30 percent, the development footprint would be the same as the proposed project. Thus, potential to adversely impact previously undiscovered historic, archaeological and paleontological resources would be similar, and impacts would be reduced to less than significant levels with mitigation incorporated.

7.4.2.15 UTILITIES AND SERVICE SYSTEMS <

Reducing development potential by 30 percent under this alternative would proportionally reduce impacts to utilities and service systems. Based on a water demand rate of 173 gpd per capita, buildout of this alternative would generate a demand of 1.1 mgd or 1,279 acre-feet per year. In comparison, buildout of the proposed

project would generate an annual water demand of 1,903 acre-feet. Thus, impacts on water services, including water supply, delivery systems and treatment, would be reduced.

Additionally, this alternative would generate approximately 1.1 mgd of wastewater compared to 2.12 mgd under the proposed project (IBI 2017) and would generate approximately 33,259 ppd of solid waste compared to 43,463 ppd under the proposed project.

Overall, impacts to utilities and service systems would be reduced and, similar to the proposed project, would remain less than significant under this alternative.

7.4.2.16 CONCLUSION

Ability to Reduce Environmental Impact

The Reduced Intensity Alternative would reduce impacts to aesthetics, air quality, geology and soils, GHG emissions, hazards and hazardous materials, noise, public services, recreation, transportation and traffic, and utilities and service systems. Impacts to cultural resources, hydrology and water quality, land use and planning, population and housing, and tribal cultural resources would be similar.

While this alternative would reduce impacts to many topical sections, significant and unavoidable impacts to air quality (construction, operations, and AQMP consistency), GHG emissions, and construction noise would remain.

Ability to Achieve Project Objectives

This alternative would reduce development intensity but would still adopt and implement the West Carson TOD Specific Plan. Therefore, it would be able to create a distinct identity in the West Carson community (Objective No. 1); ensure the health and safety of residents, visitors and employees (Objective No. 3); ensure economic vitality of the project area (Objective No. 4); and maximize the use of sustainable development practices (Objective No. 7). The mobility and public realm improvements in the Specific Plan would also allow improvements to connections within the community and increase access to transit (Objective No. 2) and improve the quality of life for existing residents with improvements to the public realm (Objective No. 6).

However, a transit oriented community is recognized as an area well suited for higher density housing and mixed uses surrounding existing major commercial, employment, and civic activity nodes. Therefore, this alternative's 30-percent reduction in residential and nonresidential development may not achieve the project's objective to encourage a diverse mix of land uses and transit oriented development to the same degree as the proposed project (Objective No. 5).

7.4.3 ALTERNATIVE LAND USE PLAN

The Alternative Land Use Plan was evaluated for its potential to assist the County in providing more housing at higher densities in the subregion with the potential for affordable housing development. This would help

the County meet its share of the regional housing need through Program 6 (Transit Oriented Districts Program) of the County of Los Angeles Housing Element.

This alternative would involve adopting the West Carson TOD Specific Plan and implementing its goals and policies, but would increase residential development by 30 percent and decrease nonresidential development by 30 percent. As detailed in Table 7-1, buildout of the Alternative Land Use Plan would allow up to 4,646 dwelling units (1,219 single-family residences and 3,427 multifamily residences) and 1,862,925 square feet of nonresidential development. This alternative would introduce approximately 12,252 residents and generate 2,365 jobs, creating a jobs-housing ratio of 0.50.

7.4.3.1 AESTHETICS =

This alternative would allow 1,072 more residential units but 798,396 fewer square feet of nonresidential development. The proposed Specific Plan would be adopted under this alternative; therefore, the beneficial aesthetic elements of the Specific Plan would still be implemented. These include pedestrian, bicyclist, and transit user amenities, infrastructure upgrades, urban design standards, streetscape enhancements, and public realm and park design improvements. While the land use mix for this alternative would result in more residences and less nonresidential development, aesthetic impacts would be similar and remain less than significant.

7.4.3.2 AIR QUALITY >

Development in accordance with this alternative would increase residential development by 1,072 units and decrease nonresidential development by 798,396 square feet. The proposed project's land use mix is crafted to take advantage of TOD benefits, one of which is a reduction in VMT based on the assumption that residents living near a large mix of commercial, employment and civic uses would not need to travel far for entertainment, services and employment. Therefore, reducing nonresidential development but increasing residential development would not take advantage of the VMT-reducing benefits of a TOD and operational air quality impacts would increase. However, construction air quality emissions would likely be similar.

This alternative would also not be consistent with the SCAQMD's AQMP since population and employment assumptions used to develop the regional emissions inventory in the latest AQMP are based on the existing General Plan, which has a reduced development potential compared to this alternative. Overall, impacts to air quality impacts would be greater and significant and unavoidable.

7.4.3.3 CULTURAL RESOURCES =

Although this alternative would alter the proposed land use mix for the project area, the development footprint would be the same as the proposed project. Thus, potential to adversely impact previously undiscovered historic, archaeological and paleontological resources would be similar. Likewise, impacts would be reduced to less than significant levels with mitigation.

7.4.3.4 GEOLOGY AND SOILS =

The development footprint of this alternative and the proposed project are the same. Thus, similar geologic hazards, such as strong ground shaking, liquefaction, subsidence, lateral spreading, soil expansion, and collapse, would occur. This alternative would introduce 2,412 additional residents but 1,830 fewer workers in the project area. Thus, this alternative would expose a similar amount of residents and workers to geologic and seismic hazards when compared to the proposed project. Impacts would be similar and remain less than significant.

7.4.3.5 GREENHOUSE GAS EMISSIONS >

The proposed project's land use mix is crafted to create a diverse mix of land uses and transit oriented development, which is assumed to reduce average daily trips and VMT if residents in the project area do not need to drive far to other places for services, entertainment, retail, and employment areas. Under this alternative, the increase in residential development and decrease in nonresidential development would not take advantage of GHG-reducing impacts of a TOD as well as the proposed project. The 2,412 additional residents may travel out of the Specific Plan area for services, jobs and entertainment since 798,396 fewer square feet of nonresidential development would be developed under this alternative. Thus, impacts to GHG emissions would be greater and would remain significant and unavoidable.

7.4.3.6 HAZARDS AND HAZARDOUS MATERIALS =

Increasing residential development and decreasing nonresidential development each by 30 percent would not substantially change the proposed project's impacts related to hazards and hazardous materials. Future projects have similar potential to create hazards to the public or environment through the use of hazardous materials. This alternative would also have similar potential to expose people to asbestos or lead based paint during demolition of existing buildings in the project area. Thus, impacts would be similar and less than significant with mitigation incorporated.

7.4.3.7 HYDROLOGY AND WATER QUALITY =

This alternative would have similar hydrology and water quality impacts as the proposed project. Future projects meeting the National Pollutant Discharge Elimination System Program requirements would be required to obtain a Construction General Permit and prepare and implement a SWPPP and WQMP and associated best management practices. Additionally, since the Specific Plan area is predominantly built out, development of either this alternative or the proposed project would not significantly increase impervious surfaces or interfere with groundwater recharge in the project area. Thus, impacts would be similar and less than significant.

7.4.3.8 LAND USE AND PLANNING =

This alternative would still include the adoption of the West Carson TOD Specific Plan, and thus would require a General Plan Amendment and zone change. Goals and policies of the Specific Plan would also be implemented, and overall impacts would be similarly less than significant.

7.4.3.9 NOISE =

Development of the Alternative Land Use Plan would introduce 1,072 more residences and 798,396 fewer square feet of nonresidential development. Construction noise associated with this alternative would be comparable to the proposed project; and operational noise from traffic and stationary noise sources may slightly decrease since residences typically have less operational noises than nonresidential development, but impacts would be nominally different.

The proposed project's significant and unavoidable construction noise impact would also remain under this alternative since it is impossible to quantify construction noise impacts on sensitive receptors without project-level noise analyses for future projects. Overall, impacts would be similar to the proposed project.

7.4.3.10 POPULATION AND HOUSING >

As detailed in Table 7-1, the Alternative Land Use Plan would introduce 12,252 residents, 4,646 homes, and 2,365 jobs into the Specific Plan area, resulting in a jobs-housing balance of 0.51. In comparison, the proposed project would introduce 9,840 residents, 3,574 homes, and 4,195 jobs.

Thus, this alternative would have greater population and housing impacts and would worsen the jobs-housing balance of the project area by making it more housing-rich. Impacts would be greater than the proposed project.

7.4.3.11 PUBLIC SERVICES =

Although residential development would increase by 30 percent, nonresidential development would decrease by 30 percent as well. Therefore, demand for public services would balance out to be comparable to that of the proposed project. Similarly, impacts would be less than significant with mitigation incorporated.

7.4.3.12 RECREATION >

This alternative would increase the number of permanent residents in the project area by 2,412 residents, thereby increasing demand for existing parks and recreational facilities in the project area. Buildout of this alternative would also require dedication of 33.4 acres of parkland or payment of in-lieu fees. In comparison, the proposed project would require dedication of 15.0 acres of parkland. Further, since the Specific Plan area is nearly built out and the existing parkland-to-population ratio in West Carson (0.02 acres per 1,000 residents) is far below the County standard of three acres per 1,000 residents, this alternative would have greater impacts on recreation than the proposed project.

7.4.3.13 TRANSPORTATION AND TRAFFIC =

This alternative would increase residential development yet decrease nonresidential development each by 30 percent. Peak hour trip generation rates for residential uses are lower than commercial uses but higher than industrial uses. This alternative may reduce overall trip generation but would likely not take advantage of the internal capture rates utilized by the proposed project since development of this alternative would not be as diverse and mixed in land use types as the proposed TOD plan. The increase in 1,072 homes in an area with

798,396 fewer square feet of nonresidential development may also increase VMT since residents would have to travel farther for goods, services and employment.

However, the Specific Plan would still be adopted and the proposed complete streets principles, pedestrian and bicyclist amenities, and streetscape improvements would revitalize and enhance the project area. Thus, overall transportation and traffic impacts would balance out to be similar to the proposed project. Significant and unavoidable impacts roadway intersections would still be significant and unavoidable.

7.4.3.14 TRIBAL CULTURAL RESOURCES =

The development footprint of the Alternative Land Use Plan and the proposed project are the same. Thus, potential to adversely impact previously undiscovered tribal cultural resources in the Specific Plan area are similar and would remain less than significant with mitigation incorporated.

7.4.3.15 UTILITIES AND SERVICE SYSTEMS >

This alternative would increase residential development and decrease nonresidential development each by 30 percent, respectively. Based on a water demand rate of 173 gpd per capita, buildout of this alternative would generate a demand of 2.1 mgd or 2,374 acre-feet per year. In comparison, buildout of the proposed project would generate an annual water demand of 1,903 acre-feet. Thus, impacts on water services, including water supply, delivery systems and treatment, would be greater with the increase in residents. Additionally, this alternative would generate approximately 47,279 ppd of solid waste compared to 43,463 ppd under the proposed project, resulting in a greater impact to solid waste services than the proposed project.

This alternative would reduce wastewater generation from 2.1 mgd to 1.7 mgd (IBI 2017), resulting in a reduced impact on wastewater services. However, overall impacts to utilities and service systems would be greater than the proposed project.

7.4.3.16 CONCLUSION

Ability to Reduce Environmental Impact

The Alternative Land Use Plan would have similar impacts to aesthetics, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, transportation and traffic, and tribal cultural resources. Impacts to air quality, GHG emissions, population and housing, recreation, and utilities and service systems would be greater than the proposed project.

Significant and unavoidable impacts to air quality (construction, operation, and AQMP consistency), GHG emissions, and construction noise would remain.

Ability to Achieve Project Objectives

The West Carson TOD Specific Plan would still be adopted and implemented under the Alternative Land Use Plan. Therefore, this alternative would be able to create a distinct identity in the West Carson community (Objective No. 1); improve connections within the community and increase access to transit through implementation of the Specific Plan's mobility strategies (Objective No. 2); ensure the health and safety of

residents, visitors and employees (Objective No. 3); improve the quality of life for existing residents with improvements to the public realm as detailed in the Mobility and Public Realm section of the Specific Plan (Objective No. 6); and maximize the use of sustainable development practices (Objective No. 7).

However, since nonresidential development would decrease by 30 percent from 2,661,321 to 1,862,925 square feet, ensuring the economic vitality of the project area may not be achieved as well as under the proposed project (Objective No. 4), and the alternative land use mix with more residential development may not encourage as diverse a mix of land uses and transit oriented development (Objective No. 5).

7.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Table 7-2 summarizes the environmental impacts of each alternative compared to the proposed project, and Table 7-3 summarizes each alternative's ability to achieve the project objectives.

Table 7-2 Summary of Proposed Project and Alternatives Impacts

Topic	Proposed Project	No Project/Existing General Plan Alternative	Reduced Intensity Alternative	Alternative Land Use Plan
Aesthetics	LTS	=	<	=
Air Quality				
Construction	S/U	<	<	=
Operation	S/U	<*	<	>
Cultural Resources	LTS/M	=	=	=
Geology and Soils	LTS	<	<	=
Greenhouse Gas Emissions	S/U	<	<	>
Hazards and Hazardous Materials	LTS/M	<	<	=
Hydrology and Water Quality	LTS	=	=	=
Land Use and Planning	LTS	=	=	=
Noise				
Construction	S/U	<	<	=
Operation	LTS/M	<	<	
Population and Housing	LTS	<	=	>
Public Services	LTS/M	<	<	=
Recreation	LTS	<	<	>
Transportation and Traffic	S/U	>	<	=
Tribal Cultural Resources	LTS/M	=	=	=
Utilities and Service Systems	LTS/M	<	<	>

Notes: LTS: Less than Significant; LTS/M: Less than Significant with Mitigation Incorporated; S/U: Significant and Unavoidable
(<) The alternative would result in less of an impact than the proposed project.
(>) The alternative would result in greater impacts than the proposed project.
(=) The alternative would result in the same/similar impacts as the proposed project.
* The alternative would reduce a significant and unavoidable impact.

Table 7-3 Ability of Each Alternative to Meet the Project Objectives

Project Objective	Proposed Project	No Project/ Existing General Plan Alternative	Reduced Intensity Alternative	Alternative Land Use Plan
1. Create a distinct identity in the West Carson community.	Yes	No	Yes	Yes
2. Improve connections within the community and increase access to transit.	Yes	No	Yes	Yes
3. Ensure the health and safety of residents, visitors, and employees.	Yes	Yes, to a lesser degree	Yes	Yes
4. Ensure economic vitality of the project area.	Yes	Yes, to a lesser degree	Yes	Yes, to a lesser degree
5. Encourage a diverse mix of land uses and transit oriented development.	Yes	No	Yes, to a lesser degree	Yes, to a lesser degree
6. Improve the quality of life for existing residents with improvements to the public realm.	Yes	No	Yes	Yes
7. Maximize the use of sustainable development practices.	Yes	No	Yes	Yes

CEQA requires a lead agency to identify the "environmentally superior alternative" and, in cases where the "No Project" Alternative is environmentally superior to the proposed project, the environmentally superior development alternative must be identified. Since the No Project/Existing General Plan Alternative is the environmentally superior to the proposed project, an alternative has been identified as "environmentally superior" to the proposed project:

- Reduced Intensity Alternative

As shown in Table 7-2, the Reduced Intensity Alternative would lessen impacts associated with aesthetics, air quality, geology and soils, GHG emissions, hazards and hazardous materials, noise, public services, recreation, transportation and traffic, and utilities and service systems.

7.6 REFERENCES

IBI Group (IBI). 2017, March 10. West Carson Environmental Assessment. Prepared for Los Angeles County Department of Public Works.

7. Alternatives to the Proposed Project

This page intentionally left blank.

8. Impacts Found Not to Be Significant

California Public Resources Code Section 21003 (f) states: "…it is the policy of the state that…[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in the State California Environmental Quality Act (CEQA) Guidelines (Guidelines) Section 15126.2(a), which states that "[a]n EIR [Environmental Impact Report] shall identify and focus on the significant environmental impacts of the proposed project" and Section 15143, which states that "[t]he EIR shall focus on the significant effects on the environment." The Guidelines allow use of an Initial Study to document project effects that are less than significant (Guidelines Section 15063[a]). Guidelines Section 15128 requires that an EIR contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant, and were therefore not discussed in detail in the Draft EIR.

8.1 ASSESSMENT IN THE INITIAL STUDY

The Initial Study prepared for the proposed project in January 2017 determined that impacts listed below would be less than significant. Consequently, they have not been further analyzed in this Draft EIR (DEIR). Please refer to Appendix A for explanation of the basis of these conclusions. Impact categories and questions below are summarized directly from the CEQA Environmental Checklist as contained in the Initial Study.

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
I. AESTHETICS. Would the project:	
a) Have a substantial adverse effect on a scenic vista?	Less Than Significant Impact
b) Be visible from or obstruct views from a regional riding or hiking trail?	No Impact
c) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact
II. AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact
b) Conflict with existing zoning for agricultural use, with a designated Agricultural Opportunity Area, or with a Williamson Act contract?	Less Than Significant Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	No Impact
IV. BIOLOGICAL RESOURCES. Would the project:	
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?	No Impact
b) Have a substantial adverse effect on any sensitive natural communities (e.g., riparian habitat, coastal sage scrub, oak woodlands, non-jurisdictional wetlands) identified in local or regional plans, policies, regulations or by CDFW or USFWS?	No Impact
c) Have a substantial adverse effect on federally or state protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, and drainages) or waters of the United States, as defined by § 404 of the federal Clean Water Act or California Fish & Game code § 1600, et seq. through direct removal, filling, hydrological interruption, or other means?	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less Than Significant Impact
e) Convert oak woodlands (as defined by the state, oak woodlands are oak stands with greater than 10% canopy cover with oaks at least 5 inch in diameter measured at 4.5 feet above mean natural grade) or otherwise contain oak or other unique native trees (junipers, Joshuas, southern California black walnut, etc.)?	No Impact
f) Conflict with any local policies or ordinances protecting biological resources, including Wildflower Reserve Areas (L.A. County Code, Title 12, Ch. 12.36), the Los Angeles County Oak Tree Ordinance (L.A. County Code, Title 22, Ch. 22.56, Part 16), the Significant Ecological Areas (SEAs) (L.A. County Code, Title 22, § 22.56.215), and Sensitive Environmental Resource Areas (SERAs) (L.A. County Code, Title 22, Ch. 22.44, Part 6)?	No Impact
g) Conflict with the provisions of an adopted state, regional, or local habitat conservation plan?	No Impact
V. CULTURAL RESOURCES. Would the project:	
d) Disturb any human remains, including those interred outside of formal cemeteries?	Less Than Significant Impact

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
VI. ENERGY. Would the project:	
a) Conflict with Los Angeles County Green Building Standards Code (L.A. County Code Title 31)?	No Impact
b) Involve the inefficient use of energy resources (see Appendix F of the CEQA Guidelines)?	Less Than Significant Impact
VII. GEOLOGY AND SOILS. Would the project:	
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	No Impact
iv) Landslides?	No Impact
e) Have soils incapable of adequately supporting the use of onsite wastewater treatment systems where sewers are not available for the disposal of wastewater?	No Impact
f) Conflict with the Hillside Management Area Ordinance (L.A. County Code, Title 22, § 22.56.215) or hillside design standards in the County General Plan Conservation and Open Space Element?	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	
e) For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	No Impact
h) Expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located:	
i) within a Very High Fire Hazard Severity Zones (Zone 4)?	No Impact
ii) within a high fire hazard area with inadequate access?	No Impact
iv) within proximity to land uses that have the potential for dangerous fire hazard?	No Impact
v) Does the proposed use constitute a potentially dangerous fire hazard?	No Impact
X. HYDROLOGY AND WATER QUALITY. Would the project:	
e) Add water features or create conditions in which standing water can accumulate that could increase habitat for mosquitoes and other vectors that transmit diseases such as the West Nile virus and result in increased pesticide use?	Less Than Significant Impact
i) Result in point or nonpoint source pollutant discharges into State Water Resources Control Board-designated Areas of Special Biological Significance?	No Impact
j) Use onsite wastewater treatment systems in areas with known geological limitations (e.g. high groundwater) or in close proximity to surface water (including, but not limited to, streams, lakes, and drainage course)?	No Impact
l) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or within a floodway or floodplain?	No Impact
m) Place structures, which would impede or redirect flood flows, within a 100-year flood hazard area, floodway, or floodplain?	No Impact
n) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	No Impact
o) Place structures in areas subject to inundation by seiche, tsunami, or mudflow?	No Impact

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
XI. LAND USE AND PLANNING. Would the project:	
a) Physically divide an established community?	No Impact
c) Be inconsistent with the County zoning ordinance as applicable to the subject property?	Less Than Significant Impact
d) Conflict with Hillside Management Area Ordinance, Significant Ecological Areas Ordinance, or other applicable land use criteria?	No Impact
XII. MINERAL RESOURCES. Would the project:	
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	Less Than Significant Impact
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	Less Than Significant Impact
XIII. NOISE. Would the project result in:	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	Less Than Significant Impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	Less Than Significant Impact
XIV. POPULATION AND HOUSING. Would the project:	
b) Displace substantial numbers of existing housing, especially affordable housing, necessitating the construction of replacement housing elsewhere?	Less Than Significant Impact
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	Less Than Significant Impact
XV. PUBLIC SERVICES. Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services::	
f) Other public facilities?	No Impact
XVI. RECREATION.	
c) Would the project interfere with regional open space connectivity?	No Impact
XVII. TRANSPORTATION/TRAFFIC. Would the project:	
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less Than Significant Impact
e) Result in inadequate emergency access?	Less Than Significant Impact
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Less Than Significant Impact

9. Significant Irreversible Changes Due to the Proposed Project

Section 15126.2(c) of the CEQA Guidelines requires that an environmental impact report (EIR) describe any significant irreversible environmental changes that would be caused by the proposed project should it be implemented.

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highways improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The following are the significant irreversible changes that would be caused by the West Carson TOD Specific Plan, should it be implemented:

- Future development in accordance with the West Carson TOD Specific Plan would include construction activities that would entail the commitment of nonrenewable and/or slowly renewable energy resources, human resources, and natural resources such as lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, water, and fossil fuels. Future development would also require the use of natural gas and electricity, petroleum-based fuels, fossil fuels, and water. The commitment of resources required for the construction and operation of future development accommodated by the Specific Plan would limit the availability of such resources for future generations or for other uses during the life of the project.

- An increased commitment of social services and public maintenance services (e.g., police, fire, schools, libraries, and sewer and water services) would also be required. The energy and social services commitments would be long-term obligations in view of the low likelihood of returning the land to its original condition once it has been developed.

- An increase in project-related vehicle trips would accompany population growth as a result of Specific Plan buildout. Over the long term, emissions associated with such vehicle trips would continue to contribute to the South Coast Air Basin's nonattainment designation for ozone (O_3) and particulate matter ($PM_{2.5}$ and PM_{10}), nonattainment for lead (Los Angeles County only) under the California and National Ambient Air Quality Standards (AAQS), and nonattainment for nitrogen dioxide (NO_2) under the California AAQS.

9. Significant Irreversible Changes Due to the Proposed Project

- Future redevelopment and new development in accordance with the Specific Plan are long-term irreversible commitments of land in the community of West Carson.

Given the low likelihood that the developed land would revert to lower intensity uses or to its current form, the proposed West Carson TOD Specific Plan would generally commit future generations to these environmental changes.

10. Growth–Inducing Impacts of the Proposed Project

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine 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. Also required is an assessment of other projects that would foster other activities which could affect the environment, individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through analysis of the following questions:

- Would this 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 this project result in the need to expand one or more public services to maintain desired levels of service?

- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. 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 land use concept examined in the preceding sections of this EIR.

Would this 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?

Construction/Extension of Major Infrastructure Facilities

The West Carson TOD Specific Plan area is almost entirely built out. There are only three vacant parcels within the project site. Therefore, the entire project site is served by existing infrastructure including water and wastewater pipe lines, electricity, and natural gas. As detailed in Section 5.15, *Utilities and Service Systems*, development in accordance with the Specific Plan may require upsizing of water and wastewater pipelines to accommodate the demands of the proposed project at full buildout. However, the expansion of onsite

infrastructure would only occur when necessary to accommodate individual projects within the specific plan area.

Changes in Existing Regulations

The Specific Plan area is designated by the County of Los Angeles 2035 General Plan land use plan as Residential 9 (H9), Residential 18 (H18), Residential 30 (H30), Residential 50 (H50), General Commercial (CG), Mixed Use (MU), Light Industrial (IL), Public and Semi-Public (P), and Water (W) (see Figure 4-2, *Existing General Plan*).

The anticipated adoption of the West Carson TOD Specific Plan would allow development of the following eleven zoning districts: West Carson Residential 1 Zone, West Carson Residential 3 Zone, West Carson Residential 4 Zone, Residential Planned Development Zone, Neighborhood Commercial Zone, Unlimited Commercial Zone, Industrial Flex Zone, Harbor-UCLA Medical Zone, Mixed Use Development 1 Zone, Mixed Use Development 2 Zone, and Public Zone (see Figure 3-3, *Proposed Zoning Districts*). Buildout of the proposed project would accommodate up to 2,271 additional residential units and approximately 1.7 million square feet of additional nonresidential uses. However, these zoning districts are consistent with the existing General Plan designations for the area. Therefore, specific plan buildout is consistent with the growth projections for the area.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

As described in Section 5.11, *Public Services*, the West Carson TOD Specific Plan would require varying degrees of police, fire, school, and library service expansions in order to maintain a desired level of service.

Although the project site is almost entirely built out, redevelopment of the specific plan area in accordance with the Specific Plan would allow for an increase in dwelling units and nonresidential development as compared to existing conditions. Thus, buildout of the proposed project would increase police and fire service calls. The Los Angeles County Fire Department (LACoFD) provides fire protection and emergency services to the project area, and the Los Angeles County Sheriff's Department provides police protection to the project area. Any expansion of police or fire services would be financed through sales and property taxes, charges for services, the LACoFD Special Tax, State Proposition 172 public safety funds (for police services), and City of Carson development impact fees. Thus, no adverse impacts would occur to existing public services.

Development of up to 2,271 additional residential units would introduce approximately 5,961 residents to the project site, which would increase demand for school and library services as well. New students would likely attend schools within the Los Angeles Unified School District, and potential library patrons would visit the Carson Library in the City of Carson. As detailed in Section 5.11, *Public Services*, project impacts related to school and library services would not adversely impact existing capacities or levels of service.

Overall, the proposed project would not result in the need to expand one or more public services. A full discussion of public service impacts is provided in Section 5.11, *Public Services*.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

During construction of future projects in accordance with the Specific Plan, a number of design, engineering, and construction-related jobs would be created. This would be temporary employment conditions lasting until project construction is completed; however, it would be a direct, growth-inducing effect of the proposed project.

Buildout of the Specific Plan would accommodate up to 2,271 additional residential units and approximately 1.7 million square feet of additional nonresidential uses. The increase in residents and nonresidential development and associated jobs as a result of the proposed project would spur new economic investment in commercial, office, and industrial uses serving the Specific Plan area. Future residents would also pay property and sales tax for living and buying within West Carson. This would represent an increased demand for economic goods and services and could, therefore, encourage the creation of new businesses and/or the expansion of existing businesses, particularly in transit and mixed-use corridors in the project area. Additionally, a key component to the West Carson TOD Specific Plan is to encourage sizable growth in employment to support uses related to the Harbor-UCLA Medical Center, including medical offices; education, research and development; and retail and commercial offices. Development under the Specific Plan would also help achieve the full economic potential of the County's investments in the Harbor-UCLA Medical Center campus and Metro's investments in the Carson Metro Station. Overall, the proposed project would facilitate economic growth in the community of West Carson.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Approval of the West Carson TOD Specific Plan would require the approval of discretionary actions that would not set precedents for future projects with similar characteristics. The proposed project would require adoption of the Specific Plan. However, these proposed zoning districts are consistent with the existing General Plan designations for the area. Therefore, specific plan buildout is consistent with the growth projections for the area.

If additional development were allowed in the vicinity of the project, it may cause additional environmental impacts. However, future projects in West Carson or neighboring cities would require environmental review and discretionary approval by the applicable lead agencies (e.g., County Board of Supervisors or City Council). The proposed project would not change the existing protocol for project approval and would not provide precedents or make it more likely for other projects to gain approval of similar applications.

10. Growth-Inducing Impacts of the Proposed Project

This page intentionally left blank.

11. Organizations and Persons Consulted

11.1 COUNTY OF LOS ANGELES

Department of Regional Planning

Amy Bodek	Director
Mark Child, AICP	Deputy Director, Advance Planning
Anita D. Gutierrez, MPL, AICP	Supervising Regional Planner
Leon Freeman	Regional Planning Assistant II

Department of Parks and Recreation

Julie Yom, AICP	Park Planner

11.2 COUNTY OF LOS ANGELES PUBLIC LIBRARY

Elsa Munoz	Head, Support Services

11.3 LOS ANGELES COUNTY FIRE DEPARTMENT

Frank Vidales	Chief, Forestry Division, Prevention Services Bureau
Wally Collins	Fire Prevention Engineering Assistant II, Land Development Unit

11.4 LOS ANGELES COUNTY SANITATION DISTRICTS

Johnmar Deguzman	Project Engineer, Planning Department

11. Organizations and Persons Consulted

11.5 LOS ANGELES COUNTY SHERIFF'S DEPARTMENT

Jim McDonnell	Sheriff
Tracey Jue	Director, Facilities Planning Bureau
Jason Skeen	Captain, Carson Station
Karl R. Schow	Captain, Transit Bureau South

12. Qualifications of Persons Preparing EIR

PLACEWORKS

William Halligan, Esq.
Principal, Environmental Services

- JD, Chapman University School of Law
- BA, University of California, Irvine, Social Ecology

Nicole Vermilion
Associate Principal

- MURP, University of California, Irvine
- BA, Environmental Studies, and BS, Ecology and Evolutionary Biology, University of California, Santa Cruz

Bob Mantey
Senior Engineer, Noise, Vibration & Acoustics

- BS, Engineering, Harvey Mudd College

Fernando Sotelo, PE, PTP
Senior Associate, Transportation and Noise

- California Traffic Engineer No. 2770
- Professional Transportation Planner
- MS, Civil Engineering, University of Southern California
- BS, Naval Engineering, University of Sao Paulo, Brazil

John Vang, JD
Associate

- JD, Cleveland State University
- MUPDD, Cleveland State University
- BA, Anthropology, University of California, Los Angeles

Michael Milroy
Associate

- MS, Interdisciplinary Studies/Neuroscience, California State University, Long Beach
- BS, Biological Science, California State University, Long Beach

12. Qualifications of Persons Preparing EIR

This page intentionally left blank.

13. Bibliography

Acosta, Mario (Route Supervisor). 2016, December 6. Phone conversation. CalMet Services.

Airnav.com. 2016, November 23. Airport Information. http://www.airnav.com/airports/.

American Trauma Society (ATS). 2017, January 4. Trauma Center Levels Explained. http://www.amtrauma.org/?page=traumalevels.

Ballotpedia. 2016, November 28. Los Angeles County, California, Parks and Open Space Parcel Tax, Measure A (November 2016). https://ballotpedia.org/Los_Angeles_County,_California,_Parks_and_Open_Space_Parcel_Tax,_Measure_A_(November_2016).

Bay Area Air Quality Management District (BAAQMD). 2017, May. California Environmental Quality Act Air Quality Guidelines.

Beranek, Leo. 1988. *Noise and Vibration Control.* Revised edition. Washington, D.C.: Institute of Noise Control Engineering.

Bies, David A. and Colin H. Hansen. 2009. *Engineering Noise Control: Theory and Practice*. 4th edition. New York: Spon Press.

Bolt, Beranek & Newman. 1987. Noise Control for Buildings and Manufacturing Plants.

California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model (CalEEMod). Version 2016.3.1. Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

California Air Resources Board (CARB). 1998, April 22. The Report on Diesel Exhaust. http://www.arb.ca.gov/toxics/dieseltac/de-fnds.htm.

———. 1999, December. Final Staff Report: Update to the Toxic Air Contaminant List.

———. 2005, May. Air Quality and Land Use Handbook: A Community Health Perspective.

———. 2008, October. Climate Change Proposed Scoping Plan: A Framework for Change.

———. 2010, August. Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375. Staff Report.

13. Bibliography

———. 2014, May. California Greenhouse Gas Emission Inventory: 2000-2012. https://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-12_report.pdf.

———. 2014, May 15. Proposed First Update to the Climate Change Scoping Plan: Building on the Framework. https://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

———. 2015, September 15. ARB Process and Schedule for SB 375 Target Update. http://www.arb.ca.gov/cc/sb375/sb375.htm.

———. 2016, May 4. Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

———. 2016, May 5. Area Designations Maps/State and National. http://www.arb.ca.gov/desig/desig.htm.

———. 2016, June. 2016 Edition California Greenhouse Gas Inventory for 2000-2014: By Category as Defined in the 2008 Scoping Plan. http://www.arb.ca.gov/cc/inventory/data/data.htm.

———. 2017, January 20. The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

———. 2017, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm.

———. 2017. Air Pollution Data Monitoring Cards (2011, 2012, 2013, 2014, and 2015), Accessed April 6, 2017, http://www.arb.ca.gov/adam/topfour/topfour1.php.

California Climate Action Team (CAT). 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California.

California Council on Science and Technology (CCST). 2012, September. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. http://www.ccst.us/publications/2012/2012ghg.pdf.

California Department of Finance. 2014, December. Report P-1 (County): State and County Total Population Projections, 2010-2060 (5 -year increments). http://www.dof.ca.gov/Forecasting/Demographics/Projections/.

———. 2016, May. E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011–2016. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/documents/E-5_2016_InternetVersion.xls.

13. Bibliography

California Department of Fish and Wildlife (CDFW). 2016, November 9. "Groundwater Basins Layer." Biogeographic Information and Observation System (BIOS). https://www.wildlife.ca.gov/Data/BIOS.

California Department of Resources, Recycling and Recovery (CalRecycle). 2016a, December 6. Facility/Site Summary Details: Southeast Resource Recovery Facility. http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AK-0083/Detail/.

———. 2016b, December 6. Facility/Site Summary Details: Olinda Alpha: Facility/Site Summary Details: http://www.calrecycle.ca.gov/SWFacilities/Directory/30-AB-0035/Detail/.

———. 2016c, December 6. Facility/Site Summary Details: El Sobrante Landfill. http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0217/Detail/.

———. 2016d, December 6. Countywide, Regionwide, and Statewide Jurisdiction Diversion/Disposal Progress Report. http://www.calrecycle.ca.gov/LGCentral/Reports/jurisdiction/diversiondisposal.aspx.

———. 2017. Estimated Solid Waste Generation Rates. https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates.

California Department of Toxic Substances Control (DTSC). 2017, February 2. EnviroStor. http://www.envirostor.dtsc.ca.gov/public/.

California Department of Transportation (Caltrans). 2006. Traffic Noise Analysis Protocol.

———. 2009, November. Technical Noise Supplement ("TeNS"). Prepared by ICF International.

———. 2016, March 28. 2016 California Public Use Airports and Federal Airfields. http://www.dot.ca.gov/hq/planning/aeronaut/documents/maps/PublicUseAirports_MilitaryAirfieldsMap.pdf.

———. 2016. Long-Term Socio-economic Forecasts by County. http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html.

Caltrans Department of Transportation, Noise, Vibration, and Hazardous Waste Management Office. 2004, June. Transportation- and Construction-Induced Vibration Guidance Manual. Prepared by ICF International.

Caltrans Division of Environmental Analysis. 2002, February. Transportation Related Earthborne Vibration (Caltrans Experiences). Technical Advisory, Vibration. TAV-02-01-R9601. Prepared by Rudy Hendricks.

California Energy Commission (CEC). 2006. Our Changing Climate: Assessing the Risks to California. 2006 Biennial Report. California Climate Change Center. CEC-500-2006-077.

13. Bibliography

———. 2009. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077.

———. 2015, February 24. California Electric Utility Service Areas. http://www.energy.ca.gov/maps/serviceareas/Electric_Service_Areas_Detail.pdf.

———. 2015, February 24. California Natural Gas Utility Service Areas. http://www.energy.ca.gov/maps/serviceareas/natural_gas_service_areas.pdf.

———. 2015, June 10. 2016 Building Energy Efficiency Standards: Adoption Hearing Presentation. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents.

———. 2015. 2016 Building Energy and Efficiency Standards: Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.

———. 2016, January. Electricity Demand by Utility Planning Area. Volume 2 of California Energy Demand 2016-2026 Revised Electricity Demand Forecast. http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN207438_20160115T152222_California_Energy_Demand_20162026_Revised_Electricity_Demand_Fo.pdf.

California Gas and Electric Utilities (CGEU). 2016, July. 2016 California Gas Report. https://www.socalgas.com/regulatory/documents/cgr/2016-cgr.pdf.

California Geological Survey (CGS). 1986. Special Studies Zones Map, Torrance Quadrangle. http://gmw.consrv.ca.gov/shmp/download/quad/TORRANCE/maps/TORRANCE.PDF.

———. 1999, March 25. Seismic Hazard Zones Map, Torrance Quadrangle. http://gmw.consrv.ca.gov/shmp/download/quad/TORRANCE/maps/ozn_tor.pdf.

———. 2014, October 21. Ground Motion Interpolator. http://www.quake.ca.gov/gmaps/PSHA/psha_interpolator.html.

———. 2016, January 12. Fault Activity Map of California (2010). http://maps.conservation.ca.gov/cgs/fam/.

California Healthcare Foundation (CHCF). 2015, August. California Health Care Almanac. http://www.chcf.org/~/media/MEDIA%20LIBRARY%20Files/PDF/PDF%20C/PDF%20CaliforniaHospitals2015.pdf.

California Natural Resources Agency. (CNRA) 2014, July. Safeguarding California: Reducing Climate Risk, An Update to the 2009 California Climate Adaptation Strategy.

California State Library (CSL). 2017, February 6. California Public Library Outlets. http://www.batchgeo.com/map/capublibs.

13. Bibliography

California Stormwater Quality Association (CASQA). 2003, January. Stormwater Best Management Practice Handbook: Construction.

California Water Service Company, Dominguez District (CWSC). 2016, June. 2015 Urban Water Management Plan. https://wuedata.water.ca.gov/public/uwmp_attachments/2878492057/01%5FDOM%5F2015%5FUWMP%5FFINAL%2Epdf.

Carson, City of. 2008, October 7. Parks, Recreation, and Human Services Element. Chapter 9 of City of Carson General Plan. ci.carson.ca.us/content/files/pdfs/GenPlan/Chapter09.ParksRecreation.pdf.

———. 2016, September 1. City of Carson Budget: Fiscal Year 2016-2017. http://ci.carson.ca.us/content/files/pdfs/budgets/budget16-17/Budget2016-17_Full.pdf.

———. 2016, October 11. Planning Commission Staff Report. http://ci.carson.ca.us/content/files/pdfs/planning/sr/2016-10-11/1610.pdf.

———. 2016, December 7. Parks in the City. http://ci.carson.ca.us/communityservices/Parks_Rec_Parks.aspx.

Colorado Geological Survey (COGS). 2011, April 28. Definition of Swelling Soils. http://geosurvey.state.co.us/hazards/Swelling%20Soils/Pages/Definition.aspx.

Deguzman, Johnmar (Project Engineer). 2017, February 2. Written response to service questionnaire. Sanitation Districts of Los Angeles County.

Department of Health Services (DHS). 2017, January 4. Harbor-UCLA Medical Center. Los Angeles County. https://dhs.lacounty.gov/wps/portal/dhs/harbor.

Department of Parks and Recreation, Los Angeles County (DPR). 2016, May 24. Los Angeles Countywide Comprehensive Park & Recreation Needs Assessment. Study Area Profile: Unincorporated West Carson-Harbor City. http://lacountyparkneeds.org/FinalReportAppendixA/StudyArea_023.pdf.

———. 2016, December12. Victoria Community Regional Park. http://parks.lacounty.gov/wps/portal/dpr/Parks/Victoria_Community_Regional_Park.

Department of Public Works, Los Angeles County (DPW). 2012, September 24. Disaster Routes with Road Districts: South Los Angeles County. http://dpw.lacounty.gov/dsg/disasterroutes/map/disaster_rdm-South.pdf.

———. 2016, August 11. Geology and Soils. Section 4.D in Harbor-UCLA Medical Center Campus Master Plan Project Draft Environmental Impact Report. https://dpw.lacounty.gov/pmd/CampusMasterPlans/docs/HUCLA/Sections/4.D.%20Geology%20and%20Soils.pdf.

———. 2016, November 7. Los Angeles County Storm Drain System. http://dpw.lacounty.gov/fcd/stormdrain/index.cfm.

13. Bibliography

———. 2017, June 28. Solid Waste Information Management System. Residential Franchise System: Ocean View/La Rambla/West Carson. https://dpw.lacounty.gov/epd/swims/Residents/FranchiseAreas.aspx.

———. 2017, June 28. Business Trash Services. Solid Waste Information Management System. https://dpw.lacounty.gov/epd/swims/Businesses/.

Department of Regional Planning, Los Angeles County (DRP). 2017, February 1. ZNET Application. http://planning.lacounty.gov/znet.

Department of Water Resources (DWR). 2017, January 20. Groundwater Information Center Map Interactive Map Application. State of California. https://gis.water.ca.gov/app/gicima/.

Dibblee, T. W., et al. 1999. Geologic Map of the Palos Verdes Peninsula and Vicinity, Redondo Beach, Torrance, and San Pedro Quadrangles, Los Angeles County, California. http://ngmdb.usgs.gov/maps/mapview/.

Employment Development Department (EDD). 2017, January 27. Labor Force and Unemployment Rate for California Counties. https://data.edd.ca.gov/Labor-Force-and-Unemployment-Rates/Labor-Force-and-Unemployment-Rate-for-California-C/r8rw-9pxx.

Executive Department, State of California. 2016, May 9. Executive Order B-37-16. https://www.gov.ca.gov/docs/5.9.16_Executive_Order.pdf.

Federal Emergency Management Agency (FEMA). 2016, November 10. Flood Map Service Center. https://msc.fema.gov/portal.

Federal Highway Administration (FHWA). 1978, December. Federal Highway Traffic Noise Prediction Model. United States Department of Transportation Report No. FHWA-RD77-108.

Federal Motor Carrier Safety Administration (FMCSA). 2017, February 1. Hazardous Materials Routes (FMCSA). https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=8c665f66734e4933a02c9157ea9d6e61.

Federal Railway Administration (FRA). 2017, February 1. FRA Safety Map. http://fragis.fra.dot.gov/GISFRASafety/.

Federal Transit Administration (FTA). 2006, May. Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. US Department of Transportation.

Governor's Office of Planning and Research (OPR). 2003, October. *State of California General Plan Guidelines*.

———. 2016, January 20. Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA.

13. Bibliography

———. 2008, June. CEQA and Climate Change: Addressing Climate Change through CEQA Review. Technical Advisory. http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf.

Guerrero, Michelle (project manager). 2017, February 2. Phone conversation. Los Angeles Neighborhood Land Trust.

Harris, Cyril M. 1998. *Handbook of Acoustical Measurements and Noise Control*. 3rd edition. Woodbury, NY: Acoustical Society of America.

IBI Group. 2018, February 2. West Carson TOD Sewer Area Study. Prepared for Los Angeles County Department of Public Works.

———. 2017, August 13. West Carson Storm Water Study.

———. 2017, August 13. West Carson Water Area Study.

———. 2017, June 9. West Carson TOD Specific Plan Traffic Impact Study.

Institute of Transportation Engineers (ITE). 2012. *Trip Generation*. 9th edition.

Intergovernmental Panel on Climate Change (IPCC). 1995. *Second Assessment Report: Climate Change 1995*. New York: Cambridge University Press.

———. 2001. *Third Assessment Report: Climate Change 2001*. New York: Cambridge University Press.

———. 2007. *Fourth Assessment Report: Climate Change 2007*. New York: Cambridge University Press.

———. 2013. *Fifth Assessment Report: Climate Change 2013*. New York: Cambridge University Press.

Los Angeles, City of. 2016, December 7. Normandale Recreation Center. Department of Recreation and Parks. http://www.laparks.org/reccenter/normandale.

———. 2016, December 7. Ken Malloy Harbor Regional Park. Department of Recreation and Parks. http://www.laparks.org/park/ken-malloy-harbor-regional.

Los Angeles County. 2014, April 30. Los Angeles County Housing Element 2014-2021.

———. 2015, August. Final Unincorporated Los Angeles County Community Climate Action Plan 2020.

———. 2015, October 6. Planning Areas Framework. Chapter 5 in Los Angeles County General Plan. http://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch5.pdf.

———. 2016, December 15. County of Los Angeles 2016-17 Final Budget. http://ceo.lacounty.gov/pdf/budget/2016-17/Final%20Budget%20Book.pdf.

Los Angeles County Airport Land Use Commission (LACALUC). LACALUC Comprehensive Land Use Plan. http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf.

13. Bibliography

Los Angeles County Fire Department (LACoFD). 2012, March. County Base Wall Map.

Los Angeles County GIS Data Portal. 2017, February 1. Park Planning Areas. https://egis3.lacounty.gov/dataportal/2016/02/16/park-planning-areas/.

Los Angeles County Metropolitan Transportation Authority (Metro). 2010. 2010 Congestion Management Program.

———. 2016, June 16. Regional Connector Transit Project. https://www.metro.net/projects/connector/.

———. 2017, February 23. New Contract Approved to Increase Police Presence on Metro System. http://thesource.metro.net/2017/02/23/new-contract-approved-to-increase-police-presence-on-metro-system/.

Los Angeles County Public Library (LACPL). 2016, October 25. 2015-16 Fiscal Year-End Report for the Library Facilities Mitigation Fee Funds and Updated Capital Improvement Plan for Public Library Facilities. http://file.lacounty.gov/SDSInter/bos/supdocs/108381.pdf.

———. 2017, February 6. List of Libraries. http://www.colapublib.org/libs/.

Los Angeles County, Sanitation Districts of (LACSD). 2015, December. Districts Map. http://lacsd.org/civicax/filebank/blobdload.aspx?blobid=4445.

———. 2015, February 27. 2014 Pretreatment Program Annual Report. http://www.lacsd.org/civicax/filebank/blobdload.aspx?blobid=10476.

———. 2016, February 29. 2015 Pretreatment Program Annual Report. http://lacsd.org/civicax/filebank/blobdload.aspx?blobid=12481.

———. 2016, December 12. Southeast Resource Recovery Facility (SERRF) Brochure. http://www.lacsd.org/solidwaste/swfacilities/rtefac/serrf/brochure.asp.

———. 2017, January 13. Discharge Limits. http://www.lacsd.org/wastewater/industrial_waste/iwpolicies/discharge_limits.asp.

———. 2017, January 13. Joint Water Pollution Control Plant. http://www.lacsd.org/wastewater/wwfacilities/jwpcp/.

———. 2017, January 13. San Jose Creek Water Reclamation Plant. http://www.lacsd.org/wastewater/wwfacilities/joint_outfall_system_wrp/san_jose_creek.asp.

Los Angeles County Sheriff's Department (LASD). 2014, May 7. LASD Patrol Divisions. http://shq.lasdnews.net/content/uoa/EPC/LASD_Jurisdiction.pdf.

———. 2017, February 8. Patrol Station Guide. http://www.la-sheriff.org/s2/page_render.aspx?pagename=patrol_main.

13. Bibliography

Los Angeles Department of Transportation (LADOT). 2016. LADOT Transit. DASH. http://www.ladottransit.com/dash/.

Los Angeles Public Library (LAPL). 2017, June 12. Locations & Hours. https://www.lapl.org/branches.

Los Angeles Unified School District (LAUSD). 2017, February 7. Local District South: Superintendent. http://achieve.lausd.net/Page/2404.

———. 2015, May. Local District South Map. http://achieve.lausd.net/site/handlers/filedownload.ashx?moduleinstanceid=22573&dataid=24306&FileName=South.pdf.

———. 2014, June. School Upgrade Program EIR. Chapter 4: Project Description. http://achieve.lausd.net/cms/lib08/CA01000043/Centricity/domain/135/pdf%20files/Program_EIR_School_Upgrade_Program_Full.pdf.

McKenna et al. 2016, August 28. Cultural Resources Overview and Assessment: The City of Los Angeles, West Carson Transit Oriented District (TOD) Specific Plan Project Area, Los Angeles County, California.

MEC Analytical Systems. 2004, April. Dominguez Watershed Management Master Plan. http://www.ladpw.org/wmd/watershed/dc/DCMP/docs/Section%202%20Background%20Information%20Report.pdf.

Metropolitan Water District of Southern California (MWD). 2016, October 12. Regional Recycled Water Program. http://www.mwdh2o.com/PDF_About_Your_Water/Regional_Recyled_Water_Supply_Program.pdf.

———. 2016, November 3. 2015 Production Records for the five MWD water treatment plants.

———. 2017, January 23. About Your Water: Quality & Treatment. http://mwdh2o.com/AboutYourWater/Water-Quality/Pages/default.aspx.

Munoz, Elsa (Head, Support Services). 2017, May 2. Written response to service questionnaire. County of Los Angeles Public Library.

Natelson Company, The. 2001, October 31. Employment Density Study Summary Report. http://www.scag.ca.gov/pdfs/Employment_Density_Study.pdf.

National Center for Biotechnology Information (NCBI). PubChem Compound Database. https://www.ncbi.nlm.nih.gov/pccompound.

Nationwide Environmental Title Research, LLC (NETR). 2016, November 10. Historical aerial photographs. Historicaerials.com.

13. Bibliography

Natural Resources Conservation Service (NRCS). 2017, January 20. Soil Texture Calculator. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_054167.

———. 2004. Understanding Soil Risks and Hazards: Using Soil Survey to Identify Areas with Risks and Hazards to Human Life and Property. https://www.nature.nps.gov/geology/soils /Understanding%20Soil%20Risks%20and%20Hazards.pdf.

Office of Emergency Services (OES). 2016, February 23. Dam Inundation. DVD.

Office of Environmental Health Hazard Assessment (OEHHA). 2015, February. Air Toxics Hot Spots Program Risk Assessment Guidelines. In *Guidance Manual for Preparation of Health Risk Assessments*. http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf.

Palm Springs, City of. 2007. Safety Element. Chapter 6 of Palm Springs 2007 General Plan. http://www.ci.palm-springs.ca.us/home/showdocument?id=1975.

Perkins + Will. 2012, June 30. Harbor-UCLA Medical Center Campus Master Plan. http://ridley-thomas .lacounty.gov/PDFs/20120630_HARBOR%20UCLA%20MASTER%20PLAN.pdf.

Public Policy Institute of California (PPIC). 2016, December 2. Just the Facts: California's Latest Drought. http://www.ppic.org/main/publication_show.asp?i=1087.

Rancho Dominguez District (RDD). 2016, June. 2015 Urban Water Management Plan. California Water Service Company. https://wuedata.water.ca.gov/public/uwmp_attachments/2878492057/ 01%5FDOM%5F2015%5FUWMP%5FFINAL%2Epdf.

Regional Park and Open Space District (RPOSD). 2017, February 2. Project Locator: Del Amo Neighborhood Park. Los Angeles County. http://gis.lacounty.gov/rposd/District.aspx.

Schow, Karl (Captain). 2017, February 13. Written Response to Service Questionnaire. Los Angeles County Sheriff's Department.

Skeen, Jason (Captain). 2017, February 8. Written Response to Service Questionnaire. Los Angeles County Sheriff's Department.

South Coast Air Quality Management District (SCAQMD). 1993. *California Environmental Quality Act Air Quality Handbook*.

———. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. http://www.aqmd.gov/home/library/documents-support-material/planning-guidance/guidance-document.

———. 2008, July. Final Localized Significance Threshold Methodology.

———. 2008, September. Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES III). http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iii.

13. Bibliography

———. 2010, September 28. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group: Meeting 15. http://www.aqmd.gov/ceqa/handbook/GHG/2010/sept28mtg/sept29.html.

———. 2012, May 4. 2012 Lead State Implementation Plan, Los Angeles County. Revised Draft. http://www.aqmd.gov/aqmp/Lead_SIP/RvsdDraftLeadSIP.pdf.

———. 2013, February. 2012 Final Air Quality Management Plan. http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan.

———. 2015, May. Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES IV) Final Report. http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7.

———. 2015, March (revised). SCAQMD Air Quality Significance Thresholds. http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

———. 2015. Health Effects of Air Pollution. http://www.aqmd.gov/home/library/public-information/publications.

———. 2015, October. "Blueprint for Clean Air: 2016 AQMP White Paper." Prepared by Air Quality Management Plan Advisory Group. http://www.aqmd.gov/home/about/groups-committees/aqmp-advisory-group/2016-aqmp-white-papers.

———. 2017, March 4. Final 2016 Air Quality Management Plan. http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp.

———. 2017. Updates to CEQA Air Quality Handbook. *Air Quality Analysis Handbook*. Accessed April 6, 2017. http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

Southern California Association of Governments (SCAG). 2012, April 19. Integrated Growth Forecast. http://www.scag.ca.gov/forecast/index.htm.

———. 2014, April 21. Regional Planning & Local Perspectives: Economic and Demographic Trends for the City of Hermosa Beach. http://hermosabeach.granicus.com/MetaViewer.php?view_id=6&clip_id=3027&meta_id=148821.

———. 2016, April. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life. http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

———. 2016, June 5. 2015 Federal Transportation Improvement Program. http://ftip.scag.ca.gov/Documents/15FTIP_Transit_Amend15_0118LA.pdf.

13. Bibliography

———. 2017. High Quality Transit Areas (2040). SCAG GIS Open Data Portal. Accessed May 1, 2017. http://gisdata-scag.opendata.arcgis.com/datasets/43e6fef395d041c09deaeb369a513ca1_1.

———. 2017. SCAG Transit Priority Areas (2040). GIS Open Data Portal. Accessed May 1, 2017. http://gisdata-scag.opendata.arcgis.com/datasets/c9249b6bba0f49829b67ce104f81ef20_1.

Southern California Earthquake Data Center (SCEDC). 2016, March 24. San Fernando Earthquake. http://scedc.caltech.edu/significant/sanfernando1971.html.

———. 2016, March 24. Northridge Earthquake. http://scedc.caltech.edu/significant/northridge1994.html.

Southern California Edison (SCE). 2015. Power Content Label. http://www.energy.ca.gov/pcl/labels/2015_labels/Southern_California_Edison.pdf.

State Water Resources Control Board (SWRCB). 2016, May 5. Impaired Water Bodies. http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2012.shtml.

———. 2016, May 18. State Water Board Adopts 'Stress Test' Approach to Water Conservation Regulation. http://www.waterboards.ca.gov/press_room/press_releases/2016/pr051816_waterconsreg.pdf.

———. 2016, November 1. Statewide Water Savings Top 18 Percent in September; Conservation Still Needed Despite Early Rains. http://www.waterboards.ca.gov/press_room/press_releases/2016/pr110116_sept_conservation.pdf.

Steinbrenner, Britta (Captain). 2017, March 14. Written Response to Service Questionnaire. Los Angeles County Sheriff's Department.

Torrance, City of. 2010, April 6. Community Resources Element. Chapter 3 of City of Torrance General Plan. http://www.torranceca.gov/PDF/3_Community_Resources_Element.pdf.

Torrance Public Library. 2017, June 12. Library Hours and Locations. http://www.torranceca.gov/Library/28173.htm.

US Army Corps of Engineers (Corps), Seattle District. 2015, September 30. Third Five-Year Review Report for Del Amo Superfund Site, Operable Unit #1 and #2, Los Angeles County, California. https://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/c8e1baac141d3acd88257ed8007093f5/$FILE/DelAmoOU1-2%20FYRSigned_report_all.pdf.

US Census Bureau (USCB). 2016, November 15. Interactive Population Map. http://www.census.gov/2010census/popmap/.

———. 2016, November 16. Longitudinal Employer-Household Dynamics (LEHD). OnTheMap. http://onthemap.ces.census.gov/.

———. 2017, January 27. Longitudinal Employer-Household Dynamics (LEHD). OnTheMap. http://onthemap.ces.census.gov/.

13. Bibliography

———. 2017, June 26. Community Facts: West Carson CDP, California. https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml.

US Energy Information Administration (EIA). 2017, January 17. Energy-Related Carbon Dioxide Emissions at the State Level, 2000-2014. https://www.eia.gov/environment/emissions/state/analysis/.

US Environmental Protection Agency (USEPA). 1971, December. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. Prepared by Bolt, Beranek & Newman (Cambridge, MA) for the U.S. EPA Office of Noise Abatement and Control. Washington, D.C.

———. 1974, March. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Washington, D.C.: U.S. EPA Office of Noise Abatement and Control.

———1978, November. Protective Noise Levels. EPA 550/9-79-100. (Condensed version of 1971 and 1974 documents.)

———. 2009, December. EPA: Greenhouse Gases Threaten Public Health and the Environment. http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252.

———. 2012, September 26. Water Permitting 101. http://www.epa.gov/npdes/pubs/101pape.pdf.

———. 2017. Criteria Air Pollutants. https://www.epa.gov/criteria-air-pollutants.

———. 2017. Overview of Greenhouse Gases. http://www3.epa.gov/climatechange/ghgemissions/gases.html.

US Geological Survey (USGS). 1896. Redondo Sheet Topographic Map. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Redondo_298753_1896_62500.jpg.

———. 1924. Compton Quadrangle Topographic Map. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Compton_289448_1924_24000.jpg.

———. 1964. Torrance Quadrangle Topographic Map. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Torrance_300911_1964_24000.jpg.

———. 1981. http://ngmdb.usgs.gov/img4/ht_icons/Browse/CA/CA_Torrance_102041_1964_24000.jpg.

Vidales, Frank (Chief, Forestry Division). 2017, February 15. Written response to service questionnaire. Los Angeles County Fire Department.

Water Replenishment District of Southern California (WRD). 2016, May 9. Engineering Survey and Report: 2016. http://www.wrd.org/WRD_ESR_Report_March_3_2016_Final_For_Web.pdf.

Weltz, Jerry. 2003. Jobs-Housing Balance. Planning Advisory Service Report Number 516. American Planning Association.

13. Bibliography

West Basin Municipal Water District (WBMWD). 2016, June 30. 2015 Urban Water Management Plan. https://wuedata.water.ca.gov/public/uwmp_attachments/1460981070/HiRes.UrbanWaterPlanBook.6.30.16.pdf.

Western Regional Climate Center (WRCC). 2017. Western U.S. Climate Summaries: Torrance AP, California, Monitoring Station (Station ID No. 048973). Accessed April 6, 2017. http://www.wrcc.dri.edu/summary/Climsmsca.html.

Yom, Julie, AICP (park planner). 2017, March 13. Written response to service questionnaire. County of Los Angeles Department of Parks and Recreation.