INTERSTATE 405 FROM WILMINGTON AVENUE TO MAIN STREET IMPROVEMENTS PROJECT

LOS ANGELES COUNTY, CALIFORNIA
DISTRICT 07-LA-405 (PM 9.6/12.6)
EA 35940/EFIS 0719000215

Draft Environmental Impact Report/ Environmental Assessment

Prepared by the
State of California, Department of Transportation,
and Los Angeles County Metropolitan Transportation Authority

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated May 27, 2022, and executed by FHWA and Caltrans.

June 2026

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GENERAL INFORMATION ABOUT THIS DOCUMENT

WHAT'S IN THIS DOCUMENT:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA) in coordination with the Los Angeles County Transportation Authority (Metro), has prepared this Environmental Impact Report/Environmental Assessment, which examines the potential environmental impacts of the alternatives being considered for the proposed I-405 Wilmington Avenue to Main Street Project (Project) located in the City of Carson, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA). Caltrans is also the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the Project is being proposed, what alternatives have been considered for the proposed Project, how the existing environment could be affected by the proposed Project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

WHAT YOU SHOULD DO:

- Please read this document.

- Additional copies of this document and related technical studies are available for review at the Caltrans District 7 Office located at 100 South Main Street, Los Angeles, CA 90012, Monday through Friday, from 7:30 a.m. to 5:00 p.m. and at the Carson Library, located at 151 East Carson Street, Carson, CA 90745. Please check https://lacountylibrary.org/location/carson-library/ for current schedule. This document may be downloaded at the following website: https://www.metro.net/projects/i-405-wilmington/

- Attend the public hearings on August 20 and 25, 2026, from 6:00–7:30 p.m. The meeting will be located at the Carson Event Center (801 East Carson Street, Carson, CA 90745).

- We'd like to hear what you think. If you have any comments about the proposed Project, please attend the open house and/or send your written comments via postal mail or email to Caltrans by the deadline.

- Send comments via postal mail to:
  California Department of Transportation, District 7
  Division of Environmental Planning
  Attn: Rocky Rojas, Environmental Scientist
  100 South Main Street, MS 16A
  Los Angeles, CA 90012

- Send comments via email to: wilmington@metro.net

- Submit comments online at: https://www.metro.net/projects/i-405-wilmington/
- Be sure to send comments by the deadline: September 21, 2026.

WHAT HAPPENS NEXT:

After comments are received from the public and reviewing agencies, Caltrans, as assigned by the FHWA, may: (1) give environmental approval to the proposed Project, (2) do additional environmental studies, or (3) abandon the proposed Project. If the proposed Project is given environmental approval and funding is obtained, Caltrans or Metro could design and construct all or part of the proposed Project.

ALTERNATIVE FORMATS:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Rocky Rojas, 100 South Main Street, MS 16A, Los Angeles, California 90012; (213) 266-3822 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY to Voice), 1 (800) 735-2922 (Voice to TTY), 1 (800) 855-3000 (Spanish TTY to Voice and Voice to TTY), 1-800-854-7784 (Spanish and English Speech-to-Speech) or 711.

State Clearinghouse # 2024090192
07-LA-405 Postmiles 9.6/12.6
EA 35940/EFIS 0719000215

Addition of Auxiliary Lanes and Implementation of Transportation System Management and Transportation Demand Management Elements along Interstate 405 between Wilmington Avenue and Main Street in the City of Carson

Draft Environmental Impact Report/ Environmental Assessment

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C)

THE STATE OF CALIFORNIA
Department of Transportation
and
Los Angeles County Metropolitan Transportation Authority

Responsible Agencies: California Transportation Commission , U.S. Army Corps of Engineers, California Department of Fish and Wildlife, California Water Resources Board, Los Angeles Regional Water Quality Control Board, Los Angeles County Flood Control District, City of Carson

Gloria Roberts (Jun 29, 2026 14:59:36 PDT)

06/29/2026

Gloria Roberts
District 7 Director
California Department of Transportation
CEQA and NEPA Lead Agency

Date

The following person may be contacted for more information about this document:
Rocky Rojas, 100 South Main Street, MS 16A, Los Angeles, CA 90012, (213) 266-3772,
Rocky.Rojas@dot.ca.gov

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Summary

S-1 NEPA Assignment

Since 2007, the California Department of Transportation (Caltrans) has performed federal responsibilities for environmental decisions and approvals under the National Environmental Policy Act (NEPA) for highway projects in California that are funded or otherwise approved by the Federal Highway Administration (FHWA). These responsibilities have been assigned to Caltrans by FHWA pursuant to Title 23 United States Code (USC) Sections 326 and 327 and two Memoranda of Understanding signed by FHWA. Please see the Caltrans Standard Environmental Reference (SER) Volume 1, Chapter 38, "NEPA Assignment" for additional information.

S-2 Project Overview

The Los Angeles County Metropolitan Transportation Authority, in cooperation with Caltrans and the South Bay Cities Council of Governments, proposes to improve freeway operations and safety along both directions of Interstate 405 (I-405) from Wilmington Avenue to Main Street in the City of Carson, Los Angeles County, California. Associated improvements would include the addition of auxiliary lanes between on- and off-ramps to improve weaving, merging, and diverging operations and the implementation of Transportation System Management (TSM) and Transportation Demand Management (TDM) elements (Project).

S-2.1 Lead Agencies and NEPA/CEQA Documentation

The proposed Project is a joint project by Caltrans and FHWA and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and NEPA. Caltrans is the lead agency under CEQA and NEPA.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, often a "lower level" document is prepared for NEPA.

After receiving comments from the public and reviewing agencies, a final environmental document will be prepared. Caltrans may prepare additional environmental and/or engineering studies to address comments. The final environmental document will include responses to comments received on the Draft Environmental Impact Report/ Environmental Assessment (EIR/EA) and will identify the preferred alternative.

Upon completion of the final environmental document, Caltrans will decide whether to approve the project and issue a Notice of Determination for compliance with CEQA, and whether to issue a Finding of No Significant Impact or require an Environmental Impact Statement for compliance with NEPA. If approved, a Notice of Availability of the Finding

of No Significant Impact will be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in compliance with Executive Order 12372.

S-2.2 Project Area

The Project Study Area includes the limits of proposed safety and operational improvements along I-405 between the Wilmington Avenue (post mile [PM] 9.6) and Main Street (PM 12.6) interchanges, which is approximately 3.0 miles in length. Temporary signage areas between the Union Pacific Dolores Yard (PM 8.9) interchanges and Figueroa Street (PM 12.7) interchanges are also proposed within the Project Study Area.

The proposed Project is located in a generally urban setting and is surrounded by a mix of residential, commercial, recreational, light and heavy industrial, and public use. Within the Project Study Area, I-405 is a controlled-access freeway trending in the northwest-southeast direction and consists of one 11-foot-wide high-occupancy vehicle (HOV) lane and four 11-foot-wide general purpose lanes in each direction.

The following transportation improvement projects are assumed to be in place along the Project corridor for purposes of this assessment:

- Construct express lanes on I-405 between Interstate 110 (I-110) and Los Angeles/Orange County Line (Completion Year: 2031; Regional Transportation Plan [RTP] ID 1200S004)

- Construct the northbound (NB) I-405 to NB I-110 and southbound (SB) I-110 to SB I-405 express lane connectors at the I-405 and I-110 interchange (Completion Year: 2047; RTP ID 224S011)

- Extend express lanes in each direction of I-110 from State Route 91 (SR-91) to I-405 (Completion Year: 2049; RTP ID 224S010)

S-2.3 Purpose and Need

The purpose of the proposed Project is to provide improved connectivity and increase multimodal access within the Project corridor and to accommodate the planned economic development within the Project Study Area.

The need of the proposed Project is to improve traffic operations and safety for vehicle traffic and to provide additional access and connectivity for pedestrians and bicyclists at local interchanges throughout the Project corridor.

S-2.4 Proposed Action

This section describes the proposed Project and the Build Alternatives that were developed by a multidisciplinary team to achieve the proposed Project's purpose and need while avoiding or minimizing environmental impacts. The alternatives, as

described in this section, consist of a No-Build Alternative (Alternative 1) and two Build Alternatives (Alternatives 2 and 3):

Alternative 1 – No-Build

Under Alternative 1, no improvements would take place on I-405, and select local roads would not receive the proposed Complete Street updates for all modes of transportation.

Alternative 2 – Auxiliary Lanes and Complete Streets

Under Alternative 2, two auxiliary lanes on NB I-405 and two auxiliary lanes on SB I-405 would be provided at the following locations:

- Along NB I-405:
    - Between the Wilmington Avenue NB on-ramp and the Carson Street NB loop off-ramp (0.69 mile long)
    - Between the Carson Street NB on-ramp and the Avalon Boulevard NB off-ramp (0.30 mile long)
- Along SB I-405:
    - Between the Avalon Boulevard SB on-ramp and the Carson Street SB loop off-ramp (0.39 mile long)
    - Between the Carson Street SB on-ramp and the Wilmington Avenue SB off-ramp (0.56 mile long)

Alternative 2 would also construct and implement Complete Streets elements as well as TSM and TDM systems throughout the Project Study Area.

Alternative 3 – Transportation Systems Management/ Transportation Demand Management

Under Alternative 3, the proposed Project would construct and implement Complete Streets elements as well as TSM and TDM systems throughout the Project Study Area. Alternative 3 would not include the construction or extension of any auxiliary lane.

S-3 PROJECT IMPACTS

Table S-1 summarizes the proposed Project's environmental consequences, which are provided in Chapter 2 and Chapter 3 of this EIR/EA. Avoidance, minimization, and mitigation measures are listed in the Environmental Commitments Record in Appendix C.

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Table S-1: Summary of Major Potential Impacts from Alternatives

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Consistency with Federal, State, Tribal, Regional, and Local Plans and Programs	Would be inconsistent with applicable federal, State, regional, and local plans.	Consistent – No Impact	Consistent – No Impact	None
Growth	No impact	No impact	No impact	None
Community Character and Cohesion	No impact	Temporary noise, air quality, and traffic impacts may occur during construction. Alternative 2 would improve mobility and add Complete Street elements, which would benefit community cohesion.	Same as Alternative 2	None
Relocations and Real Property Acquisition	No impact	No relocations or displacements.	Same as Alternative 2	None
Utilities/Emergency Services	No impact	Minor utility relocations would be required. This includes 27 protect in place, 11 protect in place with variance, 20 relocate, 9 adjust to grade, 3 remove or abandon. No temporary or permanent interruptions to utility services are anticipated. *CEQA: Less than Significant*	Similar to Alternative 2. Minor utility relocations would be required. This includes 10 protect in place, 1 protect in place with variance, 11 relocate, and 8 adjust to grade. No temporary or permanent interruptions to utility services are anticipated. *CEQA: Less than Significant*	Alternative 2: UTL-1, UTL-2 Alternative 3: UTL-1, UTL-2

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Transportation	No impact. Congestion from existing mainline bottlenecks would continue to worsen compared to existing conditions.	Temporary impacts would occur during construction due to short-term ramp closures and overnight mainline closures. Mainline congestion and queuing would be slightly improved following construction. Circulation, mobility, and access for bicycles and pedestrians would also be improved. On-street parking spaces on 213th Street would be removed. No impact on VMT. *CEQA: Less than Significant*	Similar impacts as Alternative 2. However, Alternative 3 would not improve mainline congestion or queuing. *CEQA: Less than Significant*	None
Visual/Aesthetics	No impact	Project Study Area is not located on a scenic highway or scenic vista. Alternative 2 would impact approximately 114 trees; however, the conceptual design would plant 542 trees. Minor beneficial impacts are anticipated on key views. *CEQA: Less than Significant*	Similar to Alternative 2; however, Alternative 3 would impact approximately 20 trees. *CEQA: Less than Significant*	Alternative 2: VIS-1, VIS-2, VIS-3, and AS-4 Alternative 3: VIS-1, VIS-2, VIS-3, and AS-4
Cultural Resources	No impact	Alternative 2 would widen the Domiguez Channel Bridge within the Domiguez Channel Historic District. Caltrans has determined that Alternative 2 would not cause an adverse effect to the historic district. Should cultural resources or human remains be discovered during construction, Caltrans standard practices would be implemented. *CEQA: Less than Significant*	Similar to Alternative 2; however, Alternative 3 would not widen the Dominguez Channel Bridge within the Dominguez Channel Historic District. *CEQA: Less than Significant*	Alternative 2: CUL-1 Alternative 3: CUL-1

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Hydrology and Floodplain	No impact	During construction, temporary falsework would be required within the Dominguez Channel, which is located within a 100-year floodplain. Alternative 2 would slightly increase the base flood elevation by an estimated 0.01 foot higher than existing condition for approximately 10,000 feet within the Dominguez Channel. No significant impact on floodplain. Floodplain Encroachment Permit could be required. *CEQA: Less than Significant*	No construction activities or permanent improvements would occur within the Dominguez Channel. There would be no change to the base flood elevation. *CEQA: No Impact*	None
Water Quality and Stormwater Runoff	No impact	Alternative 2 has the potential to result in temporary and permanent impacts on water quality. Alternative 2 would also include construction activities and permanent improvements within the Dominguez Channel. Total DSA would be 30.98 acres. Total increase in net new impervious surface area would be 7.43 acres. The proposed Project would be required to comply with NPDES permit requirements and prepare a SWPPP to avoid and minimize temporary impacts during construction. Design pollution prevention and treatment BMPs would be implemented. Section 404 Permit (Nationwide Permit), Section 401 Water Quality Certification, Section 1602 Lake or Streambed Alteration Agreement, and Floodplain Encroachment Permit could be required, which may result in additional measures by regulatory agencies. *CEQA: Less than Significant*	Similar to Alternative 2; however, the total DSA would be 12.70 acres and the total increase in net new impervious surface area would be 5.33 acres. In addition, no construction activities or permanent improvements would occur within the Dominguez Channel. *CEQA: Less than Significant*	Alternative 2: NC-3, NC-4, NC-5, NC-7, and NC-8 Alternative 3: NC-3, NC-4, NC-5, NC-7, and NC-8

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Geology/Soils/Seismic/ Topography	No impact	During construction, excavated soil would be exposed, and there would be an increased potential for soil erosion compared to existing conditions. There is potential for soil liquefaction and corrosive soils. Proposed activities and improvements could be affected by ground motion, liquefaction, and possibly ground deformation. *CEQA: Less than Significant*	Similar to Alternative 2; however, no work would occur within the Dominguez Channel. *CEQA: Less than Significant*	Alternative 2: GEO-1 Alternative 3: GEO-1
Paleontology	No impact	No unique paleontological resources or sites were identified within the APE. During construction, the Project could potentially impact paleontologically sensitive sediments for the construction of auxiliary lanes, bridge widening, and tie back walls. *CEQA: Less than Significant*	No unique paleontological resources or sites were identified within the APE. Construction activities could potentially impact paleontologically sensitive sediments for the construction of tie back walls. *CEQA: Less than Significant*	Alternative 2: PAL-1 Alternative 3: PAL-1
Hazardous Waste/Materials	No impact	The Project Study Area is located on a former municipal and industrial waste dump. In addition, Dominguez channel reportedly receives industrial waste discharge. ADL, arsenic, and wood preservatives may be present in soils. Lead and ACM may be present in bridges and other structures. Soil, soil vapor, and groundwater contamination could be encountered during excavations. Methane gas could be released into ambient air during excavations. *CEQA: Less than Significant*	The Project Study Area is located on a former municipal and industrial waste dump. Similar impacts related to sites of concern (ADL, arsenic, wood preservatives) as Alternative 2. Alternative 3 would not result in impacts related to ACM, LBP, or the Dominguez Channel. *CEQA: Less than Significant*	Alternative 2: HAZ-1, HAZ-2, HAZ-3, HAZ-4, and HAZ-5 Alternative 3: HAZ-1, HAZ-3, and HAZ-4

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Air Quality	No impact. There would be a slight increase in particulate matter 10 microns in diameter or less in the Design Year compared to existing conditions.	The proposed Project is located in an AB 617 community. Short-term degradation of air quality may occur during construction due to the release of particulate matter emissions (airborne dust). Heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate carbon monoxide, sulfur dioxide, nitrogen oxides, volatile organic compounds, and some soot particulate in exhaust emissions. Bridge widening could impact asbestos and LBP. Operational impacts would be the same as the No-Build Alternative. *CEQA: Less than Significant*	Similar to Alternative 2. However, construction emissions would be less than Alternative 2, and Alternative 3 would not widen any bridges. Operational impacts would be the same as Alternative 1 and Alternative 2. *CEQA: Less than Significant*	Alternative 2: AQ-1 through AQ-16, HAZ-2, and HAZ-4 Alternative 3: AQ-1 through AQ-15 and HAZ-4

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Noise	No impact	Construction noise would be short-term and intermittent. Nighttime construction is anticipated. Operational noise would not substantially exceed existing noise levels (12 dBA). However, Alternative 2 would have a noise impact because future noise levels would approach federal noise abatement criteria (i.e., within 1 dBA) under 23 CFR Part 772. Three noise barriers were determined reasonable and feasible and are being recommended for construction: - BA-3 at Northbound (I-405 near Carson Street - BA-7at Southbound I-405 Avalon Boulevard off-ramp - BA-10 at Southbound I-405 on-ramp The Avalon Boulevard Undercrossing would need to be widened to accommodate Noise Barrier BA-7. *CEQA: Less than Significant*	Construction noise would be short-term and intermittent. There would be no operational noise impact under 23 CFR 772. *CEQA: Less than Significant*	NOI-1
Energy	No impact. Energy will decrease in the Design Year compared to existing conditions.	Direct energy use under Alternative 2 would be the same as the No-Build Alternative and less than existing conditions. Indirect energy use during construction would be approximately 21,953 million BTU. *CEQA: Less than Significant*	Direct energy use would be the same as Alternative 1 and Alternative 2. Indirect energy use during construction would be approximately 4,022 million BTU. *CEQA: Less than Significant*	Alternative 2: ENR-1 through ENR-4, AQ-1, AQ-12, and AQ-15 Alternative 3: ENR-1 through ENR-4, AQ-1, AQ-12, and AQ-15

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Natural Communities	No impact	Alternative 2 would result in approximately 0.07 acre of temporary impacts and 0.01 acre of permanent impacts on Pickleweed Mats (State rank: S3), which are found on the lower tidal banks of the Dominguez Channel within the BSA. *CEQA: Less than Significant with Mitigation Incorporated*	Alternative 3 would result in temporary indirect impacts on the Del Amo Channel and associated Pickleweed Mats from dust generated during construction. *CEQA: Less than Significant*	Alternative 2: NC-1, NC-2 (CEQA Mitigation), NC-3 through NC-10, and NC-11 (CEQA Mitigation) Alternative 3: NC-5
Wetlands and Other Waters	No impact	Alternative 2 would temporarily impact approximately 1.30 acres of non-wetland waters and 0.07 acre of wetlands under USACE and RWQCB jurisdiction. Alternative 2 would also permanently impact approximately 0.33 acre of non-wetland waters and 0.01 acre of wetlands under USACE and RWQCB jurisdiction. Alternative 2 would temporarily impact approximately 2.01 acres of unvegetated streambed and approximately 0.07 acre of Pickleweed Mats/riparian vegetation under CDFW jurisdiction. Alternative 2 would permanently impact approximately 0.54 acre of unvegetated streambed and approximately 0.01 acre of Pickleweed Mats. *CEQA: Less than Significant with Mitigation Incorporated*	Alternative 3 would not result in any direct temporary or permanent impacts to non-wetland or wetlands waters under USACE or RWQCB jurisdiction. Alternative 3 would also not directly impact unvegetated streambed or Pickleweed Mats/riparian vegetation under CDFW jurisdiction. However, Alternative 3 could result in temporary indirect impacts to the Del Amo Channel and associated Pickleweed Mats from construction activities adjacent to the channel (dust generation). *CEQA: Less than Significant*	Alternative 2: NC-1 through NC-9, and NC-11 (CEQA Mitigation) Alternative 3: NC-5

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Plant Species	No impact	No special-status plant species were identified during field surveys. The BSA includes habitat that could support lucky morning-glory (*Calystegia felix*), southern tarplant (*Centromadia parryi* ssp. *australis*), smooth tarplant (*Centromadia pungens* ssp. *laevis*), vernal barley (*Hordeum intercedens*), and Sanford's arrowhead (*Sagittaria sanfordii*). Alternative 2 would temporarily impact approximately 2.01 acres and permanently impact approximately 0.54 acre of suitable streambed habitat for lucky morning-glory, southern tarplant, and Sanford's arrowhead. Alternative 2 would also temporarily impact approximately 2.47 acres and permanently impact approximately 0.19 acre of suitable habitat for vernal barley. *CEQA: Less than Significant with Mitigation Incorporated*	Alternative 3 would not impact suitable unvegetated streambed habitat for lucky morning-glory, southern tarplant, or Sanford's arrowhead. Alternative 3 would temporarily impact approximately 2.47 acres and permanently impact approximately 0.11 acre of suitable habitat for vernal barley. *CEQA: Less than Significant with Mitigation Incorporated*	Alternative 2: PS-1, PS-2 (CEQA Mitigation), and NC-5 Alternative 3: PS-1, PS-2 (CEQA Mitigation), and NC-5

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Animal Species	No impact	American bumble bee (*Bombus pensylvanicus),* Southern California legless lizard *(Anniella stebbinsi*), migratory birds, and bats have the potential to occur in the BSA. Construction activities, such as grading, excavation, vegetation removal, and operation of heavy equipment, could result in direct and indirect impacts on special-status animal species within the BSA. Indirect impacts may also arise from construction-related noise, vibration, and artificial lighting. *CEQA: Less than Significant with Mitigation Incorporated*	Same as Alternative 2. *CEQA: Less than Significant with Mitigation Incorporated*	Alternative 2: AS-1 (CEQA Mitigation), AS-2, AS-3, AS-4, NC-1, and NC-2 (CEQA Mitigation) Alternative 3: AS-1 (CEQA Mitigation), AS-2, AS-3, AS-4, NC-1, and NC-2 (CEQA Mitigation)

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Threatened and Endangered Species	No impact	A monarch butterfly (federal proposed threatened species; *Danaus plexippus plexippus* pop. 1) was observed during field surveys. Crotch's bumble bee (*Bombus crotchii),* burrowing owl (*Athene cunicularia*), and Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) also have the potential to occur in the BSA. Construction activities, such as grading, excavation, vegetation removal, and operation of heavy equipment could result in direct and indirect impacts on listed species within the BSA. Indirect impacts may also arise from construction-related noise, vibration, and artificial lighting. Alternative 2 would also directly impact pickleweed mats, which are suitable habitat for Belding's Savannah sparrow. Caltrans has determined that Alternative 2 would not affect any federally listed species or result in the "take" of any state listed species. *CEQA: Less than Significant with Mitigation Incorporated*	Similar to Alternative 2; however, Alternative 2 would not directly impact pickleweed mats, which are suitable habitat for Belding's Savannah sparrow. *CEQA: Less than Significant with Mitigation Incorporated*	Alternative 2: TE-1 through TE-8, NC-1, NC-2 (CEQA Mitigation), NC-3, and NC-9, and AS-1 (CEQA Mitigation) Alternative 3: TE-1 through TE-8; NC-1, NC-2 (CEQA Mitigation), NC-3, and NC-9, and AS-1 (CEQA Mitigation)
Invasive Species	No impact	There are several invasive species growing in the BSA. Proposed activities would have the potential to spread invasive species through further disturbance of the BSA. *CEQA: Less than Significant*	Same as Alternative 2 *CEQA: Less than Significant*	Alternative 2: INV-1 Alternative 3: INV-1

Potential Impact	Alternative 1 (No-Build)	Alternative 2 (Auxiliary Lanes and Complete Streets)	Alternative 3 (TSM/TDM)	Avoidance, Minimization, and/or Mitigation Measures
Climate Change (CEQA only)	No impact. GHG emissions will decrease in the Opening and Design Year compared to existing conditions.	Alternative 2 is a roadway capacity enhancing project but is not expected to induce VMT. Construction activities are estimated to emit approximately 1,618 metric tons of CO2e. Operational GHG emissions would be the same as the No-Build Alternative, and less than existing conditions. *CEQA: Less than Significant*	Alternative 3 is not a roadway capacity enhancing project and would not induce VMT. Similar to Alternative 2; however, construction activities are estimated to emit approximately 299 metric tons of CO2e. *CEQA: Less than Significant*	Alternative 2: AQ-1, AQ-5, AQ-6, AQ-12, AQ-13, ENR-1, ENR-2, ENR-3, NC-1, NC-3, and NC-7 Alternative 3: AQ-1, AQ-5, AQ-6, AQ-12, AQ-13, ENR-1, ENR-2, ENR-3, NC-1, NC-3, and NC-7
Senate Bill 743/ Induced Demand Analysis (CEQA only)	No impact	*CEQA: No Impact – Screened*	*CEQA: No Impact – Screened*	None
Wildfire (CEQA only)	No impact	*CEQA: No Impact*	*CEQA: No Impact*	None
Cumulative Impacts (CEQA only)	No impact	*CEQA: Less than Significant with Mitigation Incorporated*	*CEQA: Less than Significant with Mitigation Incorporated*	No additional measures

AB=Assembly Bill; ACM=asbestos-containing material; ADL=aerially deposited lead; APE=area of potential effects; bfe=base flood elevation; BMP=Best Management Practice; BSA=Biological Study Area; BTU= British thermal units; CDFW=California Department of Fish and Wildlife; CEQA=California Environmental Quality Act; CFR=Code of Federal Regulations; CO2e=carbon dioxide equivalent; dBA= A-weighted decibels; DSA=disturbed surface area; GHG=greenhouse gas; LBP=lead-based paint; NPDES=National Pollutant Discharge Elimination System; RWQCB=Regional Water Quality Control Board; SWPP=stormwater pollution prevention plan; TDM=Transportation Demand Management; TSM=Transportation System Management; USACE=U.S. Army Corps of Engineers; VMT=vehicle miles traveled

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S-4 Summary of Significant Impacts Under CEQA

As discussed in detail in Chapter 3, *CEQA Evaluation*, Caltrans has preliminarily determined that neither Build Alternative would result in a significant and unavoidable impact under CEQA. Both Build Alternatives would have less than significant impacts on biological resources individually and cumulatively with implementation of the following mitigation measures:

Measure NC-2 During construction, the California Department of Transportation's (Caltrans) Resident Engineer or designated contractor, will ensure that pesticide/insecticide will not be used as a part of the proposed Project.

Measure PS-2 During Construction, Caltrans' Resident Engineer or designated contractor, with the coordination of a qualified biologist, will ensure that if the special-status plants cannot be avoided, or if monitoring determines that the plants are being adversely affected by construction activities, these activities would be suspended, and a Relocation Plan would be developed by a qualified biologist to relocate the plants to a suitable location and monitor their survival. The Relocation Plan would include, at a minimum, details on the relocation site, the methods for relocation, methods for monitoring, and survival criteria. The relocated plants would be monitored for a period of time sufficient to confirm they have survived the transplanting, as specified in the Relocation Plan. If plant relocation survival is low, supplemental plantings (e.g., container plants and/or hydroseeding) would be implemented to help meet the established success criteria.

Measure AS-1 During and after construction, the California Department of Transportation's (Caltrans) Resident Engineer or designated contractor, will ensure that areas temporarily disturbed during construction will be restored using native species, where feasible and appropriate, as determined by a qualified biologist in coordination with the landscape architect and agency-approved restoration or landscaping plans. To support pollinator habitat, restoration areas will include at least two native flowering species, such as coffeeberry (*Frangula californica*) and toyon (*Heteromeles arbutifolia*), which are included in the current landscaping concept, if suitable for site conditions.

The following mitigation measure is also proposed, should Alternative 2 be selected as the preferred alternative:

Measure NC-11 Prior to or during construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that mitigation for permanent impacts on

jurisdictional features and Pickleweed Mats will be accomplished through the purchase of in-lieu fees, mitigation bank credits at an appropriate mitigation bank, on-site replanting, or other methods deemed acceptable by the regulatory agencies. Mitigation will be at a minimum ratio of 1:1; however, the final ratio will be established through consultation and coordination with regulatory agencies during the permitting process. If on-site replanting is implemented, the revegetated area would be within the Project Study Area and would be larger than the impacted area to account for potential variability in restoration success.

Findings for all potentially significant impacts identified will be considered prior to Project approval. A Statement of Overriding Consideration is not required.

S-5 COORDINATION WITH PUBLIC AND OTHER AGENCIES

S-5.1 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications are required for project construction:

Table S-2: Permits and Approvals

Agency	Permits/Licenses/ Agreements/Certifications	Status
U.S. Army Corps of Engineers	Preliminary Jurisdictional Determination for jurisdictional wetlands and waters of the United States Section 404 Permit for filling or dredging waters of the United States	Should Alternative 2 be selected, a Preliminary Jurisdictional Delineation application will be submitted following selection of the preferred alternative. Nationwide Permit 14 pre-construction notification will be submitted during the design phase, if required.
California Department of Fish and Wildlife	Section 1602 Lake or Streambed Alteration Agreement	Should Alternative 2 be selected, applications for 1602 permit expected after final environmental document approval, if required.
California Water Resources Board and Los Angeles Regional Water Quality Control Board	Section 401 certification/waste discharge requirements	Should Alternative 2 be selected, application for Section 401 certification expected after final environmental document approval, if required.
Federal Highway Administration	Air Quality Conformity Determination	Request for determination to be submitted following selection of a preferred alternative.
State Historic Preservation Officer (SHPO)	National Historic Preservation Act Section 106 consultation Section 4(f) *De Minimis*	SHPO concurred with the Finding of No Adverse Effect and was notified of the *de minimis* determination under Section 4(f).

Agency	Permits/Licenses/ Agreements/Certifications	Status
Los Angeles County Flood Control District	Floodplain Encroachment Permit	During final design phase and prior to construction.
California Department of Transportation	Encroachment Permit	During final design phase and prior to construction.
City of Carson	Encroachment Permit	During final design phase and prior to construction.
California Transportation Commission (CTC)	CTC vote to approve funds	Following the approval of the final environmental document and posting the Notice of Determination with the State Clearinghouse, CTC will vote to approve funding for the proposed Project.

CTC=California Transportation Commission; SHPO=State Historic Preservation Officer

S-5.2 Notice of Preparation

The scoping process for the proposed Project was initiated with the preparation and distribution of a Notice of Preparation (NOP). The NOP was posted at the State Clearinghouse (2024090192) and circulated to public agencies and other interested parties in compliance with Section 15082 of the CEQA Guidelines on September 6, 2024. The NOP notified the public of the EIR/EA being prepared, along with scoping meeting locations and ways in which the public could provide comments on the Project. A Notice of Extended Scoping Comment Period was filed on September 30, 2024, extending the original 30-day scoping comment period to a total of 46 days from September 6, 2024, through October 21, 2024. Scoping meetings were held on September 17, 2024 (virtually); September 19, 2024 (virtually); and October 16, 2024 (in-person).

A total of 76 formal comments were received during the formal scoping period from 66 individuals, agencies, or organizations. This included comments from the following agencies and elected officials:

- California Department of Fish and Wildlife
- California Air Resources Board
- U.S. Environmental Protection Agency
- Office of Congresswoman Nanette Barragan
- City of Carson Mayor Lula Davis-Holmes
- City of Carson Councilmember Cedric L. Hicks, Sr.

Of the comments received, 41 comments supported Alternative 1 (No-Build), 4 comments supported Alternative 2 (Auxiliary Lanes and Complete Streets), and 42 comments supported Alternative 3 (TSM/TDM). The following areas of controversy have been identified for the Project: alternatives considered, purpose and need, freeway widening and increased capacity, and potential environmental impacts during construction, including traffic, emissions, and noise.

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Chapter 1 Proposed Project

1.1 INTRODUCTION

The Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the California Department of Transportation (Caltrans) and the South Bay Cities Council of Governments (SBCCOG), proposes to improve freeway operations and safety along both directions of Interstate 405 (I-405) from Wilmington Avenue (postmile [PM] 9.6) to Main Street (PM 12.6) in the City of Carson (City), Los Angeles County, California. Associated improvements would include the addition of auxiliary lanes between on- and off-ramps to improve weaving, merging, and diverging operations and the implementation of Transportation System Management (TSM), Transportation Demand Management (TDM), and Complete Streets elements.

The I-405 from Wilmington Avenue to Main Street Improvements Project (Project) is subject to both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans, as assigned by the Federal Highway Administration (FHWA), is the lead agency under NEPA. Caltrans is also the lead agency under CEQA. Metro is the Project Sponsor. SBCCOG is a funding partner.

The proposed Project is included in the Final Adopted 2025 Federal Transportation Improvement Program (FTIP), the Southern California Association of Governments (SCAG) 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and the 2025 FTIP with identification (ID) number LA9918955. The Project description provided in the Final Adopted 2025 FTIP with the Adopted 2020-2045 RTP/SCS, which was approved on December 16, 2024, states the following:

> Add auxiliary lane between interchange on- and off-ramps at five locations along northbound and southbound I-405 between Wilmington Avenue (PM 9.6) and Main Street (PM 12.6)

The Project listing is planned to be updated in the 2027 FTIP to match the proposed Project, prior to completion of the Final EIR/EA.

Funding for the proposed Project is expected from a combination of local sales tax funding, and potentially federal, State, and other funding sources for future phases. The current phase (i.e., Project Approval and Environmental Document [PA&ED]) is funded through Measure R, which is a 0.5 cent sales tax within Los Angeles County that was passed in 2008 to fund transportation projects and programs. The estimated cost for each Build Alternative is provided in Section 1.4.5, *Unique Features of Build Alternatives*.

1.1.1 Project Location

The proposed Project is located in the City of Carson, Los Angeles County (see Figure 1.1-1). The Project Study Area includes the limits of proposed safety and operational improvements along I-405 between the Wilmington Avenue (PM 9.6) and Main Street (PM 12.6) interchanges, approximately 3.0 miles in length (see Figure 1.1-2). Temporary signage areas are also proposed within the Project Study Area between the Union Pacific Dolores Yard (PM 8.9) and Figueroa Street (PM 12.7) interchanges.

1.1.2 Project Setting

The proposed Project is located in a generally urban setting and is surrounded by a mix of residential, commercial, recreational, light and heavy industrial, and public uses. Notable land uses adjacent to I-405 include Kia, Honda, and Nissan dealerships in the vicinity of the Wilmington Avenue interchange; a Go Kart track and a residential neighborhood near the Carson Street interchange; a plant nursery near the 213th Street interchange; commercial and residential neighborhoods (single family and mobile homes) between Carson Street and Avalon Boulevard; and a Porsche Experience Center and race track near the Main Street interchange. There are also currently vacant lands adjacent to I-405 between the Avalon Boulevard and Main Street interchanges.

The concrete-lined Dominguez Channel flows adjacent to northbound (NB) I-405 and passes under I-405 at the Wilmington Avenue interchange. A Southern California Edison (SCE) utility corridor also runs adjacent to NB I-405, between Carson Street and Avalon Boulevard. A Union Pacific Railroad freight rail line runs adjacent to the Wilmington Avenue southbound (SB) on-ramp.

1.1.2.1 Existing Facility

In Los Angeles County, I-405 is generally a 45-mile north-south route and is considered a bypass route to Interstate 5 (I-5) (Santa Ana/Golden State Freeway), providing intra-regional and inter-regional access between Orange and Los Angeles Counties. This segment of I-405 was originally constructed in the early 1960s with four general purpose (GP) lanes in each direction. The freeway was restriped in the 1990s to accommodate a high-occupancy vehicle (HOV) lane in each direction.

Within the Project Study Area, I-405 is a controlled-access freeway trending in the northwest-southeast direction. It consists of one HOV lane and four GP lanes in each direction. An existing auxiliary lane is provided in each direction between the Avalon Boulevard and Interstate 110 (I-110) interchanges. The existing I-405 HOV facility has controlled access with four NB and three SB HOV ingress/egress access points within the Project Study Area. The HOV lanes are 11 feet wide and are generally separated from the GP lanes via a 1- to 4-foot-wide striped buffer. The existing GP lanes are 11 feet wide.

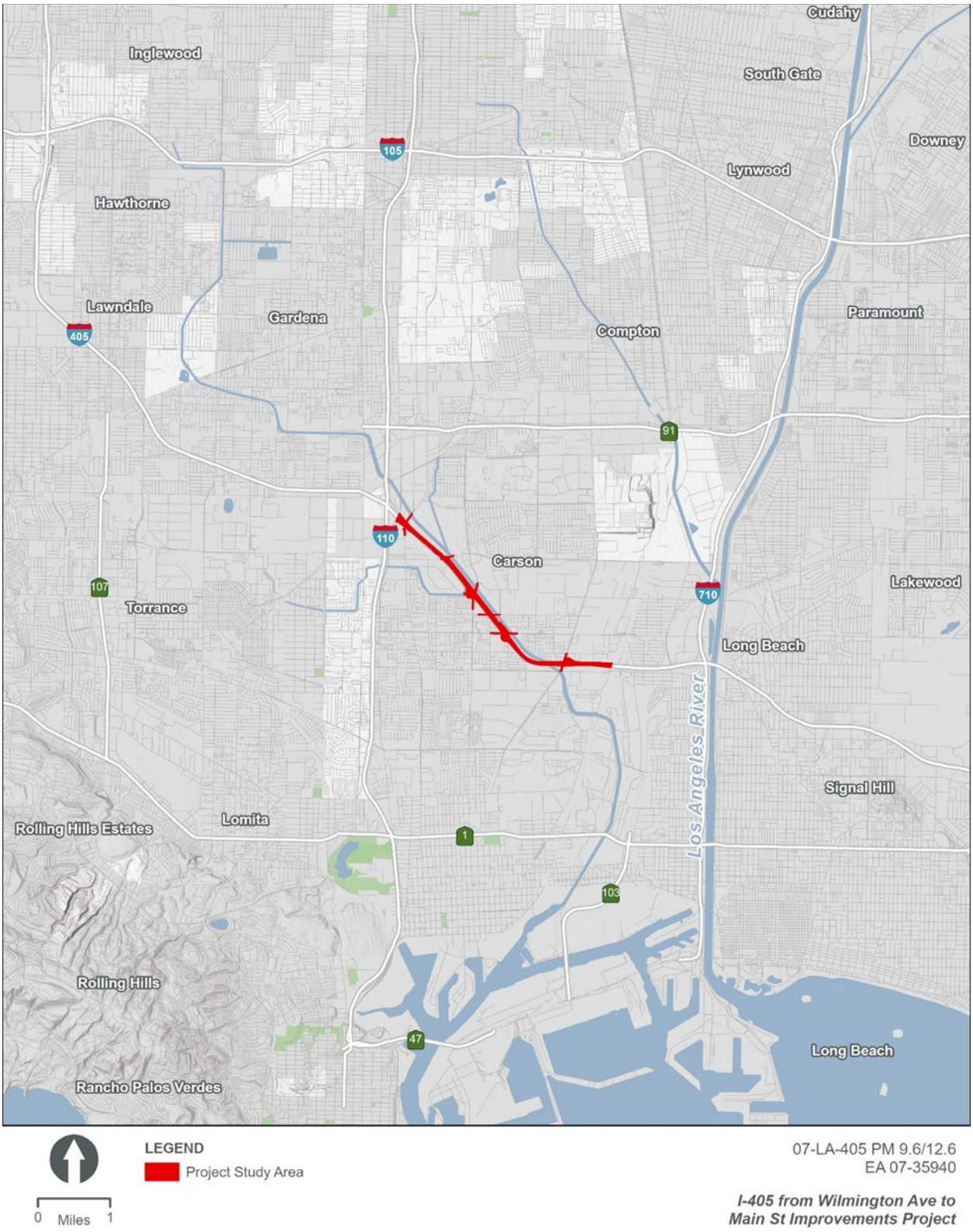

Figure 1.1-1: Regional Location and Project Vicinity

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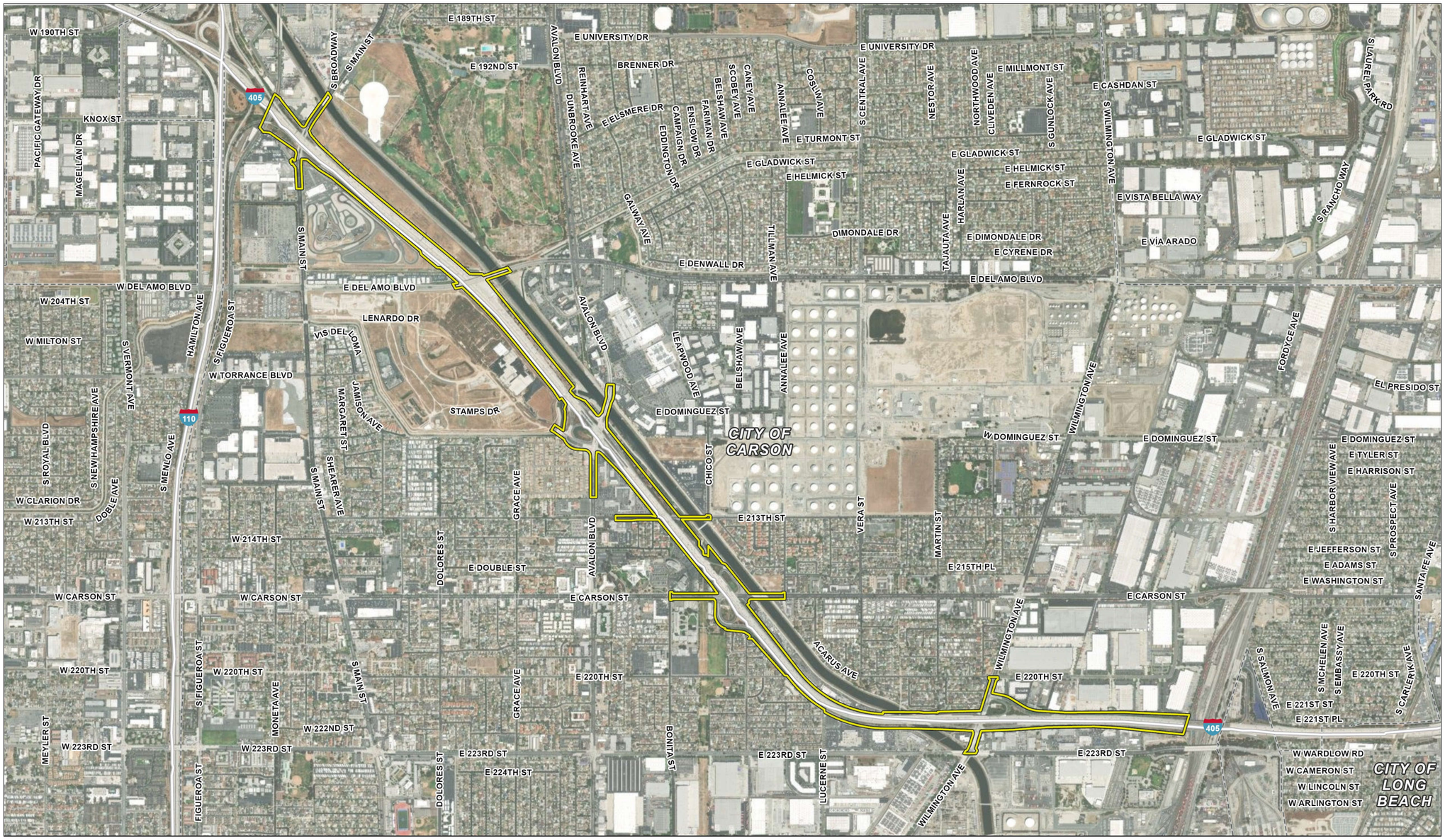

LEGEND
Project Study Area
City Boundary

0 Miles 0.25

07-LA-405 PM 9.6/12.6
EA 07-35940

I-405 from Wilmington Ave to Main St Improvements Project

Figure 1.1-2: Project Study Area

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Within the Project Study Area, there are four I-405 interchanges, listed from south to north:

- I-405/Wilmington Avenue interchange
- I-405/Carson Street interchange
- I-405/Avalon Boulevard interchange
- I-405/Main Street interchange

The I-405/Wilmington Avenue interchange was recently reconstructed under a separate project (EA 07271), which widened Wilmington Avenue and the interchange ramps and added a new NB direct on-ramp to alleviate congestion and improve the interchange operations. The interchange reconstruction as part of EA 07271 was completed in 2019.

There is a truck weigh station in the NB and SB direction of I-405 between the Avalon Boulevard and Main Street interchanges (located approximately between PM 11.7 in the NB direction and PM 12.2 in the SB direction) with on- and off-ramps exclusively for trucks. There is also a bi-directional California Highway Patrol (CHP) enforcement area in the median of I-405 near Del Amo Boulevard.

All local interchange ramps within the Project Study Area are currently metered and operational. In addition, the Carson Street SB on-ramp and Main Street SB on-ramp have HOV preferential lanes, which are not metered.

1.1.2.2 Existing Arterials

Table 1.1-1 provides a list of local arterials in the vicinity of I-405 along with their respective roadway classification, jurisdiction, and general roadway configuration for arterials immediately adjacent to or within the Project Study Area.

1.1.2.3 Existing Structures

Table 1.1-2 provides a list of existing structures along I-405 within the Project Study Area.

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Table 1.1-1: Existing Arterials

No.	Arterial	OC/UC	Roadway Classification	Thru Lane	Sidewalk	Bike Class	Truck Route	Design Speed (mph)	Posted Speed (mph)
1	Wilmington Avenue	UC	Major	4D	NB/SB	-	Yes	45	40
2	Carson Street	UC	Major	4D	EB/WB	II	Yes	45	40
3	213th Street	UC	Secondary	2U	EB/WB	III	No	45	30
4	Avalon Boulevard	UC	Major	4D	NB	-	Yes	45	35
5	Del Amo Boulevard	OC	Major	6D	EB/WB	II	Yes	45	45
6	Main Street	UC	Major	4D	-	III	Yes	45	45
7	Recreation Road	-	Local	2U	None	-	No	25	NP
8	E. 220th Street	-	Collector	2U	SB only	-	No	25	NP

Source: (City of Carson 2023)
D = divided roadway; EB = eastbound; mph = miles per hour; NB = northbound; No. = number; NP = none posted in vicinity of I-405; OC = overcrossing; SB = southbound; U = undivided roadway; UC = undercrossing; WB = westbound

Table 1.1-2: Existing Structures

No.	Postmile (PM)	Structure Name	Bridge No.	Vertical Clearance
1	9.56	Wilmington Avenue UC	53-1167	15 feet 6 inches
2	9.76	Dominguez Channel	53-1166	-
3	10.54	Carson Street UC	53-1171	-
4	10.88	213th Street UC	53-1263	14 feet 7 inches
5	11.22	Avalon Boulevard UC	53-1164	-
6	11.39	Torrance Lateral Channel	53-1513	-
7	11.80	Del Amo Boulevard OC	53-2831	-
8	12.60	Main Street UC	53-1135	15 feet 4 inches

Source: (Caltrans 2026a)
No. = number; OC = overcrossing; PM = postmile; UC = undercrossing

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1.2 PURPOSE AND NEED

1.2.1 Purpose

The purpose of the proposed Project is to provide improved connectivity and increase multi-modal access within the Project corridor and to accommodate the planned economic development within the Project Study Area.

The purpose of the proposed Project is to:

- Improve traffic time reliability and safety along I-405 between Wilmington Avenue and Main Street for all users in the corridor by improving freeway operations.
- Provide equitable, accessible, and sustainable travel options to the regional transportation system through improvements to safety, mobility, accessibility, and connectivity for bicyclists and pedestrians at local interchanges along I-405 between Wilmington Avenue and Main Street.
- Promote economic connectivity within the City for existing and planned retail and commercial uses and improve accessibility for goods movement.

1.2.2 Need

The need of the proposed Project is to improve traffic operations and safety for vehicle traffic and to provide additional access and connectivity for pedestrians and bicyclists at local interchanges throughout the Project corridor.

1.2.2.1 Operations

Several freeway mainline segments and freeway/ramp junctions within the Project Study Area currently operate at substandard level of service (LOS) F during AM and PM peak hours. These poor operating conditions are the result of insufficient freeway capacity and turbulence at the ramp entrances and exits. Under the Design Year (2050), additional freeway segments and ramp junctions are projected to further decline to LOS F, if no improvements are made.

According to the *Traffic Operations Analysis Report* (TOAR) for the proposed Project (Fehr and Peers 2025), which was completed in November 2025, traffic congestion along I-405 is typically present on weekdays between 5:00 AM and 11:00 AM and between 12:00 PM and 8:00 PM on SB I-405. Traffic congestion is attributed to bottlenecks downstream of the Project Study Area.

Traffic congestion along this segment of I-405 can also be attributed to existing geometric design deficiencies within the Project Study Area. The current nonstandard interchange spacing between the Carson Street and Avalon Boulevard interchanges, as well as the close proximity of the Avalon Boulevard and Main Street interchanges to the I-110 system interchange, contribute to poor operating conditions in some freeway

segments. Nonstandard weaving distances between some of the interchange on- and off-ramps also contribute to disruptions of traffic flow resulting in weaving congestion and unsafe operations.

1.2.2.2 Safety and Connectivity

Traffic collision data was assembled from Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) – Transportation System Network (TSN). Data was collected for a 3-year period from April 1, 2020, to March 31, 2023, for the I-405 mainline segment within the Project Study Area. As discussed further below, traffic collision data reveals that rear-end and sideswipe collisions are predominant on the NB and SB I-405 mainline, accounting for approximately 75 percent of all collision types, which is indicative of congested conditions due to nonstandard weaving distances between interchange on- and off- ramps. Rear-end and sideswipe collisions on freeways are generally related to operational factors, such as congestion, speed differentials between lanes, and poor merging movements or abrupt lane changes. The proposed auxiliary lanes are expected to reduce the potential for collisions by improving the operations and operational safety of the mainline at the merge and diverge points of the ramps.

There is also a current lack of connectivity for pedestrians and bicyclists at local interchanges along I-405 between the Wilmington Avenue and Main Street interchanges, including pedestrian paths along Main Street and bicycle paths along Main Street, Avalon Boulevard, Carson Street, and Wilmington Avenue. Some of these routes do not have Americans with Disabilities Act (ADA)-compliant sidewalks, curb ramps, and crosswalks. System continuity and ADA-compliant routes are needed in these areas to improve the effectiveness and safety of multimodal travel at the local interchanges within the Project Study Area.

Collision data presented in Table 1.2-1 compares actual collision rates on the mainline segment to their corresponding state average rates. Collision rates are expressed as the number of accidents per million vehicle miles. The data indicates that two mainline segments on SB I-405 and three mainline segments on NB I-405 within the Project Study Area have actual collision rates that are higher than the state averages for similar facility types.

Table 1.2-1: Interstate 405 Mainline Collision Rate Summary by Severity

Facility	Collision Rate[1]					
	Actual			State Average		
	Fatality	Fatal + Injury	Total	Fatality	Fatal + Injury	Total
SB I-405 Mainline Segments						
SB I-405 Wilmington Ave On-Ramp to Alameda St Off-Ramp (PM 8.7 to PM 9.4)	0.000	**0.42**	0.97	0.004	0.4	1.29
SB I-405 Wilmington Ave Off-Ramp to Wilmington Ave On-Ramp (PM 9.4 to PM 9.7)	0.000	0.34	0.98	0.003	0.35	1.10

Facility	Collision Rate[1]					
	Actual			State Average		
	Fatality	Fatal + Injury	Total	Fatality	Fatal + Injury	Total
SB I-405 Carson St On-Ramp to Wilmington Ave Off-Ramp (PM 9.7 to PM 10.4)	0.000	0.19	0.77	0.003	0.34	1.09
SB I-405 Carson St Off-Ramp to Carson St On-Ramp (PM 10.4 to PM 10.5)	0.000	0.07	0.21	0.003	0.34	1.09
SB I-405 Avalon Blvd NB On-Ramp to Carson St Off-Ramp (PM 10.5 to PM 11.1)	0.000	0.17	0.53	0.003	0.35	1.10
SB I-405 Avalon Blvd SB On-Ramp to Avalon Blvd NB On-Ramp (PM 11.1 to PM 11.3)	0.000	0.16	0.74	0.003	0.35	1.11
SB I-405 Avalon Blvd Off-Ramp to Avalon Blvd SB On-Ramp (PM 11.3 to PM 11.4)	0.000	0.27	0.81	0.003	0.36	1.13
SB I-405 Weigh Station On-Ramp to Avalon Blvd Off-Ramp (PM 11.4 to PM 12.0)	**0.013**	0.36	1.22	0.004	0.41	1.33
SB I-405 Weigh Station Off-Ramp to Weigh Station On-Ramp (PM 12.0 to PM 12.2)	0.000	0.41	1.19	0.004	0.41	1.32
SB I-405 Main St On-Ramp to Weigh Station Off-Ramp (PM 12.2 to PM 12.4)	0.000	0.24	0.95	0.004	0.41	1.32
NB I-405 Mainline Segments						
NB I-405 Alameda St On-Ramp to Wilmington Ave Off-Ramp (PM 8.7 to PM 9.4)	**0.012**	**0.30**	0.76	0.004	0.40	1.29
NB I-405 Wilmington Ave Off-Ramp to Wilmington Ave loop On-Ramp (PM 9.4 to PM 9.5)	0.000	0.20	0.59	0.003	0.35	1.11
NB I-405 Wilmington Ave loop On-Ramp to Carson St Off-Ramp (PM 9.5 to PM 10.6)	0.000	0.23	0.80	0.003	0.34	1.09
NB I-405 Carson St Off-Ramp to Carson St On-Ramp (PM 10.6 to PM 10.7)	0.000	0.15	0.59	0.003	0.35	1.10
NB I-405 Carson St On-Ramp to Avalon Blvd Off-Ramp (PM 10.7 to PM 11.1)	0.000	0.16	0.70	0.003	0.35	1.10
NB I-405 Avalon Blvd Off-Ramp to Avalon Blvd On-Ramp (PM 11.1 to PM 11.4)	0.000	0.08	0.48	0.003	0.35	1.12
NB I-405 Avalon Blvd On-Ramp to Weigh Station Off-Ramp (PM 11.4 to PM 11.7)	0.000	0.09	0.39	0.004	0.41	1.31
NB I-405 Weigh Station Off-Ramp to Weigh Station On-Ramp (PM 11.7 to PM 11.9)	0.013	0.22	0.52	0.004	0.41	1.32
NB I-405 Weigh Station On-Ramp to Main St Off-Ramp (PM 11.9 to PM 12.5)	0.000	0.20	0.77	0.004	0.41	1.32
NB I-405 Main St Off-Ramp to I-110 NB Off-Ramp (PM 12.5 to PM 12.6)	0.000	**0.45**	1.08	0.004	0.38	1.20

Facility	Collision Rate[1]					
	Actual			State Average		
	Fatality	Fatal + Injury	Total	Fatality	Fatal + Injury	Total
NB I-405 I-110 NB Off-Ramp to 0.066 mi north of I-110 NB Off-Ramp (PM 12.6 to PM 12.7)	0.000	**0.54**	**1.40**	0.003	0.36	1.13

Source: Caltrans District 7 TASAS Table B, April 2020 – March 2023 (Fehr and Peers 2025)
Notes:
[1] The collision rate is reported as the number of collisions per million vehicle miles on mainline segments and the number of collisions per million vehicles for ramps.
[2] Bold font indicates that the actual collision rate is higher than the state average collision rate for a similar facility type.
Ave = Avenue; Blvd = Boulevard; I-110 = Interstate 110; I-405 = Interstate 405; NB = northbound; PM = postmile; SB = southbound; St = Street

Collision data was collected for a 3-year period from April 1, 2020, to March 31, 2023, for seven I-405 interchange ramps within the Project Study Area. Collision rates are expressed as the number of accidents per million vehicles. Similar to mainline collision data, ramp collision rates were compared to the state average rates for similar facilities. Table 1.2-2 presents collision data for each ramp location. The data indicates that eight ramp locations have actual collision rates that are higher than state average rates.

Table 1.2-2: Interstate 405 Ramp Collision Rate Summary by Severity

Facility	Collision Rate[1]					
	Actual			State Average		
	Fatality	Fatal + Injury	Total	Fatality	Fatal + Injury	Total
I-405/Alameda St Interchange Ramps						
SB I-405 Off-Ramp to Alameda St (PM 8.7)	0.000	**0.68**	**3.39**	0.007	0.42	1.37
NB I-405 On-Ramp from Alameda St (PM 8.7)	0.000	0.04	0.08	0.002	0.26	0.76
I-405/Wilmington Ave Interchange Ramps						
NB I-405 Off-Ramp to Wilmington Ave (PM 9.4)	0.000	0.14	0.29	0.003	0.38	1.04
SB I-405 On-Ramp from Wilmington Ave (PM 9.4)	0.000	0.18	0.59	0.002	0.23	0.63
NB I-405 On-Ramp from Wilmington Ave (PM 9.5)	0.000	**0.50**	**1.00**	0.002	0.26	0.76
SB I-405 Off-Ramp to Wilmington Ave (PM 9.7)	0.000	0.00	1.00	0.003	0.38	1.04
I-405/Carson St Interchange Ramps						
SB I-405 On-Ramp from Carson St (PM 10.4)	0.000	**0.24**	**0.84**	0.002	0.23	0.63
SB I-405 Off-Ramp to Carson St (PM 10.5)	0.000	0.00	**1.84**	0.006	0.41	1.26
NB I-405 Off-Ramp to Carson St (PM 10.6)	0.000	0.15	1.23	0.006	0.41	1.26

Facility	Collision Rate[1]					
	Actual			State Average		
	Fatality	Fatal + Injury	Total	Fatality	Fatal + Injury	Total
NB I-405 On-Ramp from Carson St (PM 10.7)	0.000	0.20	0.41	0.002	0.23	0.63
I-405/Avalon Blvd Interchange Ramps						
SB I-405 On-Ramp from NB Avalon Blvd (PM 11.1)	0.000	**0.50**	**2.52**	0.004	0.23	0.70
NB I-405 Off-Ramp to Avalon Blvd (PM 11.1)	0.000	0.13	0.52	0.006	0.31	0.90
SB I-405 On-Ramp from SB Avalon Blvd (PM 11.3)	0.000	0.21	**1.05**	0.002	0.26	0.76
NB I-405 On-Ramp from Avalon Blvd (PM 11.4)	0.000	**0.39**	**1.65**	0.002	0.23	0.63
SB I-405 Off-Ramp to Avalon Blvd (PM 11.4)	0.000	0.04	0.09	0.003	0.38	1.04
I-405/Truck Scales Interchange Ramps						
NB I-405 Off-Ramp to Truck Scales (PM 11.7)	0.000	0.00	0.00	0.004	0.28	1.85
NB I-405 On-Ramp from Truck Scales (PM 11.9)	0.000	0.00	0.00	0.001	0.09	0.68
SB I-405 On-Ramp from Truck Scales (PM 12.0)	0.000	0.00	0.00	0.001	0.09	0.68
SB I-405 Off-Ramp to Truck Scales (PM 12.2)	0.000	0.00	0.00	0.004	0.28	1.85
I-405/Main St Interchange Ramps/Frontage Road						
SB I-405 On-Ramp from Main St (PM 12.4)	0.000	0.19	0.58	0.002	0.23	0.63
NB I-405 Off-Ramp to Main St (PM 12.5)	0.000	0.18	0.89	0.003	0.38	1.04
NB I-405 Frontage Rd from Main St to Figueroa St (PM 12.6)	0.000	0.61	1.82	0.036	1.12	2.01
I-405/I-110 Interchange Ramps						
SB I-405 On-Ramp from I-110 (PM 12.7)	0.000	0.00	0.19	0.005	0.15	0.46
NB I-405 Off-Ramp to I-110 (PM 12.7)	**0.021**	**0.12**	0.29	0.002	0.10	0.31

Source: Caltrans District 7 TASAS Table B, April 2020 – March 2023 (Fehr and Peers 2025)
Notes:
[1] The collision rate is reported as the number of collisions per million vehicle miles on mainline segments and the number of collisions per million vehicles for ramps.
[2] Bold font indicates that the actual collision rate is higher than the state average collision rate for a similar facility type.
Ave = Avenue; Blvd = Boulevard; I- = Interstate; NB = northbound; PM = Postmile; Rd = Road; SB = southbound; St = Street

Evaluation of freeway mainline collision data based by collision type, presented in Table 1.2-3, reveals that the most common type of collision reported for both the NB and SB I-405 mainlines was rear-end, followed by sideswipe, hit object, and other.

Table 1.2-3: Interstate 405 Mainline Collision Summary by Collision Type

Facility	Collision Type			
	Rear-End	Sideswipe	Hit Object	Other
SB I-405 Mainline Segments				
SB I-405 Wilmington Ave On-Ramp to Alameda St Off-Ramp (PM 8.7 to PM 9.4)	49%	28%	17%	6%
SB I-405 Wilmington Ave Off-Ramp to Wilmington Ave On-Ramp (PM 9.4 to PM 9.7)	53%	39%	8%	0%
SB I-405 Carson St On-Ramp to Wilmington Ave Off-Ramp (PM 9.7 to PM 10.4)	65%	18%	15%	3%
SB I-405 Carson St Off-Ramp to Carson St On-Ramp (PM 10.4 to PM 10.5)	33%	67%	0%	0%
SB I-405 Avalon Blvd NB On-Ramp to Carson St Off-Ramp (PM 10.5 to PM 11.1)	53%	38%	9%	0%
SB I-405 Avalon Blvd SB On-Ramp to Avalon Blvd NB On-Ramp (PM 11.1 to PM 11.3)	42%	37%	16%	5%
SB I-405 Avalon Blvd Off-Ramp to Avalon Blvd SB On-Ramp (PM 11.3 to PM 11.4)	60%	7%	20%	13%
SB I-405 Weigh Station On-Ramp to Avalon Blvd Off-Ramp (PM 11.4 to PM 12.0)	56%	29%	15%	0%
SB I-405 Weigh Station Off-Ramp to Weigh Station On-Ramp (PM 12.0 to PM 12.2)	47%	31%	22%	0%
SB I-405 Main St On-Ramp to Weigh Station Off-Ramp (PM 12.2 to PM 12.4)	61%	39%	0%	0%
NB I-405 Mainline Segments				
NB I-405 Alameda St On-Ramp to Wilmington Ave Off-Ramp (PM 8.7 to PM 9.4)	42%	35%	16%	6%
NB I-405 Wilmington Ave Off-Ramp to Wilmington Ave loop On-Ramp (PM 9.4 to PM 9.5)	22%	56%	11%	11%
NB I-405 Wilmington Ave loop On-Ramp to Carson St Off-Ramp (PM 9.5 to PM 10.6)	43%	32%	24%	2%
NB I-405 Carson St Off-Ramp to Carson St On-Ramp (PM 10.6 to PM 10.7)	9%	18%	9%	64%
NB I-405 Carson St On-Ramp to Avalon Blvd Off-Ramp (PM 10.7 to PM 11.1)	46%	43%	6%	6%
NB I-405 Avalon Blvd Off-Ramp to Avalon Blvd On-Ramp (PM 11.1 to PM 11.4)	41%	29%	18%	12%
NB I-405 Avalon Blvd On-Ramp to Weigh Station Off-Ramp (PM 11.4 to PM 11.7)	53%	35%	12%	0%
NB I-405 Weigh Station Off-Ramp to Weigh Station On-Ramp (PM 11.7 to PM 11.9)	43%	14%	36%	7%
NB I-405 Weigh Station On-Ramp to Main St Off-Ramp (PM 11.9 to PM 12.5)	49%	30%	21%	0%
NB I-405 Main St Off-Ramp to I-110 NB Off-Ramp (PM 12.5 to PM 12.6)	71%	25%	4%	0%

Facility	Collision Type			
	Rear-End	Sideswipe	Hit Object	Other
NB I-405 I-110 NB Off-Ramp to 0.066 mi north of NB I-110 Off-Ramp (PM 12.6 to PM 12.7)	38%	54%	0%	8%

Source: Caltrans District 7 TASAS Table B, April 2020 – March 2023 (Fehr and Peers 2025)
Ave = Avenue; Blvd = Boulevard; I- = Interstate; NB = northbound; PM = Postmile; SB = southbound; St = Street; % = percentage

Evaluation of freeway ramp collision data presented in Table 1.2-4 reveals that the most common collision types reported for the ramps within the Project Study Area are rear-end, followed by sideswipe, hit object, and other.

Table 1.2-4: Interstate 405 Ramp Collision Summary by Collision Type

Facility	Collision Type			
	Rear-End	Sideswipe	Hit Object	Other
I-405/Alameda St Interchange Ramps				
SB I-405 Off-Ramp to Alameda St (PM 8.7)	20%	20%	40%	20%
NB I-405 On-Ramp from Alameda St (PM 8.7)	50%	50%	0%	0%
I-405/Wilmington Ave Interchange Ramps				
NB I-405 Off-Ramp from Wilmington Ave (PM 9.4)	33%	0%	33%	33%
SB I-405 On-Ramp from Wilmington Ave (PM 9.4)	20%	70%	10%	0%
NB I-405 On-Ramp from Wilmington Ave (PM 9.5)	50%	0%	0%	50%
SB I-405 Off-Ramp to Wilmington Ave (PM 9.7)	25%	25%	25%	25%
I-405/Carson St Interchange Ramps				
SB I-405 On-Ramp from Carson St (PM 10.4)	14%	29%	43%	14%
SB I-405 Off-Ramp to Carson St (PM 10.5)	33%	17%	33%	17%
NB I-405 Off-Ramp to Carson St (PM 10.6)	13%	13%	75%	0%
NB I-405 On-Ramp from Carson St (PM 10.7)	50%	0%	0%	50%
I-405/Avalon Blvd Interchange Ramps				
SB I-405 On-Ramp from NB Avalon Blvd (PM 11.1)	60%	20%	0%	20%
NB I-405 Off-Ramp to Avalon Blvd (PM 11.1)	50%	25%	25%	0%
SB I-405 On-Ramp from SB Avalon Blvd (PM 11.3)	80%	20%	0%	0%
NB I-405 On-Ramp from Avalon Blvd (PM 11.4)	24%	33%	10%	33%
SB I-405 Off-Ramp to Avalon Blvd (PM 11.4)	0%	50%	50%	0%
I-405/Truck Scales Interchange Ramps				
NB I-405 Off-Ramp to Truck Scales (PM 11.7)	0%	0%	0%	0%
NB I-405 On-Ramp from Truck Scales (PM 11.9)	20%	20%	0%	60%
SB I-405 On-Ramp from Truck Scales (PM 12.0)	0%	0%	0%	0%
SB I-405 Off-Ramp to Truck Scales (PM 12.2)	0%	0%	0%	0%
I-405/Main St Interchange Ramps/Frontage Road				
SB I-405 On-Ramp from Main St (PM 12.4)	67%	0%	0%	33%

Facility	Collision Type			
	Rear-End	Sideswipe	Hit Object	Other
NB I-405 Off-Ramp to Main St (PM 12.5)	40%	20%	20%	20%
NB I-405 Frontage Rd from Main St to Figueroa St (PM 12.6)	0%	33%	0%	67%
I-405/Route 110 Interchange Ramps				
SB I-405 On-Ramp from Route 110 (PM 12.7)	0%	0%	100%	0%
NB I-405 Off-Ramp to Route 110 (PM 12.7)	21%	14%	64%	0%

Source: Caltrans District 7 TASAS Table B, April 2020 – March 2023 (Fehr and Peers 2025)
Ave = Avenue; Blvd = Boulevard; I- = Interstate; NB = northbound; PM = Postmile; Rd = Road; SB = southbound; St = Street; % = percentage

1.2.2.3 Regional Goods Movement

Key commercial and retail uses located along the I-405 corridor within the City include the SouthBay Pavilion Mall and surrounding retail plaza and the Kia, Honda, Nissan, and Toyota car dealerships. Industrial uses are located primarily along the I-405 corridor at Main Street and Wilmington Avenue, approximately 5 miles north of the Ports of Los Angeles and Long Beach. In addition, planned retail areas, such as the District at South Bay, a new 168-acre development located south of Del Amo Boulevard and north of East 213th Street, would include light industrial uses and community commercial uses within the district.

Based on vehicle classification counts collected on local roadways adjacent to I-405 in 2023, truck traffic along local roadways ranges between 2 and 24 percent of daily traffic. On Wilmington Avenue, truck traffic accounts for 16 to 24 percent of daily traffic, reflecting over 2,500 daily truck trips (Fehr and Peers 2025). Based on the 2022 Caltrans Traffic Census Program, the average annual daily truck percentage along I-405 between Interstate 710 (I-710) and I-110 ranges from 3 to 5 percent. As a result, improvements to existing ramp storage and weave zone operations along the freeway at ramp entrances and exits are needed to provide improved connections to these key commercial and retail areas, in addition to supporting regional goods movement along the I-405 corridor.

1.2.3 Independent Utility and Logical Termini

FHWA regulations (23 Code of Federal Regulations 771.111[f]) state that an action evaluated shall:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope.

2. Have independent utility or independent significance. It would be usable and require a reasonable expenditure even if no additional transportation improvements in the area were made.

3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Independent utility is a term used to describe a project that would be both usable and a reasonable expenditure, even if no additional transportation improvements in the area were made. A logical terminus describes the logical beginning and end for an improvement project, including the beginning and end of its potential effects. A problem of segmentation may arise if a transportation need extends throughout an entire corridor, but environmental issues and transportation need are discussed for only a segment of the corridor.

Based on the scope of the proposed Project, the Project would have logical termini and independent utility:

- **Logical Termini:** The Project's PM limits extend from Wilmington Avenue (PM 9.6) to Main Street (PM 12.6) on I-405. The Project Study Area also includes temporary signage areas that extend beyond the PM limits, shown in Figure 1.1-2. The Project Study Area, or area of influence, is the geographic area necessary for conducting safety and operational analysis for interchange access improvements under 23 Code of Federal Regulations (CFR) Part 624.5. This includes all components of the highway network that could be operationally impacted by the proposed Project. The Project purpose is to improve safety and traffic time reliability along I-405 between the Wilmington Avenue and Main Street interchanges, as described further in Section 1.2.1, *Purpose*, and Section 1.2.2, *Need*. As described in the TOAR (Fehr and Peers 2025), existing non-standard interchange spacing occurs along I-405 within the Project Study Area between the I-405/Carson Street and I-405/Avalon Boulevard interchanges and between the I-405/Carson Street and I-405/Wilmington Avenue interchanges in both directions, which creates nonstandard weave lengths. By improving the nonstandard weave lengths between these interchanges in the NB and SB directions of I-405, traffic time reliability would be improved within the Project Study Area. In addition, there are existing gaps in bicycle lanes where local roads intersect I-405 within the City. The proposed Project would address the safety and transportation deficiencies for multimodal access within the Project Study Area by reducing potential collisions and enhancing safety. Therefore, based on the discussion above, the proposed Project would have logical termini, consistent with the proposed Project's purpose and need.

- **Independent Utility:** The proposed Project would be functionally independent and would not restrict consideration or depend upon other reasonably foreseeable transportation improvements from other separately planned or funded projects to meet the proposed Project's stated purpose and need. If other planned projects or foreseeable transportation improvements (e.g., the NB I-110 Truck Bypass Connector [EA 35710K]) are not constructed, the proposed Project would still address the need to improve operations and safety between Wilmington Avenue and Main Street and provide additional access and connectivity for pedestrians and bicycles at local interchanges. The proposed

Project would result in improvements to current traffic conditions without any additional transportation improvements being required in the area; and thus, have independent utility.

1.3 PROJECT DESCRIPTION

The Project Study Area is located in the City of Carson, Los Angeles County, along both directions of I-405 from Wilmington Avenue (PM 9.6) to Main Street (PM 12.6) (see Figure 1.1-1). Within the Project Study Area, I-405 is a controlled-access freeway trending in the northwest-southeast direction and consists of two HOV lanes (one HOV lane in each direction), eight GP lanes (four GP lanes in each direction), and an auxiliary lane in each direction between Avalon Boulevard and I-110. Metro, in cooperation with Caltrans and the SBCCOG, proposes to add auxiliary lanes between on- and off-ramps to improve weaving, merging, and diverging operations and implement TSM, TDM, and Complete Streets elements within the Project Study Area. The purpose of the Project is to provide improved connectivity and increase multi-modal access within the Project corridor and to accommodate the planned economic development within the Project Study Area. The need of the proposed Project is to improve traffic operations and safety for vehicle traffic and to provide additional access and connectivity for pedestrians and bicyclists at local interchanges throughout the Project corridor.

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1.4 PROJECT ALTERNATIVES

Three alternatives are being evaluated as part of the proposed Project: one No-Build Alternative (Alternative 1) and two Build Alternatives (Alternatives 2 and 3). The Build Alternatives were designed to satisfy the proposed Project's purpose and need, while avoiding and/or minimizing environmental impacts.

1.4.1 Alternative 1 – No-Build

Under Alternative 1, no improvements would take place on I-405, and select local roads would not receive the proposed Complete Streets updates for all modes of transportation. As traffic demand increases throughout the I-405 corridor, traffic operations of the existing roadway network and interchanges would further deteriorate, which could result in increases in congestion, vehicle delays, vehicle-operating costs, and vehicle emissions due to slower operating speeds on the freeway and local roads. Alternative 1 would not address or alleviate the forecasted operational issues on this highway segment of I-405 within the City; therefore, Alternative 1 would not satisfy the purpose and need of the proposed Project.

1.4.2 Alternative 2 – Auxiliary Lanes and Complete Streets

Under Alternative 2, two auxiliary lanes on NB I-405 and two auxiliary lanes on SB I-405 would be provided. Each proposed auxiliary lanes would be less than 1 mile long. Alternative 2 would also construct and implement Complete Streets elements as well as TSM and TDM systems throughout the Project Study Area (see Figure 1.4-1).

1.4.3 Alternative 3 – Transportation Systems Management and Transportation Demand Management

Under Alternative 3, the proposed Project would construct and implement Complete Streets elements as well as TSM and TDM systems throughout the Project Study Area (see Figure 1.4-1). Alternative 3 would not include the construction or extension of any auxiliary lane.

1.4.4 Common Design Features of the Build Alternatives

1.4.4.1 Complete Streets

The Build Alternatives would include non-motorized and pedestrian facilities in accordance with *Caltrans' Complete Streets – Director's Policy* (DP) *37*. DP 37 establishes a policy within the State Highway System that recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system. This policy document defines the term "Complete Streets" as, "a transportation facility that is planned, designed, constructed, operated, and maintained to provide comfortable and convenient mobility, and improve accessibility and connectivity to essential community

*Note: Transportation System Management/Transportation Demand Management (TSM/TDM) improvements are proposed throughout the Project Study Area under Alternatives 2 and 3.

Figure 1.4-1: Proposed Project

destinations for all users, regardless of whether they are travelling as pedestrians, bicyclists, public transportation riders, or drivers." The intent is to provide a network of Complete Streets for travelers of all ages and abilities to safely and efficiently move along.

The Build Alternatives would implement Complete Street elements at the following locations:

- I-405 and Main Street intersection
- I-405 and Avalon Boulevard intersection
- I-405 and Carson Street intersection
- I-405 and Wilmington Avenue intersection
- 213th Street under I-405

The following Complete Streets elements would be implemented at these locations:

- Upgrade existing sidewalks and crosswalks to be ADA-compliant
- Construct new sidewalks in locations that do not currently have sidewalks
- Improve existing bicycle facilities by connecting City bikeways that have gaps within State right-of-way (ROW) or providing new bikeways along local roadways
- Improve lighting under bridges for pedestrian and bicycle crossings
- Provide enhanced pedestrian and bicycle crossings by restriping existing crosswalks to high visibility crosswalks and eliminating free-right turns
- Support future transit and multi-modal trail connections within the area

1.4.4.2 Transportation Systems Management and Transportation Demand Management

All NEPA documents for projects on the State Highway System are required to include a discussion of viable TSM and TDM alternatives. TSM strategies increase the efficiency of existing facilities. They are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Examples of TSM strategies include ramp metering, auxiliary lanes, turning lanes, reversible lanes, and traffic signal coordination. TSM also promotes automobile, public and private transit, ridesharing program, and bicycle and pedestrian improvements as elements of a unified urban transportation system. Modal alternatives integrate multiple forms of transportation modes, such as pedestrian, bicycle, automobile, rail, and mass transit.

TDM focuses on regional means of reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. It facilitates higher vehicle occupancy or reduces traffic congestion by expanding the traveler's transportation options in terms of travel method, travel time, travel route, travel costs, and the quality and convenience of the travel experience. A typical activity would be providing funds to regional agencies that are actively promoting ridesharing, maintaining rideshare databases, and providing limited rideshare services to employers and individuals.

The following TSM and TDM strategies are proposed under the Build Alternatives to increase efficiency along the existing corridor and local roadway facilities without increasing the number of through lanes:

- Freeway management system strategy focused on improving traffic management, traffic surveillance, safety, and signage to improve motorist wayfinding. Proposed elements include updating closed-circuit television systems, implementing fixed closed-circuit television cameras at ramp termini, upgrading ramp metering at study interchanges, improving ramp metering control systems, and adding vehicle detection devices.

- Arterial system strategy focused on improving traffic flow on the arterials adjacent to freeways with specialized treatment in addition to intersection enhancements and optimizations. Proposed elements include signal enhancements and optimizations at ramp termini and signal controller and equipment upgrades.

- Intelligent Transportation Systems strategy focused on improving information gathering and dissemination, traffic management, and communication to help travelers navigate the transportation system. Proposed elements include changeable message sign upgrades, traffic monitoring station upgrades, and completion/relocation of communication lines.

1.4.4.3 Ramp Metering

The Wilmington Avenue, Carson Street, Avalon Boulevard, and Main Street on-ramps currently have ramp metering systems. The Build Alternatives would maintain the ramp metering systems at these locations and would not introduce any new ramp metering along I-405.

1.4.4.4 California Highway Patrol Enforcement Areas

The Build Alternatives would include the addition of a CHP enforcement area at the SB Carson Street on-ramp.

1.4.4.5 Structural Improvements

The Build Alternatives would include structural improvements along I-405. Specially designed ground anchor walls would be required to accommodate local street improvements at Carson Street and Avalon Boulevard (see Table 1.4-1). In addition, a retaining wall is proposed along the SB Carson Street on-ramp to accommodate the proposed CHP enforcement area (see Table 1.4-2).

Table 1.4-1: Proposed Structural Improvements (Alternatives 2 and 3)

Bridge No.[1]	Wall No.	Proposed Work
53-XXXX	RW 557	264-foot Ground Anchor Wall
53-XXXX	RW 593	234-foot Ground Anchor Wall

Source: (Caltrans 2026a)
Notes:
[1] Bridge numbers for new ground anchor walls will be assigned during final design.
No. = number; RW = retaining wall

Table 1.4-2: Proposed Retaining Wall (Alternatives 2 and 3)

Wall No.	Location	Begin PM	End PM
RW 047	SB Carson Street On-Ramp	10.38	10.48

Source: (Caltrans 2026a)
No. = number; PM = postmile; SB = southbound; RW = retaining wall

1.4.4.6 Pavement Widening

The Build Alternatives would require pavement widening to accommodate local street improvements, as summarized in Table 1.4-3.

Table 1.4-3: Proposed Pavement Widening (Alternatives 2 and 3)

PM	Location	Type of Work
9.57	Wilmington Avenue	Complete Streets Improvement (approximately 720 feet)
10.55	Carson Street	Complete Streets Improvement (approximately 700 feet)
10.88	213th Street	Complete Streets Improvement (approximately 620 feet)
11.24	Avalon Boulevard	Complete Streets Improvement (approximately 1,650 feet)
12.60	Main Street	Complete Streets Improvement (approximately 1,500 feet)

Source: (Caltrans 2026a)
PM = postmile

1.4.4.7 Utilities

A preliminary utility investigation has been conducted for the proposed Project, which indicates that the proposed local street improvements under the Build Alternatives have the potential to impact utilities. These include facilities owned by AT&T, California Water Service Company, Exxon Mobil, SCE, Southern California Gas, Shell Oil Company, and Verizon.

The Build Alternatives would potentially affect local or minor distribution facilities located within the local frontage roads and cross streets within the Project Study Area. Impacted facilities are typically relocated by placing the new facility parallel to the existing facility or adjusting the access to grade to avoid conflict while keeping the utility service intact. Final disposition of each utility facility will be established in cooperation with Caltrans and the utility owners during the Plans, Specifications, and Estimates (PS&E) or final design phase. Approval from Caltrans Headquarters for exceptions to Caltrans' Utility Encroachment Policy would be required for any variances to the Utility Encroachment

Policy, as described within the Encroachment Permit Manual, and would be sought during the PS&E phase of the proposed Project.

1.4.4.8 Design Exceptions

Caltrans establishes and supports the consistent application of highway design standards to ensure optimal safety for the traveling public and for those who construct, operate, and maintain the State Highway System. Exceptions to these standards are necessary when the proposed design deviates from the standard design features presented in Caltrans' *Highway Design Manual* (HDM) (Caltrans 2025).

Table 1.4-4 summarizes the proposed Boldface and Underline nonstandard design features associated with the Build Alternatives. Chapter 21 of the Caltrans *Project Development Procedures Manual* (Caltrans 2026b) defines Boldface Standards, which are design features or elements considered most essential to achieving the overall design objectives. Underlined Standards are important and allow greater flexibility in application to accommodate design constraints or be compatible with local conditions on resurfacing or rehabilitation projects. Comprehensive lists of potential design exceptions for each Build Alternative have been prepared for the proposed Project, including a risk assessment and a summary justification for acceptance of each of the nonstandard features. A Design Standard Decision Document documenting Caltrans' approval of nonstandard features will be completed after a preferred alternative is selected for the proposed Project.

Table 1.4-4: Summary of Nonstandard Design Features (Alternatives 2 and 3)

Boldface Nonstandard Design Features	Underlined Nonstandard Design Features

• Sight distance (horizontal and vertical)
• Standards for superelevation
• Standards for curvature – Minimum Radius
• Lane width
• Shoulder width
  ○ Cross slopes
  ○ Median width
  ○ Horizontal clearances
  ○ Vertical clearances
• Design vehicles
• Interchange spacing
• Freeway entrances and exits
• Minimum weaving length
• Access control
	• Sidewalk width
	• Decision sight distance
	• Superelevation transition
	• Superelevation runoff
	• Compound curves
	• Standards for grade
	• Vertical curves
	• Pavement reductions
	• Curb type
	• Side slopes
	• Angle of intersection
	• Turning traffic
	  ○ Corner sight distance
	  ○ Ramp entrance and exit standards

Source: (Caltrans 2026a)

1.4.4.9 Context-Sensitive Solutions

The FHWA defines context-sensitive solutions as a collaborative, interdisciplinary approach that involves all stakeholders in providing a transportation facility that fits its setting. Context-sensitive solutions would be developed consistent with Caltrans standard design specifications. Under the Build Alternatives, the proposed Project

would accommodate pedestrians and bicyclists along the local roadways consistent with portions of the City's Active Transportation Plan, *Connecting Carson* (2015), including green paint for bikeways, high-visibility crosswalks at pedestrian crossings, and improved lighting and enhanced signing and pavement markings to improve safety for bicyclists and pedestrians and support the overall visual character and quality of the Project Study Area.

1.4.4.10 Standardized Measures

This Project contains a number of standardized measures which are employed on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the proposed Project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2.

Table 1.4-5 identifies some of the standardized measures that have been deemed applicable to Alternatives 2 and 3 and identifies them as Project design features or "PF." Project design features may also be referenced in the Environmental Consequences sections found in Chapter 2, *Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures*.

Caltrans' *Construction Site Best Management Practices* (BMP) *Manual* provides guidance on the selection and implementation of BMPs into construction projects within State ROW. Table 1.4-5 references BMPs from the current BMP Manual that may be applicable to the proposed Project, pending final design. Caltrans requires contractors to identify and utilize these BMPs in the preparation of their stormwater pollution prevention plans or water pollution control program. However, use of BMPs is not mandatory because individual BMPs may not be appropriate in every situation.

Table 1.4-5 references Caltrans Standard Specifications. Caltrans Standard Specifications refers to construction contract language that is standard to Caltrans construction projects across the state. These specifications are updated regularly. Caltrans' current Standard Specifications can be found on Standard Plans, Standard Specifications and Contract Item Codes | Caltrans.

Where applicable, Caltrans Standard Special Provisions (SSP) and Non-Standard Special Provisions (nSSP) may be referenced in Table 1.4-5 or in the Avoidance, Minimization, Mitigation, and Abatement Measures sections found in Chapter 2. SSPs are project-specific requirements in a construction contract that are used enough throughout the state that they become "standard." In some instances, SSPs can have minor edits tailored to individual projects. Conversely, nSSPs are project-specific requirements in a construction contract that are neither a Standard Specification nor an SSP.

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Table 1.4-5: Project Design Features (Alternatives 2 and 3)

Project Design Features	
Utilities and Emergency Services	
PF-UT-1	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that all public utility lines, pipes, and cables disturbed or removed to accommodate the proposed Project be replaced or relocated within the Project limits to continue to meet the needs of residents and businesses in the community. In addition, arrangements must be made to avoid disruption of utility services. If interruption in service is unavoidable, notice must be given, and proper arrangements will be made with residents and businesses.
PF-UT-2	To ensure that emergency response times are not disrupted during construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that local emergency services are informed of the proposed Project construction schedule, lane closures (if any), and detour plans (if any) at least 2 weeks in advance of any detour plan or lane closure being implemented throughout construction.
Traffic and Transportation	

PF-TR-1	During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will prepare a Transportation Management Plan (TMP) for the proposed Project. The California Department of Transportation's (Caltrans) Resident Engineer will review and approve the TMP. The TMP will include, but is not limited to, the following measures:
	• A Maintenance of Traffic Plan will be established that provides at least one lane of traffic in each direction on roads during construction.
	• Local access will be maintained to businesses and residential properties at all times.
	• Pedestrian access points to businesses, parks, and schools within the construction area will be maintained throughout the construction period, where feasible. If usual access points are lost, provisions for alternative access to the affected parcels will be made. Appropriate signage will be placed to inform pedestrians and bicyclists of the alternative access to local businesses. Disabled access will be maintained during construction where feasible.
	• During construction, appropriate signage and advanced warning will be developed and displayed to direct pedestrian, bicycle, and vehicular traffic alternate routes.
	• During construction, Metro will establish an information field office near the construction site. The field office will serve the following purposes:
	  ○ Provide information pertaining to construction and lane closures;
	  ○ Notify property owners, residents, and businesses of major construction activities (e.g., utility relocation/disruption, rerouting of delivery trucks);
	  ○ Provide information via Metro website.

Project Design Features	
Cultural Resources	
PF-CUL-1	During construction, if archaeological resources are discovered within or near construction limits, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that cultural resources are not disturbed and immediately: 1. Stop all work within a 60-foot radius of the discovery 2. Secure the area 3. Notify the Engineer Caltrans will investigate the discovery. No archaeological resources are to be moved or taken from the job site. No work shall resume within the radius of discovery until authorized. If ordered, resources will be furnished to assist in the investigation or recovery of archaeological resources.
PF-CUL-2	During construction, if human remains are discovered, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that the California Health and Safety Code (H&SC) Section 7050.5 be followed. H&SC Section 7050.5 states that further disturbances and activities will stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the Native American Heritage Commission, who, pursuant to Public Resources Code (PRC) Section 5097.98, will then notify the most likely descendant (MLD). At this time, the person who discovered the remains will contact the Caltrans District 7 Environmental Branch Chief and Caltrans District 7 Native American Coordinator so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.
Water Quality	
PF-WQ-1	During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that best management practices (BMP) as described in the Caltrans Storm Water Management Plan, will be designed and implemented to reduce the discharge of pollutants from the Caltrans storm drain system to the maximum extent practicable. Permanent treatment controls will be implemented, where applicable, to address the stormwater impacts caused by the proposed Project. Erosion control measures also will be used, where applicable, to address site soil stabilization and reduce deposition of sediment in adjacent surface waters. Typical measures will include the application of soil stabilizers such as soil binders, rock slope protection, velocity dissipation devices, and flared end sections for culverts.
PF-WQ-2	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that existing slopes will only be disturbed when necessary to minimize erosion from slopes; cut and fill areas will be minimized to reduce slope lengths; soils or formations that will be particularly difficult to restabilize will be avoided; cut and fill areas will be minimized to allow re-vegetation and limit erosion to pre-construction rates; slopes will be rounded and shaped to reduce concentrated flow; and the construction schedule will consider minimizing soil disturbing work during the rainy season.

Project Design Features	
PF-WQ-3	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure compliance with the California Statewide Permit (Order No. 2012-0011-DWQ, NPDES No. CAS 000003 as amended by Order WQ 2014-0006-EXEC, Order WQ 2014-0077-DWQ, Order WQ 2015-0036-EXEC, and Order WQ 2017-0026-EXEC). Coverage under the Construction General Permit (CGP) for storm water discharges associated with construction activities and land disturbance activities (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-006-DWQ, NPDES No. CAS 000002) will also be required during the construction phase of the proposed Project. The proposed Project will require notification to the State Water Quality Control Board via the Stormwater Multiple Application Tracking System. Project registration documents will be filed, and a Waste Discharge Identification number will then be assigned.
PF-WQ-4	Construction of the proposed Project will have a Disturbed Soil Area of more than 1 acre; and therefore, a Construction General Permit (CGP) will be required. Therefore, prior to construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that a stormwater pollution prevention plan (SWPPP) be prepared in compliance with the requirements of the CGP. The SWPPP will identify the sources of pollutants that may affect the quality of stormwater and include construction site BMPs to control pollutants such as sediment control, catch basin inlet protection, construction materials management, and non-stormwater BMPs.
PF-WQ-5	During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that the proposed Project's construction schedules be phased to minimize construction taking place during the rainy season as much as possible.
PF-WQ-6	A Rapid Stability Assessment is required per the Caltrans National Pollutant Discharge Elimination System (NPDES) Permit because the proposed Project includes a "Water of the US" stream crossing and will result in a net new impervious surface area greater than 1 acre, with a portion of the new impervious surface located within the Threshold Drainage Area as defined by the Caltrans Hydromodification Requirements Guidance. During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Resident Engineer, or designated contractor, will ensure that a Rapid Stability Assessment be prepared.
PF-WQ-7	During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that the Design Pollution Prevention (DPP) Strategy for the proposed Project will include permanent measures to reduce pollution discharges. Such measures include reducing erosion and managing non- stormwater discharges after construction is completed. DPP best management practices (BMP) utilized will minimize runoff, maximize infiltration, and reduce erosion. Proposed DPP BMPs may include energy dissipation devices, slope/surface protection systems, concentrated flood conveyance systems, and the preservation of existing vegetation. DPP BMPs will be further investigated in the PS&E phase.

Project Design Features	
PF-WQ-8	During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that energy dissipation devices are included at culvert outlets wherever appropriate. All transitions between culvert outlets, headwalls, wingwalls, and channels will be smoothed to reduce turbulence and scour, if needed. Offsite flows will be managed in a manner which will mimic the existing drainage network and not inundate the roadway surface or any other drainage systems. The proposed Project will require coordination with all drainage facilities that will be affected, including those that are owned by local agencies.
PF-WQ-9	There may be limited areas where slopes are greater than 2:1 (rise/run). During construction, in order to reduce concentrated flows in these areas, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that slopes are rounded or shaped accordingly. The preservation of existing vegetation will be maximized to help reduce the amount of clearing and grubbing that will be required on slopes. Disturbed slopes will be revegetated per the Erosion Control or Permanent Landscaping Plans approved by Caltrans District 7 Landscape Architect. In addition, prior to construction, Caltrans' Resident Engineer, or designated contractor, will ensure that an Erosion Control Plan will be prepared prior to any soil disturbance activities.
PF-WQ-10	During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that permanent measures for reducing post-construction erosion potential will include the establishment of vegetation and/or the use of appropriate erosion control measures. Examples of permanent erosion control measures include placing hydraulic mulch along slopes and other areas susceptible to erosion to prevent increased downstream sediment loads and to aid in the establishment of vegetation. Hard surfaces, such as rock slope protection, will be proposed at culvert outlets to dissipate energy and minimize erosion. Additional details regarding vegetated surface, hard surfaces, and erosion control will be further investigated during the PS&E phase.
PF-WQ-11	During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that the preservation of existing vegetation be maximized to help reduce the amount of clearing and grubbing that will be required under the proposed Project. Existing vegetation and landscaping, are to be protected in place, and areas of clearing and grubbing will be shown on the proposed Project's plans during the PS&E phase.
PF-WQ-12	During the Plans, Specifications, and Estimates (PS&E), the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that the proposed Project will implement permanent treatment best management practices (BMP) that include biofiltration swales and Design Pollution Prevention (DPP) Infiltration Areas along northbound and southbound I-405, adjacent to the Dominguez Channel. Treatment BMPs will be further investigated during the PS&E phase.

Project Design Features	
PF-WQ-13	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that the proposed Project is in compliance with the Risk Level (RL) 2 monitoring requirements of the Construction General Permit (CGP). RL 2 projects require visual inspections weekly, pre-qualifying precipitation event, during qualifying precipitation event, and post-qualifying precipitation event from a Qualified Stormwater Pollution Prevention Plan (SWPPP) Developer, Qualified SWPPP Practitioner (QSP), or be trained by the QSP. Furthermore, weekly visual inspections of the Best Management Practices (BMPs) would be conducted to ensure that they are properly installed and maintained. Visual inspections from a QSP must be conducted within 72 hours prior to any weather pattern that is forecasted to have a 50 percent or greater chance of 0.5 inches or more in a 24-hour period. If extended forecast precipitation data (greater than three days) is available from the National Weather Service, the pre-precipitation event inspection may be done up to 120 hours in advance. The QSP will also conduct visual inspections at least once every 24-hour period during Qualifying Precipitation Events, and post-Qualifying Precipitation Event visual inspections within 96 hours of each Qualifying Precipitation Event if 0.5 inches or more precipitation is measured during the duration of the Qualifying Precipitation Event using the onsite rain gauge. The QSP will also conduct visual inspections during scheduled site operating hours, and with each required inspection, will develop and complete an inspection checklist in accordance with Attachment D of the CGP.
Hazard and Hazardous Waste	
PF-HW-1	During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure unpaved soils adjacent to the existing roadway be tested for aerially deposited lead (ADL) according to Caltrans ADL testing guidelines. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed in accordance with Caltrans Standard Specifications, Section 14-11.08 Material Containing Hazardous Waste Concentrations of Aerially Deposited Lead (2018) and under the July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control. This ADL Agreement allows such soils to be safely reused within the Project limits, as long as all requirements of the ADL Agreement are met.
PF-HW-2	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that the removal of any wooden telephone poles will be conducted in accordance with Appendix XII of the California Code of Regulations, Title 22, Division 4.5, Chapter 11.
PF-HW-3	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure polychlorinated biphenyls sampling will be conducted for any pole- or pad-mounted transformers and substations.
PF-HW-4	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure Underground Service Alert (i.e., DigAlert) will be notified at least 2 days prior to ground-disturbing activities to enable all utility owners within the proposed Project's disturbance limits to identify the locations of known underground transmission lines and facilities.
PF-HW-5	Prior to construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure the preparation of the following plans to protect worker health and safety and the environment:

Project Design Features	
	• **Health and Safety Plan:** A certified industrial hygienist will prepare a Health and Safety Plan to guide all construction activities. The Health and Safety Plan will identify all potential hazards and contain specific procedures for encountering expected and unexpected contaminants. It will prescribe safe work practices, contaminant monitoring, personal protective equipment, emergency response procedures, and safety training requirements to protect constructions workers and third parties. • **Construction Contaminant Management Plan:** A soils and groundwater Construction Contaminant Management Plan will be prepared. This plan will include procedures for contaminant monitoring and identification, temporary storage, handling, treatment, and disposal of waste and materials. • **Construction Contingency Plan:** A Construction Contingency Plan will be prepared with guidance provided in Chapter 7, Environmental Stewardship, of the Caltrans Construction Manual (Caltrans 2017a), for the handling and dealing of unknown hazards. This plan will include provisions for responding to events such as the discovery of unidentified underground storage tanks (UST), hazardous material, petroleum hydrocarbons, or hazardous or solid waste during construction. This plan will address UST decommissioning, field screening, and material testing methods; management requirements; and health and safety requirements for construction workers.
PF-HW-6	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that the proposed Project will avoid building over any plugged and abandoned wells. However, if any wells, including any plugged, abandoned, or unrecorded wells, are damaged or uncovered during excavation or grading, remedial plugging operations may be required. If such damage or discovery occurs, the Department of Conservation's Division of Oil, Gas, and Geothermal Resource district office will be contacted to obtain information on the requirements and approval to perform remedial operations.
Noise	
PF-NOI-1	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that the contractor will use an alternative warning method instead of a sound signal unless required by safety laws.
PF-NOI-2	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that the contractor will equip all internal combustion engines with the manufacturer recommended muffler and will not operate any internal combustion engine on the job site without the appropriate muffler.
PF-NOI-3	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that all construction equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers consistent with manufacturers' standards during all proposed Project site excavation and grading on site.
PF-NOI-4	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that all stationary construction equipment will be placed so that emitted noise is directed away from noise sensitive locations nearest the Project site.

Project Design Features	
PF-NOI-5	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that construction vehicle staging areas and equipment maintenance areas will be located as far as possible from sensitive receptor locations.
Animal Species	
PF-BIO-1	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that a qualified biologist be present on site to ensure that any native or exotic vegetation removal or tree trimming activities occur outside of the nesting bird season (February 15 through September 1). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist will conduct a preconstruction survey to identify the locations of nests. Should nesting birds be found, the biologist will establish an exclusionary buffer. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active. Nesting bird protection measures will be implemented in accordance with Caltrans Standard Specification 14-6.03B, Bird Protection.
PF-BIO-2	During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that a designated biologist be on site to ensure that all work on existing bridges with potential habitat conducted between February 15 and September 1 will include a survey for bird nests. If bird nests are found, all inactive bird nests will be removed prior to February 1 of that year, before commencement of the nesting season, under guidance and observation of a qualified biologist. Removal of nests that are under construction must be repeated as frequently as necessary to prevent nest completion or until a nest exclusion device is installed (such as netting or a similar mechanism that keeps birds from building nests). If a nest has been completed and eggs have been laid, a qualified biologist will establish an exclusionary buffer. This buffer will be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active. Nesting bird protection measures will be implemented in accordance with Caltrans Standard Specification 14-6.03B, Bird Protection.
Energy	
PF-EN-1	During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that the proposed Project incorporates the use of energy-efficient lighting, such as light emitting diode (LED) traffic signals and streetlights, to the extent feasible. LED lights consume 10 percent of the electricity of traditional lights.

Project Design Features	
PF-EN-2	During construction, Caltrans or a designated contractor will ensure that construction contractors implement the following *Standard Specifications* 6-1.03, 14-9, and 14-10 to reduce fossil fuel consumption. • 6-1.03, Local Materials, requires certain local construction materials be obtained or produced from a source in the work vicinity. Sourcing local materials reduces transport vehicle travel and associated energy consumption. • 14-9, Air Quality, requires compliance with local air district rules and regulations. Compliance with certain air district rules may reduce equipment or vehicle fuel consumption. • 14-10, Solid Waste Disposal and Recycling, requires, among other things, recycling and reusing nonhazardous waste and excess materials, where practicable. Recycling and reusing material reduces consumption of native resources and may reduce energy consumption from material production and transport.
Aesthetics	
PF-VIS-1	During the Plans, Specifications, and Estimates (PS&E) Phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that a highway landscape plan be prepared that identifies all opportunities to use areas within the Caltrans right-of-way (ROW) for full landscaping consistent with the Caltrans *Highway Design Manual* (*HDM*). This plan will incorporate all applicable procedures and requirements detailed in the Caltrans *HDM*, Section 902.1, and policies of the City of Carson's General Plan, as applicable. Selected vegetation and irrigation will utilize drought-resistant landscaping and recycled water, when feasible, and incorporate native and climate appropriate vegetation, when appropriate, as outlined in California Streets and Highways Code Section 92.3 within the State ROW. The following avoidance and minimization measures from *Caltrans Visual Impact Assessment (VIA) Handbook* (2023) will be considered in the plan: • Work with communities directly affected by a project to avoid disrupting key cultural landmarks that provide orientation and facilitate the pattern of the community. • Wherever practicable, install utilities underground to avoid visual impacts. In areas with sensitive environmental resources, undergrounding may not be feasible. • Avoid wetlands, environmentally sensitive habitat areas, or other resources through the establishment of environmentally sensitive areas. • Work with the Project Design Team (PDT) to design the project to fit the roadway into the existing landscape. • Minimize tree and vegetation removals, especially with native trees and vegetation, to maintain the existing visual character. • Provide contour grading that integrates with the natural terrain, where feasible. • Revegetate disturbed areas with regionally appropriate drought-tolerant or native plant material, as appropriate.

ADL = aerially deposited lead; BMP = best management practices; Caltrans = California Department of Transportation; CGP = Construction General Permit; DPP = design pollution prevention; HDM= Highway Design Manual; LED = light emitting diodes; Metro = Los Angeles County Metropolitan Transportation Authority; MLD = most likely descendant; National Pollutant Discharge Elimination System = NPDES; PDT=Project Development Team; Public Resources Code = PRC; PS&E = Plans, Specifications, and Estimate; QSP= Qualified SWPPP Practitioner; ROW = right-of-way; RL= Risk Level; SCAQMD = South Coast Air Quality Management District; SWPPP = stormwater pollution prevention plan; TMP = Transportation Management Plan; UST = underground storage tanks; VIA=Visual Impact Assessment.

1.4.5 Unique Features of Build Alternatives

1.4.5.1 Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would add 12-foot-wide auxiliary lanes, which would require the widening of pavement, realignment of on- and off-ramps, and the construction of retaining walls and noise barriers (see Figure 1.4-2 through Figure 1.4-5). Alternative 2 would also implement the TSM, TDM, and Complete Street elements described in Section 1.4.4, *Common Design Features of the Build Alternatives*.

Auxiliary Lanes

An auxiliary lane is defined by the American Association of State Highway and Transportation Officials as the portion of the roadway adjoining the traveled way for speed change, turning, weaving, truck climbing, maneuvering of entering and leaving traffic, and other purposes supplementary to through-traffic movement (FHWA 2017).

Alternative 2 includes the construction of auxiliary lanes at the following locations:

- **Along NB I-405:**
    - Between the Wilmington Avenue NB on-ramp and the Carson Street NB loop off-ramp (0.69 mile long)
    - Between the Carson Street NB on-ramp and the Avalon Boulevard NB off-ramp (0.30 mile long)
- **Along SB I-405:**
    - Between the Avalon Boulevard SB on-ramp and the Carson Street SB loop off-ramp (0.39 mile long)
    - Between the Carson Street SB on-ramp and the Wilmington Avenue SB off-ramp (0.56 mile long)

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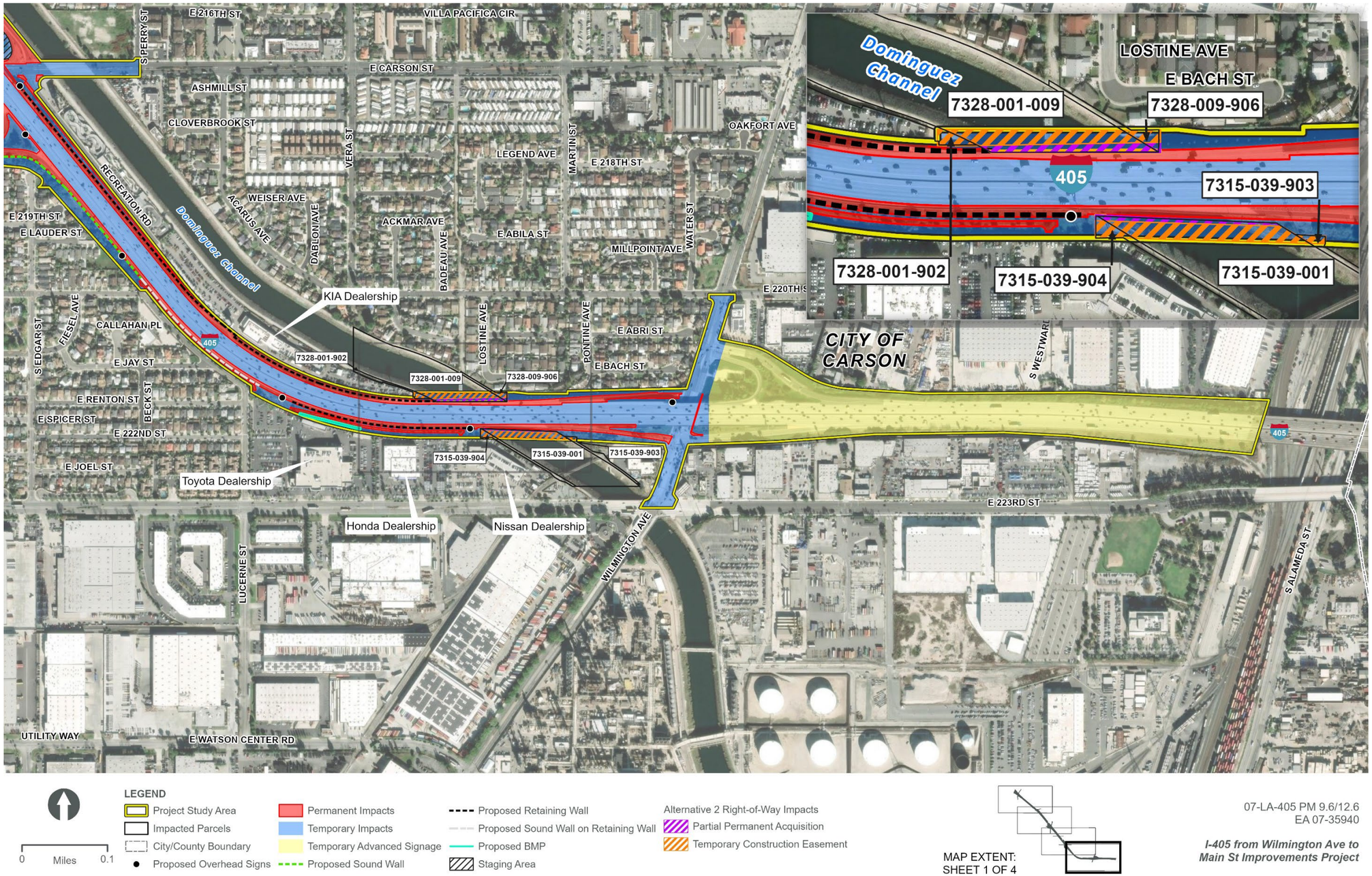

Figure 1.4-2: Alternative 2 – Project Features and Impact Areas (Sheet 1 of 4)

LEGEND

- Project Study Area
- Impacted Parcels
- Proposed Overhead Signs
- Permanent Impacts
- Temporary Impacts
- Temporary Advanced Signage
- Proposed Sound Wall
- Proposed Retaining Wall
- Proposed Tieback Wall
- Proposed Sound Wall on Retaining Wall
- Proposed BMP
- Staging Area

0 Miles 0.1

MAP EXTENT:
SHEET 2 OF 4

07-LA-405 PM 9.6/12.6
EA 07-35940

I-405 from Wilmington Ave to Main St Improvements Project

Figure 1.4-3: Alternative 2 – Project Features and Impact Areas (Sheet 2 of 4)

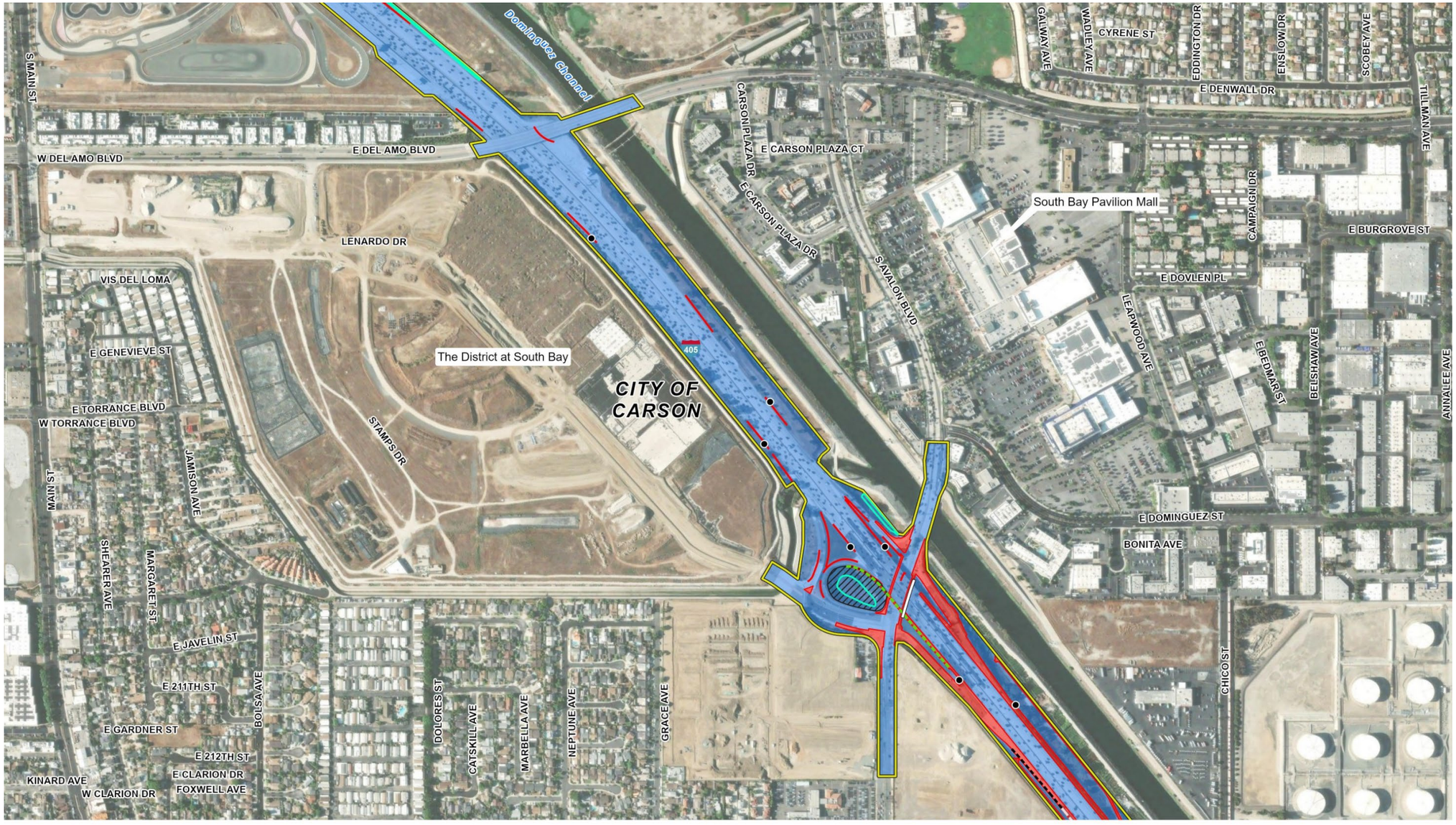

Figure 1.4-4: Alternative 2 – Project Features and Impact Areas (Sheet 3 of 4)

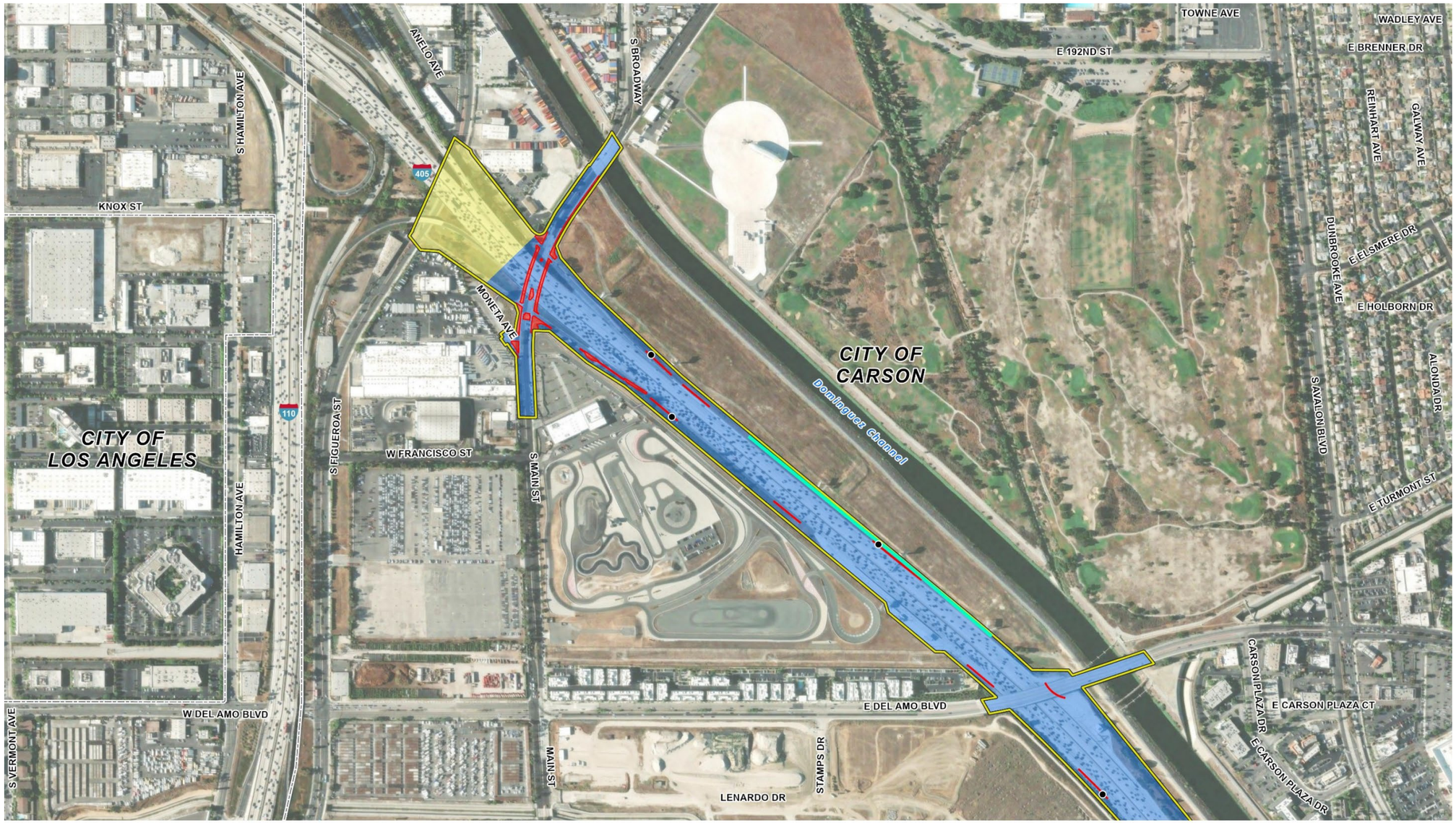

Figure 1.4-5: Alternative 2 – Project Features and Impact Areas (Sheet 4 of 4)

Structural Improvements

In addition to the ground anchor walls summarized in Table 1.4-1, Alternative 2 would require widening three existing bridges along I-405 (see Table 1.4-6). Alternative 2 also includes a seismic retrofit of the Carson Street Undercrossing (UC) (Bridge No. 53-1171).

Table 1.4-6: Proposed Structural Improvements (Alternative 2)

Bridge No.	Structure Name	Proposed Work
53-1263	213th St UC	5 feet 0 inches Left (SB) Widen 12 feet 8 inches Right (NB) Widen
53-1171	Carson Street UC	10 feet 9 inches Left (SB) Widen 7 feet 0 inches Right (NB) Widen
53-1164	Avalon Bridge UC	8 feet 6 inches Left (SB) Widen
53-1166	Dominguez Channel Bridge	8 feet 11 inches minimum to 14 feet 4 5/8 inches maximum Left (SB) Widen 5 feet 11 inches minimum to 6 feet 8 inches maximum Right (NB) Widen

Source: (Caltrans 2026a)
NB=northbound; No. = number; SB=southbound; UC = undercrossing

In addition to the retaining wall proposed along the Carson Street on-ramp summarized in Table 1.4-2, retaining walls are proposed along the I-405 mainline, in both the NB and SB directions, due to the widening of the mainline from the addition of the auxiliary lanes. Existing sound walls impacted by the proposed Project would be replaced. Section 2.3.7, *Noise*, provides additional information regarding these sound walls and other noise abatement measures being considered for the proposed Project. Table 1.4-7 provides the proposed retaining walls and sound walls specific to Alternative 2.

Table 1.4-7: Proposed Retaining Walls and Sound Walls (Alternative 2)

Wall No.	Location	Begin Station (PM)	End Station (PM)
SWRW 514	NB I-405 outside shoulder	9.73	9.78
RW 519	SB I-405 outside shoulder	9.81	10.03
RW 520	NB I-405 outside shoulder	9.86	10.52
RW 531	SB I-405 outside shoulder	10.07	10.25
RW 541	SB I-405 outside shoulder	10.25	10.38
RW 53	SB Carson Street On-Ramp	10.48	10.56
RW 559	SB I-405 outside shoulder	10.59	10.79
SWRW 569	SB I-405 outside shoulder	10.79	10.88
SWRW 575	SB I-405 outside shoulder	10.91	10.94
RW 577	SB I-405 outside shoulder	10.94	11.02

Wall No.	Location	Begin Station (PM)	End Station (PM)
SWRW 589	SB I-405 outside shoulder	11.13	11.21
SWRW 95	SB Avalon Boulevard Loop On-Ramp	11.25	11.29

Source: (Caltrans 2026a)
NB = northbound; No. = number; RW = retaining wall; PM = postmile; SB = southbound; SWRW = sound wall on retaining wall; SW = sound wall

Pavement Widening

In addition to the pavement widening and reconstruction locations summarized in Table 1.4-3, Alternative 2 would require widening along the I-405 mainline and reconstruction of on- and off-ramps at Wilmington Avenue, Carson Street, and Avalon Boulevard. Table 1.4-8 provides the approximate pavement widening and reconstruction locations and descriptions specific to Alternative 2.

Table 1.4-8: Pavement Widening and Reconstruction Locations (Alternative 2)

Begin PM	End PM	Location	Type of Work
9.59	11.18	North of Wilmington Ave UC to South of Avalon Blvd UC	Outside widening along mainline (NB)
9.59	11.13	North of Wilmington Ave UC to South of Avalon Blvd UC	Outside widening along mainline (SB)
9.58	9.77	Wilmington Ave SB Off-Ramp	Ramp Reconstruction
9.65	9.82	Wilmington Ave NB On-Ramp	Ramp Reconstruction
10.32	10.58	Carson St SB On-Ramp	Ramp Reconstruction
10.48	10.59	Carson St SB Off-Ramp	Ramp Reconstruction
10.51	10.64	Carson St NB Off-Ramp	Ramp Reconstruction
10.52	10.78	Carson St NB On-Ramp	Ramp Reconstruction
10.95	11.21	Avalon Blvd SB On-Ramp	Ramp Reconstruction
11.05	11.25	Avalon Blvd NB Off-Ramp	Ramp Reconstruction

Source: (Caltrans 2026a)
Ave = Avenue; Blvd = Boulevard; NB = northbound; PM = postmile; SB = southbound; St= Street; UC = undercrossing

Utilities

A preliminary utility investigation has been conducted for the proposed Project (AIX Civil Design Inc. 2026). It is anticipated that Alternative 2 would result in 70 utility conflicts, which includes facilities owned by AT&T, California Water Service Company, Exxon Mobil, SCE, Southern California Gas, Shell Oil Company, and Verizon. Of the 70 utility conflicts preliminarily identified, 20 would be impacted due to local street improvements and 40 would be impacted due to mainline improvements. Caltrans currently anticipates that 27 would be protected in place, 11 would be protected in place with variance, 20 would be relocated, 9 would be adjusted to grade, 3 would be removed or abandoned. This includes three existing Shell oil and gas lines, located just south of Carson Street, which would be removed and/or abandoned due to the existing angle the utilities cross I-405.

Final disposition of each utility facility will be established in cooperation with Caltrans and the utility owners after completion of the final environmental document. If needed, exceptions to Caltrans' Utility Encroachment Policy would also be sought from Caltrans Headquarters at that time.

Disturbed Soil Area

The disturbed soil area (DSA) for Alternative 2 is estimated to be 30.98 acres.

Drainage

The proposed improvements under Alternative 2 would slightly increase the total pavement runoff, given the added impervious area. New dikes, barriers, and retaining walls would be constructed along the freeway widening, as needed. Existing grated inlets would be capped, and new inlets with parallel drainage systems would be constructed along the widened edge of pavement to collect freeway runoff. Existing drainage facilities at on- and off-ramps would be reconfigured to account for the revised ramp layouts. The drainage design focuses on maintaining existing drainage flow patterns and drainage systems as much as possible. For locations where culverts cross I-405, extensions would be constructed to accommodate freeway widening. For locations where existing culverts are undersized, a new system would be proposed to address the inadequacy. Along some areas where slopes are 4:1 or flatter, flows would be allowed to sheet flow onto adjacent vegetated slopes. At some locations, sheet flow would be directed into proposed BMPs, such as biofiltration swales.

Construction

Under Alternative 2, construction is estimated to begin in 2028 and take approximately 24 months (624 working days).

In-Water Construction

The proposed improvements under Alternative 2 would require excavation of the Dominguez Channel bottom for placement of the cast-in-drilled-holes piles, which would have minor impacts on the existing water surface elevation, with an increase of up to 0.01 foot. During construction, temporary bridge supports may be needed within Dominguez Channel to widen the existing I-405 overcrossing (OC) structure under Alternative 2. These proposed bridge supports would temporarily alter flood elevations for the duration of work within the Dominguez Channel, which would be approximately 4 months. However, any alterations to the existing flood elevations in the Dominguez Channel would be minimal. The supports would be removed following the completion of construction within the Dominguez Channel, and disturbed areas would be restored, to the extent feasible, after completion of construction. In addition, construction would primarily take place during the summer months, which would reduce the potential for flood events.

Right-of-Way

Under Alternative 2, all work would be completed within State and City ROW except at the Dominguez Channel Bridge. In order to widen the Dominguez Channel Bridge,

Alternative 2 would potentially require four partial fee acquisitions (i.e., slivers) and six temporary construction easements (TCE) of parcels owned by Los Angeles County Flood Control District and the Carson Estate Company, pending final design and negotiation with the landowners or land managers. These parcels are not currently open to the public. Alternative 2 is not anticipated to result in the relocation or displacement of any business or individual. See Section 2.2.5, *Relocations and Real Property Acquisitions*, for additional information.

Standardized Measures

Alternative 2 includes bridge widening. As a result, additional Caltrans standardized measures would be implemented. Table 1.4-9 identifies some of the standardized measures that would be applicable to Alternative 2.

Cost

The capital cost for Alternative 2 is estimated to be approximately $199.6 million. The highest costs would be attributed to bridge widening, restriping, paving, and utilities.

Table 1.4-9: Additional Project Design Features (Alternative 2)

Project Design Features	
PF-BR-1	During construction, the California Department of Transportation (Caltrans) Resident Engineer, or designated contractor, will ensure that channel bank work includes bank protection (riprap, concrete walls, and sheet piling) to eliminate the possibility of enhanced bank erosion. If channel bank work occurs during post construction, Caltrans' Resident Engineer, or designated contractor, will ensure that the same requirements are adhered to.
PF-BR-2	During construction, the California Department of Transportation (Caltrans) Resident Engineer, or designated contractor, will ensure excess grease is manually removed from moving parts of bridges and collected for disposal.
PF-BR-3	During construction, the California Department of Transportation (Caltrans) Resident Engineer, or designated contractor, will ensure that shrouds are erected around working areas. Nets and tarps will be suspended below bridges to catch debris from abrasive removal of old paint and over spray, where wind conditions permit.
PF-BR-4	During construction, the California Department of Transportation (Caltrans) Resident Engineer, or designated contractor, will ensure that debris is confined by anchoring tarps to enclose the bridge, where the bridge deck is close to the water level.
PF-BR-5	During construction, the California Department of Transportation (Caltrans) Resident Engineer, or designated contractor, will ensure that booms are used to capture fugitive floating paint chips. Custom-built enclosures will be used to confine and capture abrasives, old paint chips, and paint.
PF-BR-6	During construction, the California Department of Transportation (Caltrans) Resident Engineer, or designated contractor, will ensure that vacuum or suction shrouds on blast heads are used to capture grit and old paint.
PF-BR-7	During the Plans, Specifications, and Estimates (PS&E) phase, an Encroachment Permit will be obtained by the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, from the Los Angeles County Flood Control District.

Caltrans = California Department of Transportation; Metro = Los Angeles County Metropolitan Transportation Authority PS&E = Plans, Specifications, and Estimates

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1.4.5.2 Alternative 3 – Transportation Systems Management and Transportation Demand Management

NEPA documents are required to include a discussion (as applicable for projects on the State Highway System) of viable TSM/TDM alternatives. A TSM alternative is usually only relevant in urban areas with a population of over 200,000. A TDM alternative must be considered for all proposed major highway projects in urban areas with a population of over 200,000.

Alternative 3 would construct and implement the Complete Streets elements and TSM and TDM systems described in Section 1.4.4, *Common Design Features of the Build Alternatives* (see Figure 1.4-6 through Figure 1.4-9). Unlike Alternative 2, Alternative 3 would not create or modify (i.e., lengthen or shorten) any existing auxiliary lanes. Alternative 3 would not require the replacement of any bridge structure or bridge widening, nor would it require work within the Dominguez Channel.

Utilities

It is currently estimated that Alternative 3 would result in the 30 utility conflicts described in Section 1.4.4, due to proposed local street improvements (AIX Civil Design Inc. 2026). Of these, it is anticipated that 10 would be protected in place, 1 would be protected in place with variance, 11 would be relocated, and 8 would be adjusted to grade. These include facilities owned by AT&T, California Water Service Company, Exxon Mobil, SCE, Southern California Gas, Shell Oil Company, and Verizon.

Final disposition of each utility facility will be established in cooperation with Caltrans and the utility owners after completion of the final environmental document. If needed, exceptions to Caltrans' Utility Encroachment Policy would also be sought from Caltrans Headquarters at that time.

Disturbed Soil Area

The DSA for Alternative 3 would be 12.70 acres.

Drainage

Existing drainage flow patterns are to remain largely the same with some existing pipelines and inlets being relocated or otherwise modified to accommodate the local street improvements. Minor hydraulic improvements, such as additional drainage culverts and inlets, would be added in some cases, as well as biofiltration swales.

Construction

Under Alternative 3, construction is estimated to begin in 2028 and take approximately 15 months (326 working days). Alternative 3 would not widen the Dominguez Channel Bridge (Br. No. 53-1166). Therefore, in-water work would not be required.

Right-of-Way

Alternative 3 is not expected to require any TCEs or permanent ROW acquisitions. All work would be completed within State and City ROW.

Cost

The capital cost for Alternative 3 is estimated to be approximately $61.6 million. The highest costs would be attributed to restriping, paving, and utilities.

Figure 1.4-6: Alternative 3 – Project Features and Impact Areas (Sheet 1 of 4)

Figure 1.4-7: Alternative 3 – Project Features and Impact Areas (Sheet 2 of 4)

Figure 1.4-8: Alternative 3 – Project Features and Impact Areas (Sheet 3 of 4)

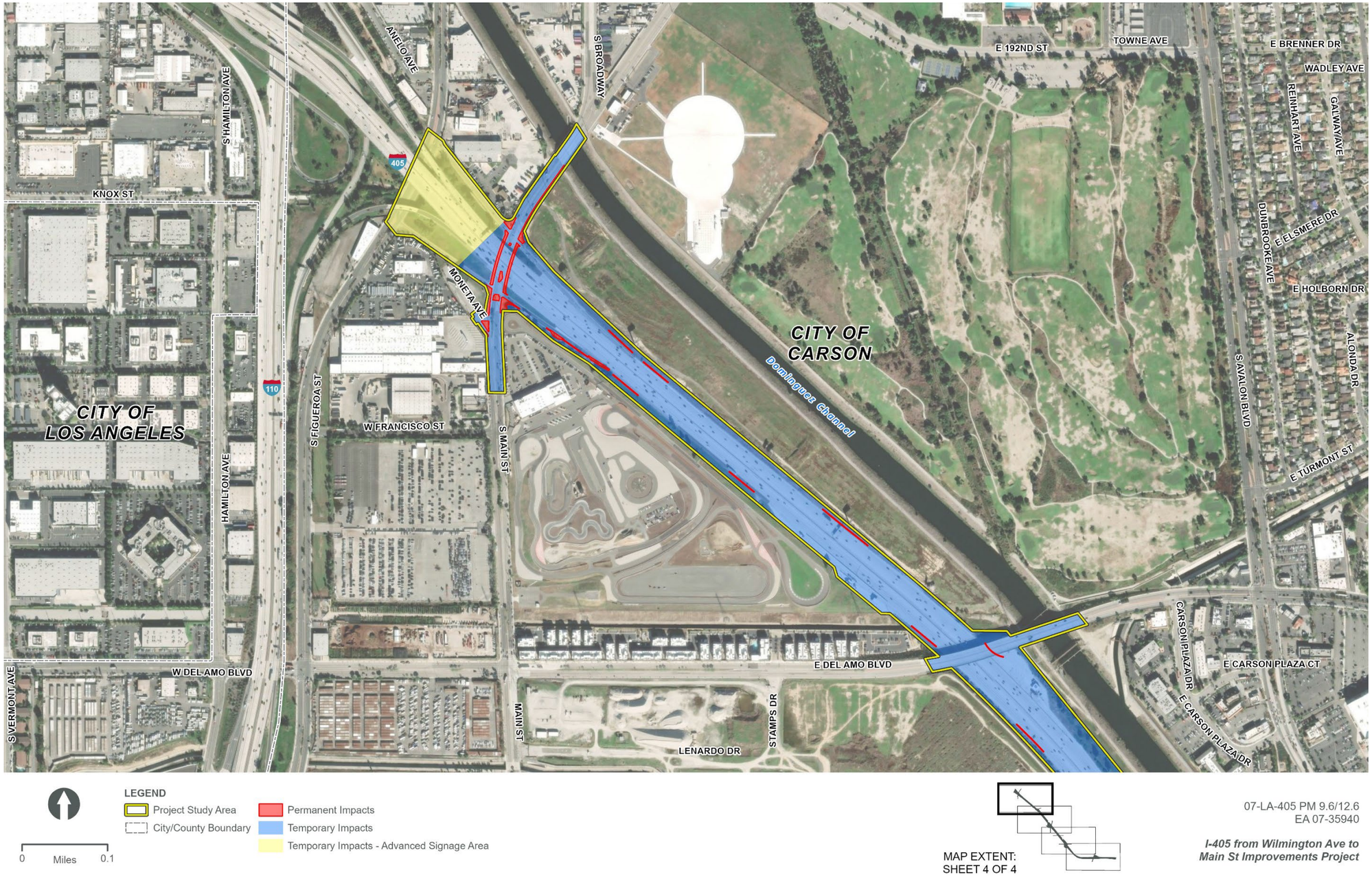

Figure 1.4-9: Alternative 3 – Project Features and Impact Areas (Sheet 4 of 4)

1.5 COMPARISON OF ALTERNATIVES

Table 1.5-1 provides information for comparing the environmental impacts of the Build Alternatives (Alternatives 2 and 3) and the No-Build Alternative (Alternative 1).

After the public circulation period, all comments will be considered, and the Project Development Team will select a preferred alternative and make the final determination of the proposed Project's effect on the environment. In addition to environmental impacts, criteria that will be used to inform the selection of a preferred alternative for the proposed Project are anticipated to include ability to meet the purpose and need, traffic operational performance, design exceptions, ROW, cost, and constructability.

Under CEQA, Caltrans will certify that the proposed Project complies with CEQA, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations for impacts that will not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered prior to Project approval. Caltrans will then file a Notice of Determination with the State Clearinghouse that will identify whether the proposed Project will have significant impacts, if mitigation measures were included as conditions of Project approval, that findings were made, and that a Statement of Overriding Considerations was adopted.

If Caltrans, as assigned by FHWA, determines the NEPA action does not significantly impact the environment, Caltrans will issue a Finding of No Significant Impact. If it is determined that the proposed Project is likely to have a significant effect on the environment, an Environmental Impact Statement will be prepared.

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Table 1.5-1: Comparison of Alternatives

Topic	Alternative 1: No-Build	Alternative 2: Auxiliary Lanes and Complete Streets	Alternative 3: TSM and TDM
Consistency with Federal, State, Tribal, Regional, and Local Plans and Programs	Would be inconsistent with applicable federal, State, regional, and local plans.	Consistent – No Impact	Consistent – No Impact
Parks and Recreational Facilities	No impact	No impact	No impact
Growth	No impact	No impact	No impact
Community Character and Cohesion	No impact	Temporary noise, air quality, and traffic impacts may occur during construction. Alternative 2 would improve mobility and add Complete Street elements, which would benefit community cohesion.	Same as Alternative 2
Relocations and Real Property Acquisition	No impact	No relocations or displacements.	Same as Alternative 2
Utilities/Emergency Services	No impact	Minor utility relocations would be required. This includes 27 protected in place, 11 protected in place with variance, 20 relocate, 9 adjust to grade, 3 remove or abandon. No temporary or permanent interruptions to utility services are anticipated. *CEQA: Less than Significant*	Similar to Alternative 2. Minor utility relocations would be required. This includes 10 protected in place, 1 protect in place with variance, 11 relocate, and 8 adjust to grade. No temporary or permanent interruptions to utility services are anticipated. *CEQA: Less than Significant*

Topic	Alternative 1: No-Build	Alternative 2: Auxiliary Lanes and Complete Streets	Alternative 3: TSM and TDM
Transportation	No impact. Congestion from existing mainline bottlenecks would continue to worsen compared to existing conditions.	Temporary impacts would occur during construction due to short-term ramp closures and overnight mainline closures. Mainline congestion and queuing would be slightly improved following construction. Circulation, mobility, and access for bicycles and pedestrians would also be improved. On-street parking spaces on 213th Street would be removed. No impact on VMT. *CEQA: Less than Significant*	Similar impacts as Alternative 2. However, Alternative 3 would not improve mainline congestion or queuing. *CEQA: Less than Significant*
Visual/Aesthetics	No impact	Project Study Area is not located on a scenic highway or scenic vista. Alternative 2 would impact approximately 114 trees; however, the conceptual design would plant 542 trees. Minor beneficial impacts are anticipated on key views. *CEQA: Less than Significant*	Similar to Alternative 2; however, Alternative 3 would impact approximately 20 trees. *CEQA: Less than Significant*
Cultural Resources	No impact	Alternative 2 would widen the Domiguez Channel Bridge within the Domiguez Channel Historic District. Caltrans has determined that Alternative 2 would not cause an adverse effect to the historic district. Should cultural resources or human remains be discovered during construction, Caltrans standard practices would be implemented. *CEQA: Less than Significant*	Similar to Alternative 2; however, Alternative 3 would not widen the Dominguez Channel Bridge within the Dominguez Channel Historic District. *CEQA: Less than Significant*

Topic	Alternative 1: No-Build	Alternative 2: Auxiliary Lanes and Complete Streets	Alternative 3: TSM and TDM
Hydrology and Floodplain	No impact	During construction, temporary falsework would be required within the Dominguez Channel, which is located within a 100-year floodplain. Alternative 2 would slightly increase the base flood elevation by an estimated 0.01 foot higher than existing condition for approximately 10,000 feet within the Dominguez Channel. No significant impact on floodplain. Floodplain Encroachment Permit could be required. *CEQA: Less than Significant*	No construction activities or permanent improvements would occur within the Dominguez Channel. There would be no change to the base flood elevation. *CEQA: No Impact*
Water Quality and Stormwater Runoff	No impact	Alternative 2 has the potential to result in temporary and permanent impacts on water quality. Alternative 2 would also include construction activities and permanent improvements within the Dominguez Channel. Total DSA would be 30.98 acres. Total increase in net new impervious surface area would be 7.43 acres. The proposed Project would be required to comply with NPDES permit requirements and prepare a SWPPP to avoid and minimize temporary impacts during construction. Design pollution prevention and treatment BMPs would be implemented. Section 404 Permit (Nationwide Permit), Section 401 Water Quality Certification, Section 1602 Lake or Streambed Alteration Agreement, and Floodplain Encroachment Permit could be required, which may result in additional measures by regulatory agencies. *CEQA: Less than Significant*	Similar to Alternative 2; however, the total DSA would be 12.70 acres and the total increase in net new impervious surface area would be 5.33 acres. In addition, no construction activities or permanent improvements would occur within the Dominguez Channel. *CEQA: Less than Significant*

Topic	Alternative 1: No-Build	Alternative 2: Auxiliary Lanes and Complete Streets	Alternative 3: TSM and TDM
Geology/Soils/Seismic/ Topography	No impact	During construction, excavated soil would be exposed, and there would be an increased potential for soil erosion compared to existing conditions. There is potential for soil liquefaction and corrosive soils. Proposed activities and improvements could be affected by ground motion, liquefaction, and possibly ground deformation. *CEQA: Less than Significant*	Similar to Alternative 2; however, no work would occur within the Dominguez Channel. *CEQA: Less than Significant*
Paleontology	No impact	No unique paleontological resources or sites were identified within the APE. During construction, could potentially impact paleontologically sensitive sediments for the construction of auxiliary lanes, bridge widening, and tie back walls. *CEQA: Less than Significant*	No unique paleontological resources or sites were identified within the APE. Construction activities could potentially impact paleontologically sensitive sediments for the construction of tie back walls. *CEQA: Less than Significant*
Hazardous Waste/Materials	No impact	The Project Study Area is located on a former municipal and industrial waste dump. In addition, Dominguez channel reportedly receives industrial waste discharge. ADL, arsenic, and wood preservatives may be present in soils. Lead and ACM may be present in bridges and other structures. Soil, soil vapor, and groundwater contamination could be encountered during excavations. Methane gas could be released into ambient air during excavations. *CEQA: Less than Significant*	The Project Study Area is located on a former municipal and industrial waste dump. Similar impacts related to sites of concern (ADL, arsenic, wood preservatives) as Alternative 2. Alternative 3 would not result in impacts related to ACM, LBP, or the Dominguez Channel. *CEQA: Less than Significant*

Topic	Alternative 1: No-Build	Alternative 2: Auxiliary Lanes and Complete Streets	Alternative 3: TSM and TDM
Air Quality	No impact. There would be a slight increase in particulate matter 10 microns in diameter or less by the Design Year under all scenarios compared to existing conditions.	The proposed Project is located in an AB 617 community. Short-term degradation of air quality may occur during construction due to the release of particulate matter emissions (airborne dust). Heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate carbon monoxide, sulfur dioxide, nitrogen oxides, volatile organic compounds, and some soot particulate in exhaust emissions. Bridge widening could impact asbestos and LBP. Operational impacts would be the same as the No-Build Alternative. *CEQA: Less than Significant*	Similar to Alternative 2. However, construction emissions would be less than Alternative 2, and Alternative 3 would not widen any bridges. Operational impacts would be the same as Alternative 1 and Alternative 2. *CEQA: Less than Significant*

Topic	Alternative 1: No-Build	Alternative 2: Auxiliary Lanes and Complete Streets	Alternative 3: TSM and TDM
Noise	No impact	Construction noise would be short-term and intermittent. Nighttime construction is anticipated. Operational noise would not substantially exceed existing noise levels (12 dBA). However, Alternative 2 would have a noise impact because future noise levels would approach federal noise abatement criteria (i.e., within 1 dBA) under 23 CFR Part 772. Three noise barriers were determined reasonable and feasible and are being recommended for construction: - BA-3 at Northbound (NB) I-405 near Carson Street - BA-6 at Southbound I-405 at Avalon Boulevard off-ramp - BA-10 at Southbound I-405 on-ramp The Avalon Boulevard Undercrossing would need to be widened to accommodate Noise Barrier BA-6. *CEQA: Less than Significant*	Construction noise would be short-term and intermittent. There would be no operational noise impact under 23 CFR 772. *CEQA: Less than Significant*
Energy	No impact. Energy will decrease in the Design Year compared to existing conditions.	Direct energy use under Alternative 2 would be the same as the No-Build Alternative and less than existing conditions. Indirect energy use during construction would be approximately 21,953 million BTU. *CEQA: Less than Significant*	Direct energy use would be the same as Alternative 1 and Alternative 2. Indirect energy use during construction would be approximately 4,022 million BTU. *CEQA: Less than Significant*

Topic	Alternative 1: No-Build	Alternative 2: Auxiliary Lanes and Complete Streets	Alternative 3: TSM and TDM
Natural Communities	No impact	Alternative 2 would result in approximately 0.07 acre of temporary impacts and 0.01 acre of permanent impacts on Pickleweed Mats (State rank: S3), which are found on the lower tidal banks of the Dominguez Channel within the BSA. *CEQA: Less than Significant with Mitigation Incorporated*	Alternative 3 would result in temporary indirect impacts on the Del Amo Channel and associated Pickleweed Mats from dust generated during construction. *CEQA: Less than Significant*
Wetlands and Other Waters	No impact	Alternative 2 would temporarily impact approximately 1.30 acres of non-wetland waters and 0.07 acre of wetlands under USACE and RWQCB jurisdiction. Alternative 2 would also permanently impact approximately 0.33 acre of non-wetland waters and 0.01 acre of wetlands under USACE and RWQCB jurisdiction. Alternative 2 would temporarily impact approximately 2.01 acres of unvegetated streambed and approximately 0.07 acre of Pickleweed Mats/riparian vegetation under CDFW jurisdiction. Alternative 2 would permanently impact approximately 0.54 acre of unvegetated streambed and approximately 0.01 acre of Pickleweed Mats. *CEQA: Less than Significant with Mitigation Incorporated*	Alternative 3 would not result in any direct temporary or permanent impacts to non-wetland or wetlands waters under USACE or RWQCB jurisdiction. Alternative 3 would also not directly impact unvegetated streambed or Pickleweed Mats/riparian vegetation under CDFW jurisdiction. However, Alternative 3 could result in temporary indirect impacts to the Del Amo Channel and associated Pickleweed Mats from construction activities adjacent to the channel (dust generation). *CEQA: Less than Significant*

Topic	Alternative 1: No-Build	Alternative 2: Auxiliary Lanes and Complete Streets	Alternative 3: TSM and TDM
Plant Species	No impact	No special-status plant species were identified during field surveys. The BSA includes habitat that could support lucky morning-glory (*Calystegia felix*), southern tarplant (*Centromadia parryi* ssp. *australis*), smooth tarplant (*Centromadia pungens* ssp. *laevis*), vernal barley (*Hordeum intercedens*), and Sanford's arrowhead (*Sagittaria sanfordii*). Alternative 2 would temporarily impact approximately 2.01 acres and permanently impact approximately 0.54 acre of suitable streambed habitat for lucky morning-glory, southern tarplant, and Sanford's arrowhead. Alternative 2 would also temporarily impact approximately 2.47 acres and permanently impact approximately 0.19 acre of suitable habitat for vernal barley. *CEQA: Less than Significant with Mitigation Incorporated*	Alternative 3 would not impact suitable unvegetated streambed habitat for lucky morning-glory, southern tarplant, or Sanford's arrowhead. Alternative 3 would temporarily impact approximately 2.47 acres and permanently impact approximately 0.11 acre of suitable habitat for vernal barley. *CEQA: Less than Significant with Mitigation Incorporated*
Animal Species	No impact	American bumble bee (*Bombus pensylvanicus),* Southern California legless lizard *(Anniella stebbinsi*), migratory birds, and bats have the potential to occur in the BSA. Construction activities, such as grading, excavation, vegetation removal, and operation of heavy equipment, could result in direct and indirect impacts on special-status animal species within the BSA. Indirect impacts may also arise from construction-related noise, vibration, and artificial lighting. *CEQA: Less than Significant with Mitigation Incorporated*	Same as Alternative 2. *CEQA: Less than Significant with Mitigation Incorporated*

Topic	Alternative 1: No-Build	Alternative 2: Auxiliary Lanes and Complete Streets	Alternative 3: TSM and TDM
Threatened and Endangered Species	No impact	A monarch butterfly (federal proposed threatened species; *Danaus plexippus plexippus* pop. 1) was observed during field surveys. Crotch's bumble bee (*Bombus crotchii),* burrowing owl (*Athene cunicularia*), and Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) also have the potential to occur in the BSA. Construction activities, such as grading, excavation, vegetation removal, and operation of heavy equipment could result in direct and indirect impacts on listed species within the BSA. Indirect impacts may also arise from construction-related noise, vibration, and artificial lighting. Alternative 2 would also directly impact pickleweed mats, which are suitable habitat for Belding's Savannah sparrow. Caltrans has determined that Alternative 2 would not affect any federally listed species or result in the "take" of any state listed species. *CEQA: Less than Significant with Mitigation Incorporated*	Similar to Alternative 2; however, Alternative 2 would not directly impact pickleweed mats, which are suitable habitat for Belding's Savannah sparrow. *CEQA: Less than Significant with Mitigation Incorporated*
Invasive Species	No impact	There are several invasive species growing in the BSA. Proposed activities would have the potential to spread invasive species through further disturbance of the BSA. *CEQA: Less than Significant*	Same as Alternative 2 *CEQA: Less than Significant*

Topic	Alternative 1: No-Build	Alternative 2: Auxiliary Lanes and Complete Streets	Alternative 3: TSM and TDM
Climate Change (CEQA only)	No impact. GHG emissions will decrease in the Opening and Design Year compared to existing conditions.	Alternative 2 is a roadway capacity enhancing project but is not expected to induce VMT. Construction activities are estimated to emit approximately 1,618 metric tons of CO2e. Operational GHG emissions would be the same as the No-Build Alternative, and less than existing conditions. *CEQA: Less than Significant*	Alternative 3 is not a roadway capacity enhancing project and would not induce VMT. Similar to Alternative 2; however, construction activities are estimated to emit approximately 299 metric tons of CO2e. *CEQA: Less than Significant*
Senate Bill 743/ Induced Demand Analysis (CEQA only)	No impact	*CEQA: No Impact – Screened*	*CEQA: No Impact – Screened*
Wildfire (CEQA only)	No impact	*CEQA: No Impact*	*CEQA: No Impact*
Cumulative Impacts (CEQA only)	No impact	*CEQA: Less than Significant with Mitigation Incorporated*	*CEQA: Less than Significant with Mitigation Incorporated*
Capital Cost	N/A	$193.317 million	$60.679 million

AB=Assembly Bill; ACM=asbestos-containing material; ADL=aerially deposited lead; APE=area of potential effects; bfe=base flood elevation; BMP=Best Management Practice; BSA=Biological Study Area; BTU= British thermal units; CDFW=California Department of Fish and Wildlife; CEQA=California Environmental Quality Act; CFR=Code of Federal Regulations; CO2e=carbon dioxide equivalent; dBA= A-weighted decibels; DSA=disturbed surface area; GHG=greenhouse gas; LBP=lead-based paint; NPDES=National Pollutant Discharge Elimination System; RWQCB=Regional Water Quality Control Board; SWPPP=stormwater pollution prevention plan; TDM=Transportation Demand Management; TSM=Transportation System Management; USACE=U.S. Army Corps of Engineers; VMT=vehicle miles traveled

1.6 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION

During Project Initiation, Caltrans approved a Project Study Report/Project Development Support (PSR-PDS) for the proposed Project in 2020. The build alternative in the PSR-PDS proposed to construct three auxiliary lanes along NB I-405 and two auxiliary lanes along SB I-405. As discussed below, the NB auxiliary lane at the Weigh Station was removed from Alternative 2 prior to the preparation of the draft environmental document.

Following completion of the Project Initiation phase and prior to the preparation of the draft environmental document, Alternative 3 was added based on feedback from Metro, the City, and Caltrans. Alternative 3 has been carried forward for evaluation in this environmental document.

1.6.1 Auxiliary Lane from Weigh Station to Main Street

During Project Initiation, the proposed Project included an auxiliary lane on NB I-405 from the Weigh Station on-ramp to the Main Street off-ramp. Findings of the Traffic Engineering Performance Assessment (Caltrans 2020), and collision data from Caltrans TASAS–TSN for the 3-year period from April 1, 2020, to March 31, 2023, showed that constructing an auxiliary lane from the Weigh Station to Main Street did not provide substantial operational improvements. The addition of the NB Auxiliary Lane does not provide a substantial improvement in the weaving operations between these two interchanges and does not improve the ramp AM/PM LOS. Additionally, the ramp volumes for the Weigh Station on-ramp and Main Street NB off-ramp are not high enough to require an auxiliary lane or dedicated lane for the ramps. The collision data does not show a need for the auxiliary lane from the Weigh Station to Main Street but instead suggest that extending the auxiliary lane to I-110 could potentially improve the weave and reduce collisions for this segment. Although an auxiliary lane from the Weigh Station to the I-110 Connector would increase some weave movements, it would provide a dedicated lane from the Weigh Station to the NB I-110 Truck Bypass Connector. Because this auxiliary lane would not operate efficiently without being extended to the NB I-110 Truck Bypass Connector, which is planned under another independent project (EA 35710K), and without additional improvements to help eliminate the potential for traffic collisions, a proposed auxiliary lane between the Weigh Station and Main Street was eliminated from consideration as part of the proposed Project.

1.6.2 Full Standard Lanes

A full standard alternative was considered early in the PSR-PDS but was withdrawn from further consideration due to substantial ROW and environmental impacts. This alternative would widen I-405 to upgrade the existing nonstandard lane and shoulder widths to standard before adding the auxiliary lane in each direction. However, this alternative would require realignment of all interchange ramps within the Project Study Area; reconstruction of ramp terminal intersections; relocation of weigh stations in both

directions of I-405; replacement of the Del Amo Boulevard OC; substantial widening of all undercrossings and channel crossing bridges along the Project corridor; and in some cases, replacement of undercrossing structures to provide the standard vertical clearance over the cross streets. There would also be potentially substantial construction and environmental impacts as a result of the replacement of the Del Amo Boulevard OC and additional widening of the Dominguez Channel bridge over Dominguez Channel, which is eligible for listing in the National Register of Historic Places. Furthermore, the required ramp and bridge reconstruction would result in significant construction impacts to the traveling public on I-405, local arterials, and surrounding communities.

1.6.3 Reversible Lanes

Assembly Bill 2542 amended the California Streets and Highways code to require, effective January 1, 2017, that Caltrans or a regional transportation planning agency demonstrate that reversible lanes were considered when submitting a capacity-increasing project or a major street or highway lane realignment project to the California Transportation Commission for approval (California Streets and Highways Code, Section 100.015). The FHWA guidance states, “To warrant reversible lanes, peak-period traffic volumes should exhibit or anticipate to exhibit significant directional imbalance (e.g. 70/30 percent).” FHWA practice also considers a 65/35 percent direction imbalance to be worthy of consideration. The guidance further states that “if reversing a traffic lane is considered, the basic requirement is that off-peak traffic can be accommodated in the remaining lanes.”

I-405 does not currently exhibit a substantial directional imbalance of traffic volumes and is not anticipated to in the future. Should reversible lanes be implemented, the remaining lanes would not sufficiently accommodate existing or future traffic volumes, as severe traffic congestion presently exists in both directions. The Reversible Lanes Alternative was eliminated from consideration because of the worsening of traffic operations and trip reliability in the off-peak direction and the lack of a substantial directional imbalance along the Project corridor.

1.7 PERMITS AND APPROVALS NEEDED

The following permits, licenses, agreements, and certifications are required for Project construction:

Table 1.7-1: Permits and Approvals

Agency	Permits/Licenses/ Agreements/Certifications	Status
U.S. Army Corps of Engineers	Preliminary Jurisdictional Determination for jurisdictional wetlands and waters of the United States Section 404 Permit for filling or dredging waters of the United States	Should Alternative 2 be selected, a Preliminary Jurisdictional Delineation application will be submitted following selection of the preferred alternative. Nationwide Permit 14 pre-construction notification will be submitted during the design phase, if required.
California Department of Fish and Wildlife	Section 1602 Lake or Streambed Alteration Agreement	Should Alternative 2 be selected, applications for 1602 permit expected after final environmental document approval, if required.
California Water Resources Board and Los Angeles Regional Water Quality Control Board	Section 401 certification/waste discharge requirements	Should Alternative 2 be selected, application for Section 401 certification expected after final environmental document approval, if required.
Federal Highway Administration	Air Quality Conformity Determination	Request for determination to be submitted following selection of a preferred alternative.
State Historic Preservation Officer (SHPO)	National Historic Preservation Act Section 106 consultation Section 4(f) *De Minimis*	SHPO concurred with the Finding of No Adverse Effect and was notified of the *de minimis* determination under Section 4(f).
Los Angeles County Flood Control District	Floodplain Encroachment Permit	During final design phase and prior to construction.
California Department of Transportation	Encroachment Permit	During final design phase and prior to construction.
City of Carson	Encroachment Permit	During final design phase and prior to construction.
California Transportation Commission (CTC)	CTC vote to approve funds	Following the approval of the final environmental document and posting the Notice of Determination with the State Clearinghouse, the CTC will vote to approve funding for the proposed Project.

CTC = California Transportation Commission; SHPO = State Historic Preservation Officer

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Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

2.1 RESOURCE TOPICS DISMISSED FROM ANALYSIS

As part of the scoping and environmental analysis carried out for the proposed Project, the following environmental issues were considered but no adverse impacts were identified. As a result, there is no further discussion about these issues in this document.

2.1.1 Coastal Zone

There will be no effects on coastal resources because the proposed Project is not located within the coastal zone.

2.1.2 Wild and Scenic Rivers

The proposed Project is not located within or near any National or State Wild and Scenic Rivers.

2.1.3 Parks and Recreation

There are no existing or planned parks or recreational facilities within the Project Study Area.

2.1.4 Farmlands

There are no farmlands within the Project Study Area.

2.1.5 Timberlands

There are no timberlands or timber harvesting uses within the Project Study Area.

2.1.6 Threatened and Endangered Species

This Project is located outside of National Oceanic and Atmospheric (NOAA) Fisheries jurisdiction; therefore, a NOAA Fisheries species list is not required and no effects to NOAA Fisheries species are anticipated.

2.1.7 Wildfire

The Project Study Area is not located within or near a very high, high, or moderate Fire Hazard Safety Zones (FHSZ) (CAL FIRE n.d.). The nearest FHSZ is located approximately 3.3 miles southwest of the Project Study Area and consists of a moderate FHSZ in a local responsibility area.

2.2 HUMAN ENVIRONMENT

2.2.1 Existing and Future Land Use

This section is based on the proposed Project's *Community Impact Assessment* (CIA) (GPA Consulting 2025), which was completed in October 2025. The Community Impact Resource Study Area (RSA) comprises existing and future land use located along I-405 within a 3-mile segment from Wilmington Avenue to Main Street and includes a 0.5-mile buffer around the Project Study Area (see Figure 2.2.1-1).

The Community Impact RSA includes land uses that may result in temporary or permanent impacts on land use. The Community Impact RSA is compared with a larger surrounding region, the City of Carson and Los Angeles County, to gain perspective and identify similarities, differences, and relationships between the areas.

The City of Carson is approximately 19 square miles in size and located within the South Bay and Harbor subregions of the county. The Community Impact RSA is within an existing transportation corridor surrounded by urban developments and is adjacent to a variety of land uses, including general commercial, light and heavy industrial, downtown mixed use, flex district, corridor mixed use, and low, medium, and high density residential (see Figure 2.2.1-2)(Southern California Association of Governments 2019). Existing zoning designations include downtown mixed use, commercial mixed use, low density residential, and medium density residential (see Figure 2.2.1-3).

Reasonably foreseeable development activities, including the name, location, and current status, are listed in Table 2.2.1-1 and shown in Figure 2.2.1-3.

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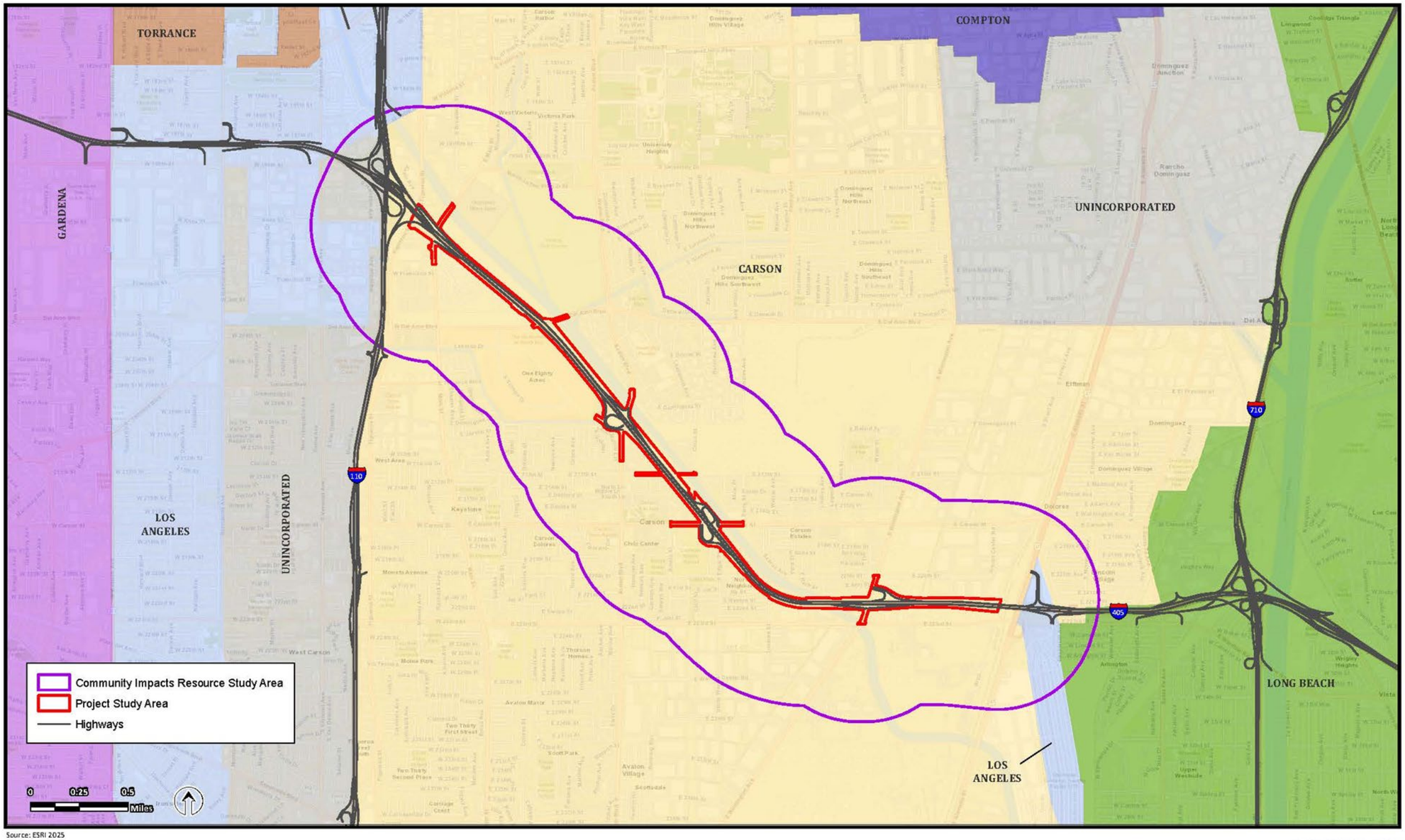

Figure 2.2.1-1: Community Impact Resource Study Area and City Boundaries

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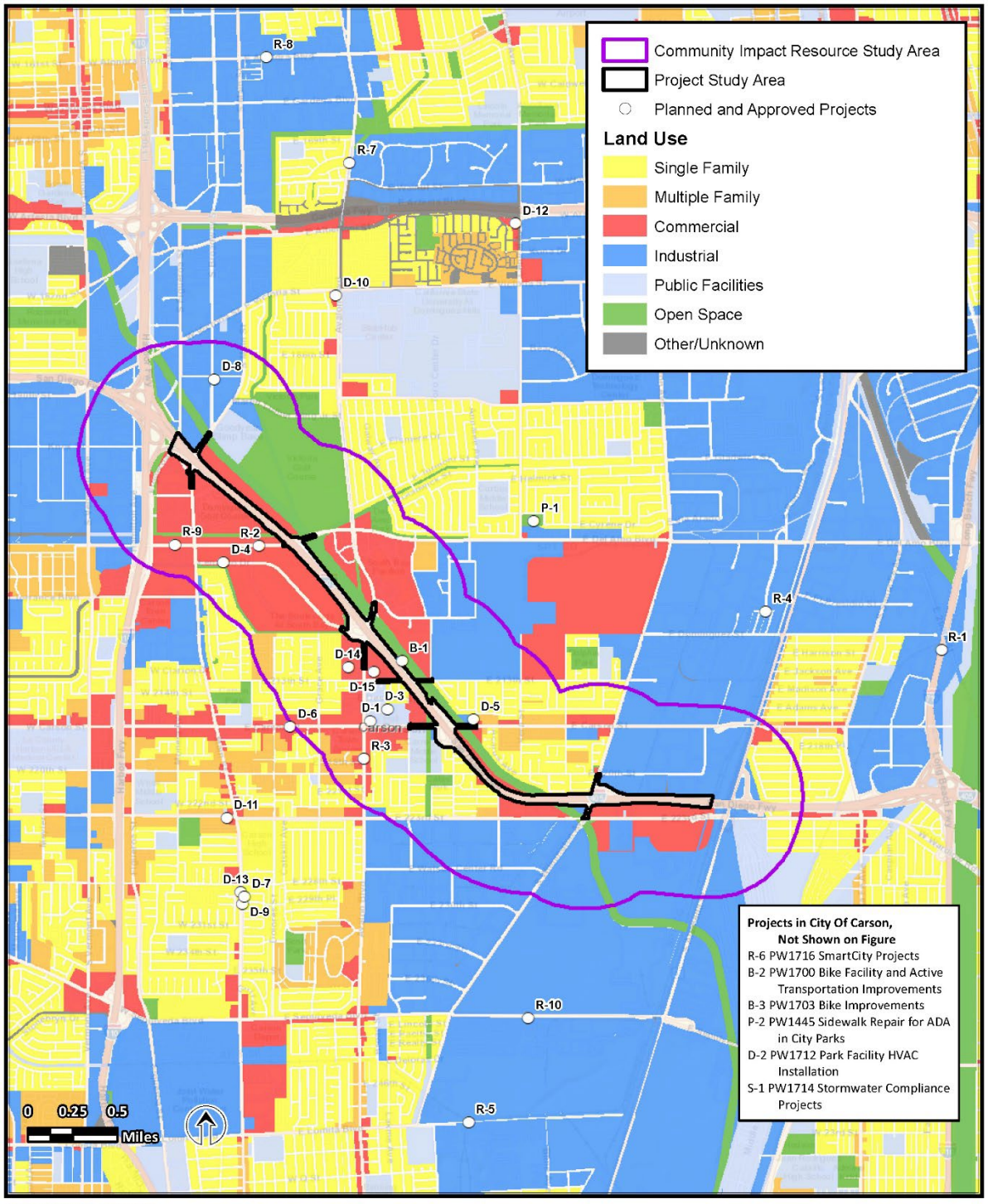

Source: SCAG 2019; ESRI 2025

07-LA-405 PM 9.6/12.6
EA 07-35940

I-405 from Wilmington Ave to Main St Improvements Project

Figure 2.2.1-2: Land Use in the Community Impact Resource Study Area

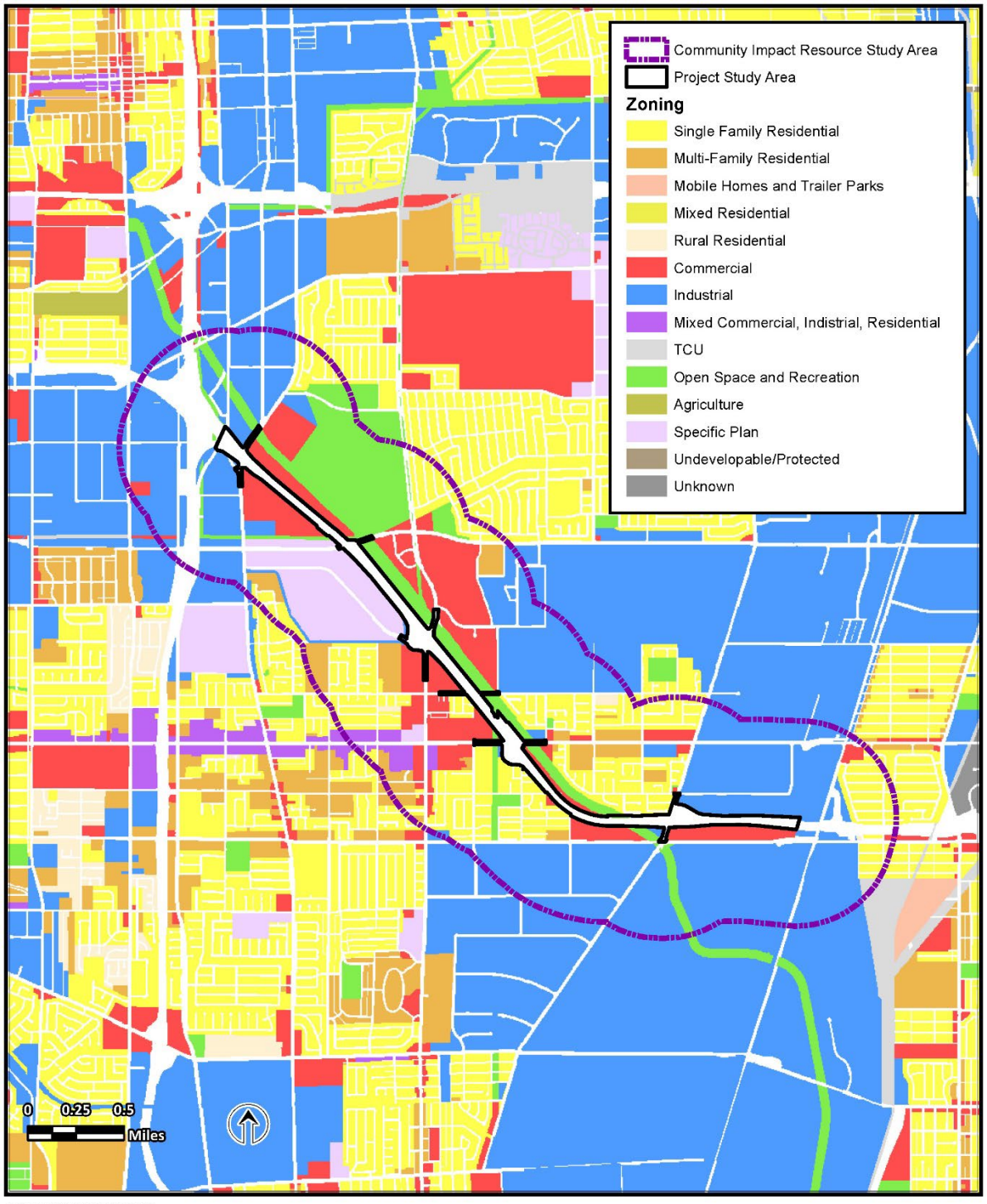

Figure 2.2.1-3: Zoning in the Community Impact Resource Study Area

Table 2.2.1-1: Current and Future Development Projects

Project ID[1]	Name	Project Proponent	Location	Proposed Uses	Status
Roadway Projects (R-X)					
R-1	I-710 Soundwalls Project	Metro	Along the I-710 corridor from State Route 60 to Pacific Coast Highway, Carson, CA	Components of this project include construction of 5 miles of new sound walls along I-710 as well as an additional 7 miles of existing walls that would be aesthetically treated to match the new walls.	Design is currently under review
R-2	PW1617 Leonardo Drive	City of Carson	City of Carson, Leonardo Drive	Components of this project include construction of new roadway to serve the 157-acre site development.	Design
R-3	PW1691 Annual Pavement Overlay	City of Carson	City of Carson, Avalon Boulevard Street Rehabilitation from Carson Street to 223rd Street	Components of this project include street rehabilitation, such as asphalt pavement grind and overlay and local removal and replacement of roadway section. It would also include concrete reconstruction, tree removal and replacement, repair of damaged sidewalks, driveway approaches, curbs and gutters, and access ramps.	Planned
R-4	PW1116 209th Street /Brant Ave/Lamberton Ave/Maciel Ave – Selective Roadway	City of Carson	City of Carson, 209th Street, Brant Avenue, Lamberton Avenue, and Maciel Avenue Improvement	Components of this project include removal and reconstruction of curb and gutter, installation of streetlights, and pavement rehabilitation. Potential right-of-way (ROW) acquisition along Maciel Avenue may be necessary. 209th Street, Brant Avenue, Lamberton Avenue, and Maciel Avenue Improvement.	Planned
R-5	PW1702 Lomita Boulevard Safety Improvements – Wilmington to Alameda	City of Carson	City of Carson, Lomita Boulevard from Wilmington to Alameda	Components of this project include street reconstruction of Lomita Boulevard (Carson side).	Planned
R-6	PW1716 SmartCity Projects	City of Carson	City of Carson	Components of this project include the design and installation of a Fiber Optic Backbone System in targeted areas for roadways.	Planned

Project ID[1]	Name	Project Proponent	Location	Proposed Uses	Status
R-7	PW1751 Avalon Boulevard – Victoria to Alondra	City of Carson	City of Carson, Avalon Boulevard Street Improvement from Victoria to Alondra	Components of this project include improvements such as asphalt pavement grind and overlay and local removal and replacement of roadway section. It would also include concrete reconstruction, tree removal and replacement, repair of damaged sidewalks, driveway approaches, curbs and gutters, and access ramps.	Planned
R-8	PW1759 Alondra Boulevard – Figueroa to Avalon	City of Carson	City of Carson, Avalon Boulevard from Figueroa to Avalon	Components of this project include 1 mile of improvements such as asphalt pavement grind and overlay and local removal and replacement of roadway section. It would also include concrete reconstruction, tree removal and replacement, repair of damaged sidewalks, driveway approaches, curbs and gutters, and access ramps.	Planned
R-9	PW1760 Del Amo – Figueroa and Main St.	City of Carson	City of Carson, Del Amo Boulevard from Figueroa to Main Street	Components of this project include asphalt pavement grind and overlay and local removal and replacement of roadway section. It would also include concrete reconstruction, tree removal and replacement, repair of damaged sidewalks, driveway approaches, curbs and gutters, and access ramps.	Planned
R-10	PW1761 Sepulveda Boulevard – Avalon to Alameda	City of Carson	Sepulveda Boulevard from Avalon Street to Alameda Street, Carson, CA	Components of this project include asphalt pavement grind and overlay and local removal and replacement of roadway section. It would also include concrete reconstruction, tree removal and replacement, repair of damaged sidewalks, driveway approaches, curbs and gutters, and access ramps.	Planned

Project ID[1]	Name	Project Proponent	Location	Proposed Uses	Status
Bike Improvements (B-X)					
B-1	PW1600 Dominguez Channel Bike Path II	City of Carson	City of Carson along Dominguez Channel from Avalon to Carson Street	Components of this project include a bike path installation along the Dominguez Channel.	Planned
B-2	PW1700 Construction of Bike Facility and Active Transportation Improvements	City of Carson	Throughout City of Carson	Components of this project include construction of 30 miles of bike facilities and active transportation improvements.	Planned
B-3	PW1703 Design and Construct Bike improvements	City of Carson	City of Carson	Components of this project include the design and construction of the balance of the improvements described in the bike master plan, which is approximately 58 miles of bike improvements.	Planned
Parks and Recreation (P-X)					
P-1	PW1636 Mills Park Renovations	City of Carson	City of Carson	Components of this project include the installation of new shade structure over picnic shelters and outdoor exercise equipment. Construction of unisex restrooms (prefabrication) for public use, monument sign, and wading pool demo – Per Capita Grant.	Planned
P-2	PW1445 Sidewalk Repair for ADA in City Parks	City of Carson	City of Carson	Components of this project include the repair of walkways for Americans with Disabilities Act (ADA) compliance in various City parks.	Planned

Project ID[1]	Name	Project Proponent	Location	Proposed Uses	Status
Development, Rehabilitation, and Improvement Projects (D-X)					
D-1	PW1662 City Hall Renovation (HVAC & Roof)	City of Carson	701 East Carson Street, Carson, California (CA) 90745	Components of this project include upgraded heating, ventilation, and air conditioning (HVAC) and the roof at the City Hall and Community Center.	Planned
D-2	PW1712 Park Facility HVAC Installation	City of Carson	City of Carson	Components of this project include the design and construction of a $750k per Gymnasium and Facility.	Planned
D-3	PW1725 Community Center – Teen/Innovation Center Expansion	City of Carson	801 Carson Street, Carson, CA 90745	Components of this project include building out the Community Center campus to include a full-service Teen/Innovation Center focused on the needs of the City of Carson's youth.	Planned
D-4	The District at South Bay	RE Solutions	Between Del Amo and Avalon Boulevards, fronting on the I-405 Freeway and less than 1 mile from the I-110 Freeway, Carson, CA	Components of this project include a 157-acre brownfield project that would transform the former landfill into a vibrant mixed-use development.	Planned
D-5	Perry Street Residences	21611 Perry Street, LLC	21611 Perry Street, Carson, CA 90745	Components of this project include a 62-unit, 3-story residential condominium townhome development that would contain ten residential buildings, private and common open space, off-street parking, internal roadway, infrastructure connections, and landscaping.	Under Review
D-6	Anastasi Development	Anastasi Development	336 East Carson Street, Carson, CA 90745	Components of this project include a 50-unit residential townhome development that would contain 10 residential buildings (35-foot-high each), private and common open space, off-street parking, internal roadway, infrastructure connections, and landscaping.	Under Review

Project ID[1]	Name	Project Proponent	Location	Proposed Uses	Status
D-7	Figueroa Street Business Park	WPT	20601 Main Street, Carson, CA	Components of this project include a development of a business park campus that would accommodate a range of uses that includes offices, research and development, e-commerce, and light industrial uses in three structures totaling approximately 303,490 square feet and one general commercial/retail structure totaling approximately 2,700 square feet (all four structures would include a total building area of 306,190 square feet) in accordance with the proposed Figueroa Street Business Park Specific Plan and Development Agreement.	Under Review
D-8	Griffith Street BESS Development	VESI LLC	18800 Broadway, Carson, CA	Components of this project include redevelopment of the approximately 3-acre project site with a Battery Energy Storage System (BESS) and associated infrastructure. Lithium-ion batteries would be stored within modular outdoor enclosures, and power that is released or captured by the batteries would be transferred to and from the Southern California Edison (SCE) Nola Substation via an underground 66-kilovolt generation transmission (gen-tie) line.	Under Review
D-9	SyWest Development	SyWest Development	20151 Main Street, Carson, CA	Components of this project include a retail Shopping Center (Preferred Land Use Scenario): Approximately 233,000-square-foot retail shopping center anchored by an approximately 153,000-square-foot warehouse-style big box store, approximately 50,000-square-foot mid-size junior anchor, approximately 15,000-square-foot small anchor, and three restaurant or retail pads ranging from approximately 4,800 to 5,200 square feet. This project also includes a Commerce Center (Secondary Land Use Scenario): Approximately 532,390-square-foot industrial warehouse/distribution facility, including logistic use, spread among two buildings.	Under Review
D-10	18101 Avalon Blvd	Ventus Group	18101 Avalon Boulevard, Carson, CA	Components of this project include the demolition of an existing church and new construction of a 30-unit condominium development.	Under Review

Project ID[1]	Name	Project Proponent	Location	Proposed Uses	Status
D-11	138 W 223rd Street	Golden State Alliance, LLC	138 W 223rd Street, Carson, CA	Components of this project include new construction of an 11-unit apartment development.	Under Review
D-12	Chevron Gas Use Expansion	Max Netty	17453-55 Central Avenue, Carson, CA	Components of this project include the addition of a new automatic, drive-through carwash and new gas pump island for large-body trucks to an existing gas station with a convenience store and restaurant with a drive-through, as well as additional site improvements.	Under Review
D-13	Carson Country Mart	City of Carson	20400 E. Main Street, Carson, CA	Components of this project include the development of a 96-acre portion of the 157-acre site, formerly the Cal-Compact Landfill, into residential (1,250 units), regional commercial (696,500 square feet), and restaurant (15,000 square feet) planning areas.	Approved
D-14	Imperial Avalon Mixed Use	City of Carson	21207 South Avalon Boulevard, Carson, CA	Components of this project include the development of 27.21 acres from regional commercial and low density residential to urban residential. The residential unit mix would include 764 multifamily apartment units, of which 83 would be rented to seniors and/or veterans; 28 detached townhome units; and 323 attached townhome units. The project would also include 10,000 square feet of restaurant uses and 111,581 square feet of publicly accessible and privately maintained open space (including a 22,859-square-foot park).	Approved
D-15	Carson Triangle Project	City of Carson	21140, 21212, and 21126 Avalon Boulevard, Carson, CA	Components of this project include a residential development consisting of 32 affordable apartments and 283 market-rate townhouses. The site would ultimately contain 52 residential buildings, a community pool building, private and common open spaces, landscaping, off-street parking, internal roadways, infrastructure connections, and landscaping.	Approved

Project ID[1]	Name	Project Proponent	Location	Proposed Uses	Status
Stormwater Projects (S-X).					
S-1	PW1714 Stormwater Compliance Projects	City of Carson	Throughout City of Carson	Components of this project include the clean-up of the Dominguez Channel, correcting the hydraulic inefficiencies, planting trees and native plants to allow infill treatment and infiltration, and installing lighting and fencing to comply with the State Water Resources Control Board Permit requirements.	Planned
S-2	Dominguez Channel Parkway BMP Project, I-185	City of Torrance	City of Carson, City of Torrance	Components of this project include the improvement of water quality at the Dominguez Channel and Torrance Lateral.	Planned

Source: (GPA Consulting 2025)
Notes:
[1] Project IDs are also shown on Figure 2.2.1-2 above.
Metro = Los Angeles County Metropolitan Transportation Authority

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2.2.2 Consistency with Federal, State, Tribal, Regional, and Local Plans and Programs

2.2.2.1 Affected Environment

This section is based on the proposed Project's CIA (GPA Consulting 2025a), which was completed in October 2025. This section describes the proposed Project's consistency with applicable adopted transportation and land use plans and programs. The RSA used to evaluate consistency with applicable federal, State, regional, and local programs is the same as the Community Impact RSA described in Section 2.2.1, *Existing and Future Land Use* (see Figure 2.2.1-1), which includes a 0.5-mile buffer around the Project Study Area. Although the Community Impact RSA extends into a small part of the City of Los Angeles on the west and east sides of the Community Impact RSA, the local analysis for this section is limited to the City of Carson plans and programs to best reflect the affected environment that the proposed Project would directly or indirectly impact.

Federal and State Plans

Federal Transportation Improvement Program

The proposed Project is included in the Final Adopted 2025 FTIP, the SCAG 2020–2045 RTP/SCS, and the 2025 FTIP with FTIP ID LA9918955. The proposed Project is included in the 2024–2050 RTP/SCS under RTP ID# 220A1S01. The project description provided in the Final Adopted 2025 FTIP with the Adopted 2020-2045 RTP/SCS, which was approved on December 16, 2024, states the following:

> Add auxiliary lane between interchange on- and off-ramps at five locations along northbound and southbound I-405 between Wilmington Avenue (PM 9.6) and Main Street (PM 12.6).

California Transportation Plan 2050

The California Transportation Plan (CTP) is the State's long-range transportation plan, which is updated every 5 years pursuant to State and federal law. The plan provides a unifying and foundational policy framework that is designed to close the gap between the RTPs and what is needed to meet 2050 targets.

The CTP strategies and policies demonstrate the level of action required to make transportation decisions in California. The plan is intended to guide transportation decision-makers at all levels of government and identifies a vision for the future transportation system, establishes new statewide priorities, and serves as a roadmap to guide the Caltrans and partner agencies in implementing recommendations. CTP 2050 informs future modal and regional plan development and can be used to support cross-agency collaboration to achieve shared goals (Caltrans 2021).

Regional Plans

Southern California Association of Governments 2008 Regional Comprehensive Plan

The SCAG 2008 Regional Comprehensive Plan (RCP), *Helping Communities Achieve a Sustainable Future*, is an advisory document to local agencies for their voluntary use in preparing local plans and handling issues of regional significance (Southern California Association of Governments 2008). The RCP addresses important regional issues, such as housing, traffic/transportation, water, and air quality, and presents a vision of how the region can balance resource conservation, economic vitality, and quality of life.

Los Angeles County Metropolitan Transportation Authority 2020 Long Range Transportation Plan

The Los Angeles County (County) Metropolitan Transportation Authority (Metro) 2020 Long Range Transportation Plan provides a roadmap that details planning, building, operating, maintaining, and partnering for mobility improvements over the 30-year period starting in 2020 for a more mobile, resilient, accessible, and sustainable future in the County (Los Angeles County Metropolitan Transportation Authority 2020).

Local Plans

City of Carson General Plan

In April 2023, the 2040 General Plan was adopted by the City. The General Plan is a policy document that sets forth the goals, policies, and direction the City will take to achieve the vision for the community. The General Plan elements include Land Use and Visualization, Circulation, Community Character and Design, Recreation and Active Lifestyle, Community Health, Community Services, Education and Safety, Open Space and Environmental Conservation, Noise, and Economic Development. The Land Use Element directs the long-term physical development of the City by guiding use, form, and the characteristics of land improvements. This element designates the location, types, and intensity of various land uses in the City. Guiding principles identified in the Land Use Element include vibrant, safe, and walkable mixed-use neighborhoods and revitalized corridors; a diverse array of housing types to meet the needs of all segments of the community; development of regional-scale destinations, as well as neighborhood-serving retail and amenities; and harmony between industrial and residential land uses (City of Carson 2023b).

The Circulation Element establishes the vision, goals, and implementation of measures required to improve and enhance the City's local and regional transportation networks. The vision identified in the Circulation Element includes sustaining and improving the social, economic, aesthetic, and environmental health of the City to ensure that the City's local and regional transportation networks are usable and safe for all residents. The goals of the Circulation Element include offering a balance of investment and opportunities to travel by various modes to promote benefits to the environment, benefits to personal fitness, and reducing congestion and parking demand by enhancing

the community's environmental quality and encouraging an active lifestyle and improved quality of life based on the diverse population of the City (City of Carson 2023c).

2.2.2.2 Environmental Consequences

The analysis in this section is based on Table 2.2.2-1, which discusses the proposed Project alternatives and each alternative's consistency with the applicable federal, State, regional, and local plans and programs adopted for the area, including goals and policies for air and noise in the Community Impact RSA.

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Table 2.2.2-1: Consistency with State, Regional, and Local Plans

Policy/Goal	Alternative 1 No-Build Alternative	Alternative 2 Aux Lanes and Complete Streets	Alternative 3 TSM/TDM
Federal Transportation Improvement Program			
Policy Guideline: Each project in the County Transportation Improvement Plan (TIP) submitted to Southern California Association of Governments (SCAG) must be consistent with and reflect investment priorities established in the most recently adopted metropolitan transportation plan, in accordance with "Moving Ahead for Progress in the 21st Century" legislation. Each Federal Transportation Improvement Program (FTIP) project must show consistency with the project's design concept, and timely implementation as reflected in the adopted Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).	**Not Consistent.** The No-Build Alternative would not result in any changes to the existing conditions and would not implement the proposed Project as reflected in the adopted 2024–2050 RTP/SCS. Therefore, the No-Build Alternative would not be consistent with this goal.	**Consistent.** The proposed Project is included in the 2025 FTIP under Project ID# LA9918955. The proposed Project would be consistent with the design concept and timely implementation as reflected in the adopted 2024–2050 RTP/SCS. Therefore, Alternative 2 would be consistent with this goal.	**Consistent.** The proposed Project is included in the 2025 FTIP under Project ID# LA9918955. The proposed Project would be consistent with the design concept and timely implementation as reflected in the adopted 2024–2050 RTP/SCS. Therefore, Alternative 3 would be consistent with this goal.
California Transportation Plan 2050			
Goal 1: Provide a safe and secure transportation system. **Goal 4:** Improve multimodal mobility and access to destinations for all users. **Goal 6:** Maintain a high quality, resilient transportation system.	**Not Consistent.** The No-Build Alternative would not implement transportation improvements that improve transportation safety, improve multimodal mobility, and maintain a high-quality transportation system. Therefore,	**Consistent.** Alternative 2 would help improve transportation safety, improve multimodal mobility, and maintain a high-quality transportation system by improving operational efficiency in the Project Study Area.	**Consistent.** Alternative 3 would help improve transportation safety, improve multimodal mobility, and maintain a high-quality transportation system by improving operational efficiency in the Project Study Area.

Policy/Goal	Alternative 1 No-Build Alternative	Alternative 2 Aux Lanes and Complete Streets	Alternative 3 TSM/TDM
	the No-Build Alternative would not be consistent with these goals.	Therefore, Alternative 2 would be consistent with these goals.	Therefore, Alternative 3 would be consistent with these goals.
Southern California Association of Governments 2008 Regional Comprehensive Plan			
Transportation Goal: A more efficient transportation system that reduces and better manages vehicle activity.	**Not Consistent.** The No-Build Alternative would not result in any changes to the existing conditions and would not implement transportation improvements that would result in a more efficient transportation system. Therefore, the No-Build Alternative would be inconsistent with this goal.	**Consistent.** Alternative 2 would result in a more efficient transportation system by adding auxiliary lanes on I-405 that would improve mobility and operational efficiency in the Project Study Area. In addition, this alternative would incorporate Transportation Systems Management/Transportation Demand Management (TSM/TDM) and Complete Streets elements to improve traffic management and safety. Therefore, Alternative 2 would be consistent with this goal.	**Consistent.** Alternative 3 would result in a more efficient transportation system by incorporating TSM/TDM and Complete Streets elements to improve traffic management and safety. Therefore, Alternative 3 would be consistent with this goal.
Security and Emergency Preparedness Goal: Ensure transportation safety, security, and reliability for all people and goods in the region.	**Not Consistent.** The No-Build Alternative would not achieve transportation improvements that would ensure transportation safety, security, and reliability. Therefore, the No-Build Alternative would be inconsistent with this goal.	**Consistent.** Alternative 2 would help to ensure transportation safety, security, and reliability by adding auxiliary lanes on I-405. In addition, this alternative would incorporate TSM/TDM and Complete Streets elements to improve traffic management and safety. Therefore, Alternative 2 would be consistent with this goal.	**Consistent.** Alternative 3 would help to ensure transportation safety, security, and reliability by incorporating TSM/TDM and Complete Streets elements. Therefore, Alternative 3 would be consistent with this goal.

Policy/Goal	Alternative 1 No-Build Alternative	Alternative 2 Aux Lanes and Complete Streets	Alternative 3 TSM/TDM
Southern California Association of Governments 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy			
Goal 2: Maximize mobility and accessibility for all people and goods in the region.	**Not Consistent.** Because the No-Build Alternative would not result in any changes to existing conditions, this alternative would not achieve the transportation improvements projected to result under the Build Alternatives and would be inconsistent with this goal.	**Consistent.** Alternative 2 would maximize mobility and accessibility in the region by improving safety and mobility on I-405 with the addition of the northbound (NB) and southbound (SB) auxiliary lanes and adding TSM/TDM and Complete Streets elements. Alternative 2 would also result in the addition of Complete Streets elements. Therefore, Alternative 2 would be consistent with this goal.	**Consistent.** Alternative 3 would maximize mobility and accessibility in the region by using TSM/TDM and Complete Streets elements to improve safety and mobility on I-405. Therefore, Alternative 3 would be consistent with this goal.
Goal 3: Ensure travel safety and reliability for all people and goods in the region.	**Not Consistent.** Because the No-Build Alternative would not result in any changes to existing conditions, this alternative would not achieve the transportation improvements projected to result under the Build Alternatives and would be inconsistent with this goal.	**Consistent.** Alternative 2 would help to ensure transportation safety, security, and reliability by improving operational efficiency on I-405 with the addition of the NB and SB auxiliary lanes and adding TSM/TDM and Complete Streets elements. Therefore, Alternative 2 would be consistent with this goal.	**Consistent.** Alternative 3 would help to ensure transportation safety, security, and reliability by using TSM/TDM and Complete Streets elements on I-405 to improve operational efficiency. Therefore, Alternative 3 would be consistent with this goal.
Metro's 2020 Long Range Transportation Plan			
Strategy 2.7: Enhance the operation of the state highway system (2.7a. Work with Caltrans and local agencies to construct capacity-improving projects to address freeway bottlenecks).	**Not Consistent.** Because the No-Build Alternative would not result in any changes to existing conditions, this alternative would not achieve the transportation improvements projected to result under the Build Alternatives and	**Consistent.** Several freeway mainline segments and freeway/ramp junctions within the I-405 corridor between Wilmington Avenue and Main Street show heavy congestion due to weaving movement during peak periods and major	**Consistent.** Several freeway mainline segments and freeway/ramp junctions within the I-405 corridor between Wilmington Avenue and Main Street show heavy congestion due to weaving movement during peak periods and major

Policy/Goal	Alternative 1 No-Build Alternative	Alternative 2 Aux Lanes and Complete Streets	Alternative 3 TSM/TDM
	would be inconsistent with this goal.	bottlenecks going both NB and SB on I-405. Specifically, Alternative 2 would improve operational efficiencies at the SB on-ramp at Avalon Boulevard. Alternative 2 would help to ensure transportation safety, security, and reliability by improving operational efficiency on I-405 with the addition of the NB and SB auxiliary lanes and adding TSM/TDM and Complete Streets elements. Therefore, Alternative 2 would be consistent with this plan.	bottlenecks going both NB and SB on I-405. Alternative 3 would improve safety and mobility on I-405 using TSM/TDM and Complete Streets elements. Therefore, Alternative 3 would be consistent with this plan.
City of Carson General Plan			
CIR-G-3: Manage the transportation network to minimize roadway congestion, while balancing traffic Level of Service (LOS) objectives with promoting reduction in vehicle miles traveled (VMT) and considerations of community character and design. **CIR-P-15:** Coordinate with Metro and Caltrans to seek funding and implementation solutions to improve congestion from regional traffic. **CIR-P-24:** Encourage local public agencies and employers to implement TDM policies that	**Not Consistent.** Because the No-Build Alternative would not result in any changes to existing conditions, this alternative would not achieve the transportation improvements projected to result under the Build Alternatives and would be inconsistent with these goals.	**Consistent.** Alternative 2 would improve operational efficiencies on I-405, which would serve all City of Carson residents, including surrounding businesses and institutions. I-405 is a major north-south transportation route that is used primarily for international, interstate, interregional, and intraregional travel of people and carrying of goods throughout Los Angeles, Orange, Riverside, and San Bernardino Counties. With coordination between the City, Caltrans, and Metro, proper funding would be provided to the	**Consistent.** Alternative 3 would improve operational efficiencies on I-405, which would serve all City of Carson residents, including surrounding businesses and institutions. I-405 is a major north-south transportation route that is used primarily for international, interstate, interregional, and intraregional travel of people and carrying of goods throughout Los Angeles, Orange, Riverside, and San Bernardino Counties. With coordination between the City, Caltrans, and Metro, proper funding would be provided to

Policy/Goal	Alternative 1 No-Build Alternative	Alternative 2 Aux Lanes and Complete Streets	Alternative 3 TSM/TDM
promote VMT reductions. The research in this area is regularly evolving and can help identify viable and defensible VMT reduction strategies.		proposed Project to improve safety and mobility in the Project Study Area. The proposed Project improvements under Alternative 2 would benefit I-405 as a regional-serving facility. Alternative 2 would remedy deficiencies and improve operational efficiencies on the existing transportation facility and would improve vehicle flow at congested intersections and on the I-405 corridor without increasing VMT. Therefore, Alternative 2 would be consistent with these goals and policies.	improve safety and mobility in the Project Study Area. The proposed Project improvements under Alternative 3 would benefit I-405 as a regional-serving facility. Alternative 3 would remedy deficiencies and improve operational efficiencies on the existing transportation facility and would improve vehicle flow at congested intersections and on the I-405 corridor without increasing VMT. Therefore, Alternative 3 would be consistent with these goals and policies.

Sources: (Southern California Association of Governments 2008) (Southern California Association of Governments 2024b) (Los Angeles County Metropolitan Transportation Authority 2020) (City of Carson 2023a) (Fehr & Peers 2025)

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Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, construction activities would not be implemented; therefore, no adverse short-term direct or indirect impacts related to consistency with federal, State, regional, or local plans would result from the proposed Project under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Construction of Alternative 2 would be considered temporary and cease upon completion of construction. As a result, the proposed Project under Alternative 2 would not result in inconsistencies with short-term applicable federal, State, regional, and local plans and no short-term direct or indirect impacts would occur as a result of the proposed Project under Alternative 2.

Under Alternative 2, the proposed Project may require lane closures during construction. If lane closures are required, the proposed Project would incorporate a Transportation Management Plan (TMP) identified as Project Feature **PF-TR-1** (see Section 1.4, *Project Alternatives*) and would require coordination with local emergency services prior to and during construction, to minimize any travel or emergency service response times. Implementation of Project Feature **PF-TR-1** would allow at least one lane open to traffic in each direction during construction, and local access to businesses and residential properties would be maintained at all times. Additionally, with implementation of Project Feature **PF-UT-2**, local emergency services would be informed of the Project's construction schedule, lane closures (if any), and detour plans (if any) to ensure emergency response times are not disrupted during construction. Therefore, with the incorporation of Project Features **PF-TR-1** and **PF-UT-2**, no adverse short-term direct or indirect impacts would occur during construction of the proposed Project under Alternative 2.

With the incorporation of Project Features **PF-UT-2** and **PF-TR-1**, the proposed Project would be consistent with the goals listed in Table 2.2.2-1 and no adverse short-term direct or indirect impacts would occur during construction of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Similar to Alternative 2, construction of Alternative 3 would be considered temporary and cease upon completion of construction. As a result, the proposed Project under Alternative 3 would not result in inconsistencies with applicable federal, State, regional, and local plans as a result of construction-related short-term changes. Therefore, no construction-related short-term direct or indirect impacts would occur as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented; therefore, the No-Build Alternative would be inconsistent with applicable federal, State, regional, and local plans. Thus, adverse long-term direct or indirect impacts related to inconsistencies with applicable federal, State, regional, or local plans would occur as a result of the proposed Project under Alternative 1.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would improve freeway operations and reduce congestion in the Community Impact RSA. It would also improve safety, mobility, and access for pedestrians and cyclists through implementation of Complete Streets and TSM/TDM elements in the Community Impact RSA. Table 2.2.2-1 discusses the consistency with the applicable plans and programs adopted for the area under Alternative 2, including goals and policies for improving traffic and circulation, safety, mobility, and access for pedestrians and bicyclists. Therefore, Alternative 2 would be consistent with applicable federal, State, regional, and local plans. Thus, no long-term direct or indirect impacts related to inconsistencies with applicable federal, State, regional, or local plans would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Alternative 3 would improve safety, mobility, and access for pedestrians and bicyclists through implementation of Complete Streets elements in the Community Impact RSA. Table 2.2.2-1 discusses the consistency with the applicable federal, State, regional, and local plans and programs adopted for the area under Alternative 3, including goals and policies for improving safety, mobility, and access for pedestrians and bicyclists. Therefore, Alternative 3 would be consistent with applicable federal, State, regional, and local plans. Thus, no long-term direct or indirect impacts related to inconsistencies with applicable federal, State, regional, or local plans would occur as a result of the proposed Project under Alternative 3.

2.2.2.3 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are proposed.

2.2.3 Growth

2.2.3.1 Regulatory Setting

FHWA Technical Advisory T 6640.8A, *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*, states that the "…social, economic, and environmental impacts of any substantial, foreseeable, induced development should be presented for each alternative, including adverse effects on existing communities. Where possible, the distinction between planned and unplanned growth should be identified."

CEQA requires analysis of a project's potential to influence growth. The CEQA Guidelines (Section 15126.2[e]) require that environmental documents "…discuss the 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…" The CEQA Guidelines (Section 15358[a][2]) also states in its definition of indirect impacts that "…Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems."

This discussion was prepared based on the Guidance for Preparers of Growth-Related, Indirect Impact Analyses (FHWA, Caltrans, and USEPA 2006). The guidance was developed by an interagency Work Group that included representatives from the FHWA, USEPA, and Caltrans to address growth-related impact analyses specifically for highway projects in California. The "first-cut screening" portion of the analysis requires an assessment of any change in travel cost, time, or accessibility and whether these changes would affect travel behavior, travel patterns, or attractiveness of one area over another. A "first cut screening" was completed for the proposed Project, the analysis and results of which can be found in Chapter 3, *Growth*, of the proposed Project's CIA (GPA Consulting 2025), Because the proposed Project would not be expected to result in any of these changes, it was not necessary to complete the remaining steps of the guidance document or complete a full growth analysis.

2.2.3.2 Affected Environment

This section is based on the proposed Project's CIA (GPA Consulting 2025), which was completed in October 2025. There are several different study areas that are pertinent to the discussion on growth and referred to within this section. The Project Study Area is the footprint of the proposed Project, which includes all features of temporary and permanent proposed Project impacts (see Figure 2.2.3-1).

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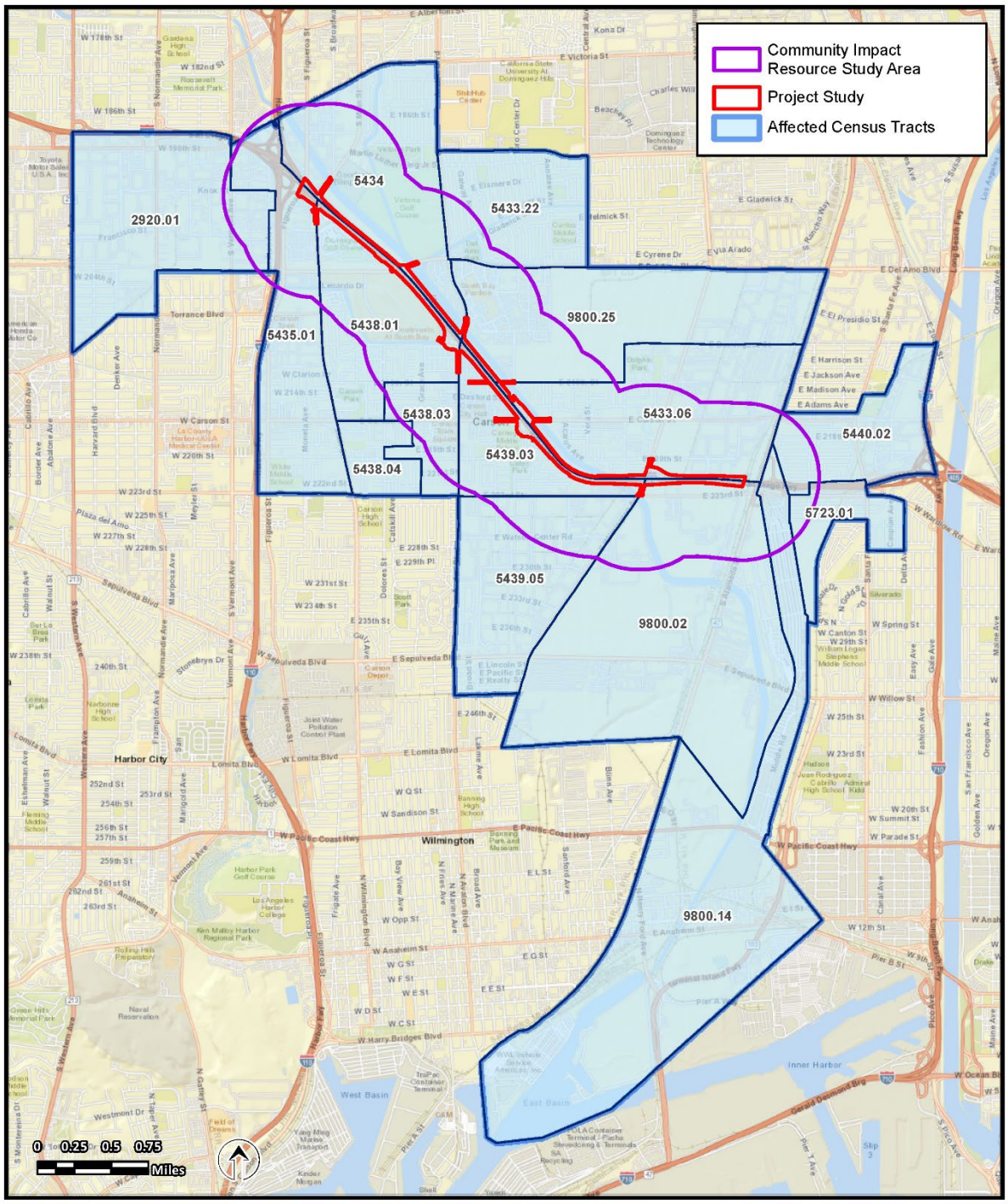

Figure 2.2.3-1: Affected Census Tracts

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The RSA for growth impacts is the same as described in Section 2.2.1, *Existing and Future Land Use* and includes a 0.5-mile buffer around the Project Study Area. The Community Impact RSA includes the communities that would be most directly impacted by the proposed Project's temporary and permanent activities. Census tracts that overlap with the Project Study Area were delineated to most accurately depict the socioeconomic setting of the communities that would be temporarily and permanently impacted by the proposed Project (Affected Census Tracts). The growth analysis for this section focused primarily on data from the Affected Census Tracts, the City, and the County to best reflect the resources directly or indirectly impacted by the proposed Project.

According to the City's General Plan (City of Carson 2023), I-405 is an essential freeway corridor that connects the City of Carson to the greater region. The Project Study Area is within an existing transportation corridor surrounded by urban development and is adjacent to a variety of land uses, including general commercial, light and heavy industrial, downtown mixed use, flex district, corridor mixed use, and low, medium, and high density residential (see Section 2.2.1*, Existing and Future Land Use*). Additional population and employment growth within the Community Impact RSA is expected to take place through the natural increase and redevelopment of existing land uses or infill development of vacant parcels (see Table 2.2.1-1 for list of planned development projects in the Community Impact RSA). Land uses within the Community Impact RSA are already established with limited opportunity for a new, unplanned, large-scale development, and significant growth is not anticipated to occur in the Community Impact RSA in the foreseeable future. The impact analysis in Section 2.2.3.3 follows the "First-Cut Screening" guidelines provided by Caltrans Guidance for Preparers of Growth-Related, Indirect Impact Analyses (Caltrans 2006).

Projected Population, Household, and Employment Estimates

Demographic information was acquired from the 2020–2045 ACS Estimates and the SCAG 2024 Final Connect SoCal Plan forecasts for cities, as well as Los Angeles County and the SCAG region. SCAG growth projections indicate that the region's population growth was slowing in the 2010s, and response to the Covid-19 pandemic in the early 2020s has resulted in a near-zero level of foreign immigration, as well as fewer births and more deaths resulting from the pandemic. As a result of these trends and the pandemic, the population in the region declined between 2019 and 2023 (SCAG 2024). Between 2020 and 2045, annual population and household growth rates in the region are projected to be 0.61 percent and 0.83 percent, respectively, while employment growth rate is projected to be approximately 0.62 percent (SCAG 2020).

Population growth from 2012 to 2022 in Los Angeles County, City of Carson, and the Affected Census Tracts is shown below in Table 2.2.3-1. From 2012 to 2022, the population increased by 1 percent in Los Angeles County, 2.8 percent in the City of Carson, and less than 1 percent in the Affected Census Tracts. The number of households increased by 4.5 percent in Los Angeles County, 4.9 percent in the City of Carson, and 11.7 percent in the Affected Census Tracts.

Table 2.2.3-1: Population and Housing Growth

Study Area	Population			Households		
	2012	2022	Percent Change	2012	2022	Percent Change
Regional						
Los Angeles County	9,840,024	9,936,690	1.0	3,218,511	3,363,093	4.5
Local						
City of Carson	91,937	94,475	2.8	24,861	26,084	4.9
Affected Census Tracts						
Affected Census Tracts Total	58,043	58,003	<1.0	13,991	15,845	11.7
Census Tract 5433.06	7,175	7,231	0.8	1,960	1,804	8.0
Census Tract 5433.22	7,096	7,040	-0.8	2,056	2,102	2.2
Census Tract 5434	4,118	3,621	-12.1	973	946	-2.8
Census Tract 5435.01	7,109	6,280	-11.7	1,997	1,914	-4.1
Census Tract 5438.01	5,413	4,805	-11.2	1,448	1,338	-7.6
Census Tract 5438.03	6,962	4,232	21.7	1,885	1,452	19.5
Census Tract 5438.04		4,243			801	
Census Tract 5439.03	3,806	3,852	1.2	957	1,092	14.1
Census Tract 5439.05	4,653	4,556	-2.0	971	1,050	8.1
Census Tract 9800.02	0	0	0	0	0	0
Census Tract 9800.25	0	411	N/A	0	206	N/A
Census Tract 2920.01	6,747	4,219	-37.5	--	1,358	N/A
Census Tract 9800.14	104	45	-56.7	34	10	-70.6
Census Tract 5723.01	3,348	3,728	11.4	914	938	2.6
Census Tract 5440.02	1,512	3,740	59.6	796	834	4.6

Source: (United States Census Bureau 2012b) (United States Census Bureau 2022b) (United States Census Bureau 2012c) (United States Census Bureau 2022c)
Notes: Census Tract 5438.02 split to make up the existing Census Tracts 5438.03 and 5438.04. Census Tract 5438.02 makes up the same geographic area as the current Census Tracts 5438.03 and 5438.04. The 2012 data for these two tracts uses the data from Census Tract 5438.02. Similarly, Census Tract 2920.01 did not exist in 2012. The 2012 data for this tract uses the data from Census Tract 2920, as it makes up the same geographical area. “N/A” means not applicable and “--" refers to data not available.

The employment rate (see Table 2.2.3-2) for the population 16 years and older increased by 8.3 percent and 7.3 percent in Los Angeles County and City of Carson, respectively, and by 25.4 percent in the Affected Census Tracts. These growth trends indicate that the Affected Census Tracts have a similar growth rate in population as Los Angeles County and City of Carson and a higher employment growth rate.

Table 2.2.3-2: Employment Rate

Study Area	2012 (Number of People Employed)	2022 (Number of People Employed)	Percent Change (2012 to 2022)	2022 (Percent Employed of people in Civilian Workforce)
Regional				
Los Angeles County	4,495,118	4,869,620	8.3	60.2
Local				
City of Carson	42,258	45,363	7.3	57.6
Affected Census Tracts				
Affected Census Tracts Total	20,116	25,225	25.4	56
Census Tract 5433.06	3,330	3,766	13.1	60.2
Census Tract 5433.22	2,891	3,100	7.2	50.3
Census Tract 5434	1,918	1,721	-10.3	59.2
Census Tract 5435.01	3,467	3,010	-13.2	57.0
Census Tract 5438.01	2,453	2,315	-5.6	58.9
Census Tract 5438.03	3,150	2,132	20.1	63.1
Census Tract 5438.04		1,652		42.3
Census Tract 5439.03	1,676	1,953	16.5	56.3
Census Tract 5439.05	1,795	2,122	18.2	91.7
Census Tract 9800.02	0	0	0	N/A
Census Tract 9800.25	0	178	N/A	45.4
Census Tract 2920.01	--	3,478	--	61.9
Census Tract 9800.14	13	9	-44.4	20.0
Census Tract 5723.01	1,232	1,780	44.5	59.8
Census Tract 5440.02	1,521	1,775	14.3	62.7

Source: (United States Census Bureau 2022a), (United States Census Bureau 2012a)
Notes: Census Tract 5438.02 split to make up the existing Census Tracts 5438.03 and 5438.04. Census Tract 5438.02 makes up the same geographic area as the current Census Tracts 5438.03 and 5438.04. The 2012 data for these two tracts uses the data from Census Tract 5438.02. In addition, there was no data available for Census Tract 2920.01 in 2012. “N/A” means not applicable.

Commute Patterns

Information regarding commute patterns within the Affected Census Tracts is provided in Table 2.2.3-3 and Table 2.2.3-4. The commute patterns are similar among residents in Los Angeles County, City of Carson, and the Affected Census Tracts. The commute time varies widely from less than 10 minutes to more than 1 hour within all of these areas; the primary means of transportation is by car, truck, or van; and of those commuters using these modes of transportation, most drive alone and do not carpool.

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Table 2.2.3-3: Travel Time to Work

Study Area	Number of People								
	<10[1]	10-14	<10[1]	20-24	<10[1]	30-34	<10[1]	45-59	<10[1]
Regional Area									
County of Los Angeles	329,392	County of Los Angeles	329,392	County of Los Angeles	329,392	County of Los Angeles	329,392	County of Los Angeles	329,392
City of Carson	3,526	City of Carson	3,526	City of Carson	3,526	City of Carson	3,526	City of Carson	3,526
Affected Census Tracts									
Affected Census Tracts Total	2,535	Affected Census Tracts Total	2,535	Affected Census Tracts Total	2,535	Affected Census Tracts Total	2,535	Affected Census Tracts Total	2,535
Census Tract 5433.06	467	Census Tract 5433.06	467	Census Tract 5433.06	467	Census Tract 5433.06	467	Census Tract 5433.06	467
Census Tract 5433.22	355	Census Tract 5433.22	355	Census Tract 5433.22	355	Census Tract 5433.22	355	Census Tract 5433.22	355
Census Tract 5434	216	Census Tract 5434	216	Census Tract 5434	216	Census Tract 5434	216	Census Tract 5434	216
Census Tract 5435.01	318	Census Tract 5435.01	318	Census Tract 5435.01	318	Census Tract 5435.01	318	Census Tract 5435.01	318
Census Tract 5438.01	119	Census Tract 5438.01	119	Census Tract 5438.01	119	Census Tract 5438.01	119	Census Tract 5438.01	119
Census Tract 5438.03	33	Census Tract 5438.03	33	Census Tract 5438.03	33	Census Tract 5438.03	33	Census Tract 5438.03	33
Census Tract 5438.04	75	Census Tract 5438.04	75	Census Tract 5438.04	75	Census Tract 5438.04	75	Census Tract 5438.04	75

Study Area	Number of People								
	<10[1]	10-14	<10[1]	20-24	<10[1]	30-34	<10[1]	45-59	<10[1]
Census Tract 5439.03	292	Census Tract 5439.03	292	Census Tract 5439.03	292	Census Tract 5439.03	292	Census Tract 5439.03	292
Census Tract 5439.05	82	Census Tract 5439.05	82	Census Tract 5439.05	82	Census Tract 5439.05	82	Census Tract 5439.05	82
Census Tract 9800.02	--	Census Tract 9800.02	--	Census Tract 9800.02	--	Census Tract 9800.02	--	Census Tract 9800.02	--
Census Tract 9800.25	0	Census Tract 9800.25	0	Census Tract 9800.25	0	Census Tract 9800.25	0	Census Tract 9800.25	0
Census Tract 2920.01	187	Census Tract 2920.01	187	Census Tract 2920.01	187	Census Tract 2920.01	187	Census Tract 2920.01	187
Census Tract 9800.14	4	Census Tract 9800.14	4	Census Tract 9800.14	4	Census Tract 9800.14	4	Census Tract 9800.14	4
Census Tract 5723.01	57	Census Tract 5723.01	57	Census Tract 5723.01	57	Census Tract 5723.01	57	Census Tract 5723.01	57
Census Tract 5440.02	330	Census Tract 5440.02	330	Census Tract 5440.02	330	Census Tract 5440.02	330	Census Tract 5440.02	330

Source: (United States Census Bureau 2023)
[1]Travel time in minutes

Table 2.2.3-4: Means of Transportation to Work

Study Area	Number of People							
	Total	Car, Truck, or Van		Public Transportation	Bicycle	Walked	Taxi, Motorcycle, or other means	Worked at Home
		Drove Alone	Carpooled					
Regional Area								
County of Los Angeles	4,705,602	3,124,520	437,621	197,635	28,234	112,934	89,406	715,252
City of Carson	42,999	33,625	3,569	731	43	645	903	3,483
Affected Census Tracts								
Affected Census Tracts Total	26,410	20,373	2,255	526	423	75	717	2,047
Census Tract 5433.06	3,485	2,474	404	0	122	0	70	411
Census Tract 5433.22	3,087	2,371	77	0	12	6	201	417
Census Tract 5434	1,659	1,345	119	22	33	0	0	139
Census Tract 5435.01	2,863	2,170	295	54	117	0	14.315	215
Census Tract 5438.01	2,156	1,617	274	110	22	0	51.744	82
Census Tract 5438.03	2,078	1,652	94	44	0	0	122.602	168
Census Tract 5438.04	1,628	1,376	98	68	24	0	24.42	41
Census Tract 5439.03	1,910	1,624	134	0	6	0	13.37	136
Census Tract 5439.05	2,041	1,574	304	22	45	0	44.902	53
Census Tract 9800.02	0	--	--	--	--	--	--	--
Census Tract 9800.25	206	197	0	0	0	0	0	9
Census Tract 2920.01	1,654	1,207	131	56	0	30	137	89
Census Tract 9800.14	4	0	4	0	0	0	0	0
Census Tract 5723.01	1,774	1,281	170	135	18	39	27	108
Census Tract 5440.02	1,865	1,485	151	15	24	0	11	179

Source: (United States Census Bureau 2023)

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2.2.3.3 Environmental Consequences

Direct, growth-influencing impacts are generally associated with the provision of urban services and the extension of infrastructure to an undeveloped area. The extension of services and facilities to an individual site can reduce development constraints for other nearby areas and can serve to influence further development in the vicinity. Indirect or secondary-growth influencing impacts consist of growth in the area by additional demand for housing, employment, and goods and services associated with population increases caused by, or attached to, new development.

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, construction activities would not be implemented; therefore, no short-term indirect impacts on growth would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Construction of Alternative 2 would result in a temporary and minor increase in employment associated with new construction jobs. The addition of jobs and construction staff would result in short-term indirect impacts; however, employment numbers would be expected to return to existing conditions following construction. Therefore, no short-term indirect adverse impacts on growth would result from the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management and Transportation Demand Management

Similar to Alternative 2, Alternative 3 would result in a temporary and minor increase in employment associated with new construction jobs, which would return to existing conditions following construction. Therefore, no short-term indirect adverse impacts on growth would result from the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented; therefore, no long-term indirect impacts on growth would result under the No-Build Alternative. However, Alternative 1 would not support the City of Carson's land use goals.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would not provide new access to surrounding areas that could influence additional development and growth beyond what is already planned by the City. Alternative 2 would not result in long-term changes to accessibility through increased

travel cost or impediments to businesses and/or services in the immediate location or vicinity of the proposed Project. No vacant lands that are currently inaccessible would become permanently accessible, nor would they be more likely to be developed. The addition of auxiliary lanes would create benefits for travelers by improving operations.

Alternative 2 is not expected to influence travel behavior, trip patterns, or the attractiveness of the Community Impact RSA to development over other areas. This alternative would not remove an impediment to growth; rather, it would address existing operational and capacity deficiencies. Therefore, Alternative 2 would not influence the amount, location, and/or distribution of growth in and around the Community Impact RSA. In addition, Alternative 2 would not influence land development, encourage changes in population density, or construction of additional housing. This alternative would include improvements to the circulation system that would support and be consistent with the City's land use goals and would be compatible with adjacent and surrounding land uses. Therefore, no long-term indirect impacts on growth would result from the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management and Transportation Demand Management

Alternative 3 would not include the construction of auxiliary lanes along I-405 but would include the same Complete Streets and TSM/TDM elements as Alternative 2. Alternative 3 would not provide new access, result in long-term changes to accessibility, increase potential for increased or accelerated development, or remove impediments to growth. Alternative 3 would support the circulation needs of existing and planned developments and address existing operational and capacity deficiencies. Therefore, Alternative 3 would not influence the amount, location, and/or distribution of growth in and around the Community Impact RSA. Alternative 3 would support and be consistent with the City's land use goals and would be compatible with adjacent and surrounding land uses. Therefore, no long-term indirect impacts on growth would result from the proposed Project under Alternative 3.

2.2.3.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are proposed.

2.2.4 Community Character and Cohesion

2.2.4.1 Regulatory Setting

NEPA established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). The FHWA in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest. This requires considering adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under CEQA, an economic or social change by itself is not considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since the proposed Project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the proposed Project's effects.

2.2.4.2 Affected Environment

This section is based on the proposed Project's CIA (GPA Consulting 2025), which was completed in October 2025. Community character and cohesion refer to the social, economic, and cultural identities that define a community and create a sense of place and belonging for the community members. The RSA used to evaluate community character and cohesion is the same as the Community Impact RSA described in Section 2.2.1, *Existing and Future Land Use* (see Figure 2.2.1-1), which includes a 0.5-mile buffer around the Project Study Area. The analysis below describes the characteristics of community character and cohesion in the Community Impact RSA. The Community Impact RSA extends into a small part of the City of Los Angeles on the west and east sides of the Community Impact RSA and into a small part of the City of Long Beach on the southeast side of the Community Impact RSA. However, the local analysis is limited to the City of Carson to best reflect the affected environment. The Community Impact RSA was created to include the communities most directly impacted by the temporary and permanent activities of the proposed Project. The Affected Census Tracts (see Figure 2.2.3-1) were delineated to most accurately depict the socioeconomic setting of the communities that would be temporarily and permanently impacted by the proposed Project and includes census tracts that overlap with the Community Impact RSA. The analysis for this section focuses primarily on data from the Affected Census Tracts, the City, and the County to best reflect the resources directly or indirectly impacted by the Proposed Project.

The proposed Project is not anticipated to result in strong public controversy, and public hearings and meetings are not required under NEPA. However, Caltrans and Metro will be conducting a public hearing and outreach with the public. To comply with the requirements of NEPA, the Draft Environmental Assessment (EA) would be circulated to

the public for a minimum of 30 days and responses to public comments would be included in the Final EA (see Chapter 4, *Comments and Coordination*, for additional information regarding circulation).

Population and Housing

Regional Population Characteristics

As discussed in Section 2.2.3, *Growth*, the Affected Census Tracts have lower growth rates compared to the County and the City (see Table 2.2.3-1). Table 2.2.4-1 shows the distribution of population by age in the County, City, and the Affected Census Tracts. Census Tract 9800.02 does not have any residents; therefore, the discussion below does not include this tract because it impacts the average and is not a realistic representation of the population characteristics within the Affected Census Tracts. Specific tract information can be found in Table 2.2.4-1. The population under 5 years old is 5.4 percent in the County, 4.5 percent in the City, and 3.9 percent in the Affected Census Tracts. The population under 20 years old is 23.6 percent in the County, 22.2 percent in the City and 20 percent in the Community Impact RSA. The population 65 years and over is 14.3 percent in the County, 17.2 percent in the City, and 13.1 percent in the Affected Census Tracts (United States Census Bureau 2022f). This data indicates that the population distribution in the Affected Census Tracts is similar to the County and City.

Housing

In 2022, approximately 50 percent of the total housing units in the County were owner occupied (United States Census Bureau 2022c). Of the housing units in the City, 67 percent were occupied by homeowners and 24 percent were occupied by renters (see Table 2.2.4-2). The percentage of owner-occupied housing units in the Affected Census Tracts was approximately 68 percent, which is a greater percentage than the County but less than the City. This indicates that community cohesion is less prevalent than other areas of the City, because renters tend to move more frequently and have looser ties to the community than home owners.

The number of family households in the County is approximately double the number of non-family households. The number of family households in the City is nearly five times greater than non-family households, with the majority of households in the City being two-person households (United States Census Bureau 2022c). The number of family households in the Affected Census Tracts is nearly six times the number of non-family households, with the majority of family households in the Affected Census Tracts being two-person households. The number of family households in the City and Affected Census Tracts are substantially higher than the number of non-family households (see Table 2.2.4-3).

Table 2.2.4-1: 2022 Population by Age Cohort

Study Area	≤5 (Years)	5 to 9 (Years)	10 to 14 (Years)	15 to 19 (Years)	20 to 24 (Years)	25 to 34 (Years)	35 to 44 (Years)	45 to 54 (Years)	55 to 59 (Years)	60 to 64 (Years)	65 to 74 (Years)	75 to 84 (Years)	≥85 (Years)	Total
Los Angeles County	538,630 (5.4%)*	559,182 (5.6%)	627,684 (6.3%)	625,715 (6.3%)	675,829 (6.8%)	1,584,416 (15.9%)	1,380,984 (13.9%)	1,317,158 (13.3%)	630,019 (6.3%)	581,217 (5.8%)	819,236 (8.2%)	404,671 (4.2%)	191,949 (1.9%)	9,936,690
City of Carson	4,248 (4.5%)	4,518 (4.8%)	5,772 (6.1%)	6,465 (6.8%)	6,037 (6.4%)	13,423 (14.2%)	11,794 (12.5%)	12,314 (13.0%)	6,567 (7.0%)	7,092 (7.5%)	9,502 (10.1%)	4,534 (4.8%)	2,209 (2.3%)	94,475
Socio-economic Study Area	2,591 (4.8%)	2,427 (4.5%)	3,393 (6.3%)	2,837 (5.3%)	3,565 (6.6%)	7,461 (13.9%)	7,359 (13.7%)	7,550 (14.0%)	3,402 (6.3%)	4,561 (8.5%)	4,832 (9.0%)	2,514 (4.7%)	1,292 (2.4%)	53,784
Census Tract 5433.06	420 (5.8%)	260 (3.6%)	594 (8.2%)	329 (4.5%)	427 (5.9%)	838 (11.6%)	1,067 (14.8%)	1,285 (17.8%)	376 (5.2%)	544 (7.5%)	732 (10.1%)	242 (3.3%)	117 (1.6%)	7,231
Census Tract 5433.22	62 (0.9%)	314 (4.5%)	441 (6.3%)	214 (3.0%)	637 (9.0%)	835 (11.9%)	561 (8.0%)	685 (9.7%)	677 (9.6%)	1,081 (15.4%)	707 (10.0%)	636 (9.0%)	190 (2.7%)	7,040
Census Tract 5434	133 (3.7%)	231 (6.4%)	332 (9.2%)	183 (5.1%)	181 (5.0%)	423 (11.7%)	466 (12.9%)	582 (16.1%)	123 (3.4%)	287 (7.9%)	423 (11.7%)	176 (4.9%)	81 (2.2%)	3,621
Census Tract 5435.01	282 (4.5%)	248 (3.9%)	411 (6.5%)	375 (6.0%)	388 (6.2%)	714 (11.4%)	840 (13.4%)	659 (10.5%)	459 (7.3%)	678 (10.8%)	818 (13.0%)	260 (4.1%)	148 (2.4%)	6,280
Census Tract 5438.01	338 (7.0%)	149 (3.1%)	307 (6.4%)	374 (7.8%)	378 (7.9%)	667 (13.9)	572 (11.9%)	618 (12.9%)	267 (5.6%)	371 (7.7%)	470 (9.8%)	191 (4.0%)	103 (2.1%)	4,805
Census Tract 5438.03	208 (4.9%)	221 (5.2%)	324 (7.7%)	286 (6.8%)	128 (3.0%)	981 (23.2%)	420 (9.9%)	513 (12.1%)	307 (7.3%)	222 (5.2%)	290 (6.9%)	193 (4.6%)	139 (3.3%)	4,232
Census Tract 5438.04	58 (1.4%)	87 (2.1%)	105 (2.5%)	542 (12.8%)	426 (10.0%)	553 (13.0%)	303 (7.1%)	768 (18.1%)	159 (3.7%)	282 (6.6%)	455 (10.7%)	159 (3.7%)	346 (8.2%)	4,243
Census Tract 5439.03	107 (2.8%)	101 (2.6%)	162 (4.2%)	179 (4.6%)	332 (8.6%)	636 (16.3%)	509 (13.2%)	553 (14.4%)	244 (6.3%)	271 (7.0%)	457 (11.9%)	224 (5.8%)	87 (2.3%)	3,852
Census Tract 5439.05	331 (7.3%)	289 (6.3%)	478 (10.5%)	343 (7.5%)	274 (6.0%)	797 (17.5%)	723 (15.9%)	523 (11.5%)	204 (4.5%)	212 (4.7%)	239 (5.2%)	98 (2.2%)	45 (1.0%)	4,556
Census Tract 9800.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Census Tract 9800.25	7 (1.7)	12 (2.9)	0 (0)	57 (13.9)	21 (5.1)	75 (18.2)	23 (5.6)	93 (22.6)	0 (0)	15 (3.6)	90 (21.9)	18 (4.4)	0 (0)	411
Census Tract 2920.01	175 (4.1)	201 (4.8)	294 (7.4)	340 (8.1)	335 (7.9)	598 (12.9)	608 (14.4)	592 (14.1)	344 (8.2)	101 (2.4)	440 (10.4)	129 (3.1)	62 (1.5)	4,219
Census Tract 9800.14	0	0	0	0	0	0	8 (17.8)	9 (20.0)	6 (13.3)	0	0	0	22 (48.9)	45
Census Tract 5723.01	90 (2.4)	270 (7.2)	363 (9.7)	165 (4.4)	368 (9.9)	612 (16.5)	682 (18.3)	377 (10.1)	207 (5.6)	304 (8.2)	185 (4.9)	92 (2.5)	13 (0.3)	3,348
Census Tract 5440.02	442 (11.8)	265 (7.1)	176 (4.7)	110 (2.9)	176 (4.7)	713 (19.1)	577 (15.4)	293 (7.8)	336 (9.0)	193 (5.2)	258 (6.9)	96 (2.6)	105 (2.8)	3,740

Source: (United States Census Bureau 2022f)
* = Parenthesis below the total number of the age range in the population area represents the percentage of that population within the whole Affected Census Tracts.
% = percent

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Table 2.2.4-2: 2022 Population in Housing by Tenure

Study Area	Total	Owner Occupied	Renter Occupied
Los Angeles County	9,735,169	4,838,164 (49.6%)	4,897,005 (51.4%)
City of Carson	92,749	70,537 (76.1%)	22,212 (23.9%)
Affected Census Tracts Total	56,736	38,692 (68.2%)	18,044 (31.8%)
Census Tract 5433.06	7,189	5,706 (79.3%)	1,483 (20.7%)
Census Tract 5433.22	6,894	6,437 (93.4%)	457 (6.6%)
Census Tract 5434	3,598	2,959 (82.2%)	639 (17.8%)
Census Tract 5435.01	6,020	3,742 (62.2%)	2,278 (37.8%)
Census Tract 5438.01	4,767	3,868 (81.1%)	899 (19.9%)
Census Tract 5438.03	4,204	2,843 (67.6%)	1,361 (32.4%)
Census Tract 5438.04	3,562	2,778 (77.9%)	784 (22.1%)
Census Tract 5439.03	3,829	3,106 (81.1%)	723 (18.9%)
Census Tract 5439.05	4,555	1,686 (37.0%)	2,869 (63.0%)
Census Tract 9800.02	0	0 (0.0%)	0 (0.0%)
Census Tract 9800.25	411	0 (0.0%)	411 (100%)
Census Tract 2920.01	4,219	821 (19.5%)	3,398 (80.5%)
Census Tract 9800.14	45	0 (0.0%)	45 (100%)
Census Tract 5723.01	3,703	1,985 (53.6%)	1,718 (46.4%)
Census Tract 5440.02	3,740	2,761 (73.8%)	979 (26.2%)

Source: (United States Census Bureau 2022c)
%=percent

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Table 2.2.4-3: 2022 Household Type by Household Size

Census Tracts	Total	Family	2**	3**	4**	5**	6**	7 or more**	Non-Family	1**	2**	3**	4**	5**	6**	7 or more**
Los Angeles County*	**3,363**	**2,218**	**731**	**532**	**487**	**259**	**111**	**94**	**1,144**	**870**	**219**	**33**	**14**	**3**	**1**	**1**
City of Carson	**26,084**	**21,233**	**5,773**	**4,666**	**4,884**	**2,939**	**1,457**	**1,514**	**4,851**	**4,095**	**529**	**77**	**111**	**35**	**0**	**4**
Affected Census Tracts	**14,599**	**11,601**	**4,122**	**2,142**	**2,785**	**1,782**	**980**	**889**	**2,998**	**2,449**	**435**	**24**	**90**	**0**	**0**	**0**
Census Tract 5433.06	1,804	1,551	342	364	371	185	174	115	253	175	66	12	0	0	0	0
Census Tract 5433.22	2,102	1,800	653	549	357	199	7	35	302	235	0	0	67	0	0	0
Census Tract 5434	946	776	178	144	188	123	45	98	170	125	39	6	0	0	0	0
Census Tract 5435.01	1,914	1,198	269	171	280	218	156	104	716	668	33	0	15	0	0	0
Census Tract 5438.01	1,338	1,051	249	215	246	158	114	69	287	241	46	0	0	0	0	0
Census Tract 5438.03	1,452	1,140	522	93	307	158	60	0	312	312	0	0	0	0	0	0
Census Tract 5438.04	801	714	171	124	160	61	17	181	87	8	79	0	0	0	0	0
Census Tract 5439.03	1,092	864	160	199	248	195	35	27	228	178	42	0	8	0	0	0
Census Tract 5439.05	1,050	854	1221	78	236	145	163	110	196	159	37	0	0	0	0	0
Census Tract 9800.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Census Tract 2920.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Census Tract 9800.25	206	90	64	5	7	14	0	0	116	98	18	0	0	0	0	0
Census Tract 9800.14	10	10	4	6	0	0	0	0	0	0	0	0	0	0	0	0
Census Tract 5734.01	1,050	854	122	78	236	145	163	110	196	159	37	0	0	0	0	0
Census Tract 5440.02	834	699	167	116	149	181	46	40	135	91	38	6	0	0	0	0

Source: (United States Census Bureau 2022b)
*Numbers in thousands; **Persons in household; ND = No data

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Race and Ethnicity

As shown in Table 2.2.4-4, the Hispanic or Latino population is 48.7 percent in the County, 40.3 percent in the City, and 41.9 percent in the Affected Census Tracts. Of note, some of the census tracts have substantially higher percentages of Hispanic or Latino populations, such as Census Tracts 5439.05, 5723.01, and 5440.02, which are 77.1, 67.3, and 68.9 percent, respectively. The White Alone population is 25.2 percent in the County and 6 percent in the City and Affected Census Tracts; this demographic group is for those that identify as White Alone and do not identify with another race category.

The Black or African American population is 7.6 percent in the County, 22.3 percent in the City, and 23.4 percent in the Affected Census Tracts. Of note, some of the census tracts have substantially higher percentages of Black or African American populations, such as Census Tracts 5433.22, 9800.25, and 9800.14, which are 74.1, 81.5, and 80.0 percent, respectively. The Asian population is 14.6 percent in the County, 25.0 percent in the City, and 22.6 percent in the Affected Census Tracts. Of note, some of the census tracts have substantially higher percentages of Asian population populations, such as Census Tracts 5435.01, 5438.03, and 5438.04, which are 46.6, 40.4, and 54.1 percent, respectively. The percentages of all other racial categories are relatively small compared to the categories discussed above.

Neighborhoods/Communities/Community Character

The City of Carson is in the southern portion of Los Angeles County, approximately 14 miles south of Downtown Los Angeles. The Project Study Area is located along I-405, which acts as a physical barrier dividing the neighborhoods of the City of Carson to the west and east. The Affected Census Tracts include the neighborhoods of Carson Estates, Northern, Civic Center, and One Eighty Acres, which make up some of Carson's western neighborhoods. The City of Carson is bordered by the cities of Torrance and Los Angeles to the west, the cities of Gardena and Compton to the north, the City of Long Beach to the east, and neighborhoods of Wilmington and Harbor City to the south (see Figure 2.2.3-1).

Community cohesion is the degree to which residents have a "sense of belonging" and a level of commitment to their neighborhood, or a strong attachment to neighbors, groups, and institutions, usually because of a continued association over time. Table 2.2.4-5 shows that 49.7 percent of the population in the County, 76.1 percent of the population of the City, and 67.4 percent of the population in the Affected Census Tracts live in owner-occupied housing.

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Table 2.2.4-4: Population by Ethnicity and Race

Area	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some other race alone	Two or more races	Hispanic or Latino
Los Angeles County	2,505,177 (25.2%)	753,155 (7.6%)	18,662 (0.2%)	1,452,646 (14.6%)	20,597 (0.2%)	49,953 (0.5%)	298,906 (3.0%)	4,837,594 (48.7%)
City of Carson	5,992 (6.3%)	21,049 (22.3%)	95 (0.1%)	23,659 (25.0%)	1,738 (1.8%)	315 (0.3%)	3,585 (3.8%)	38,042 (40.3%)
Affected Census Tracts	3,992 (6.8%)	9,811 (23.4%)	79 (0.2%)	14,710 (22.6%)	1,378 (1.7%)	225 (0.4%)	2,103 (3.1%)	25,702 (41.9%)
Census Tract 5433.06	730 (10.1%)	740 (10.2%)	0 (0.0%)	1,935 (26.8%)	621 (8.6%)	0 (0.0%)	545 (7.5%)	2,660 (36.8%)
Census Tract 5433.22	292 (4.1%)	5,214 (74.1%)	0 (0.0%)	158 (2.2%)	295 (4.2%)	0 (0.0%)	396 (5.6%)	685 (9.7%)
Census Tract 5434	164 (4.5%)	822 (22.7%)	0 (0.0%)	475 (13.1%)	0 (0.0%)	6 (0.2%)	62 (1.7%)	2,092 (57.8%)
Census Tract 5435.01	410 (6.5%)	427 (6.8%)	0 (0.0%)	2,929 (46.6%)	94 (1.5%)	0 (0.0%)	158 (2.5%)	2,259 (36.0%)
Census Tract 5438.01	352 (7.3%)	426 (8.9%)	51 (1.1%)	1,294 (26.9%)	30 (0.6%)	22 (0.5%)	210 (4.4%)	2,420 (50.4%)
Census Tract 5438.03	342 (8.1%)	259 (6.1%)	0 (0.0%)	1,708 (40.4%)	96 (2.3%)	197 (4.7%)	52 (1.2%)	1,578 (37.3%)
Census Tract 5438.04	542 (12.8%)	272 (6.4%)	0 (0.0%)	2,294 (54.1%)	0 (0.0%)	0 (0.0%)	64 (1.5%)	1,071 (25.2%)
Census Tract 5439.03	327 (8.7%)	119 (3.1%)	9 (0.2%)	1,360 (35.3%)	24 (0.6%)	0 (0.0%)	108 (2.8%)	1,905 (49.5%)
Census Tract 5439.05	117 (2.6%)	415 (9.1%)	7 (0.2%)	239 (5.2%)	93 (2.0%)	0 (0.0%)	173 (3.8%)	3,512 (77.1%)
Census Tract 9800.02	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Census Tract 9800.25	5 (1.2%)	335 (81.5%)	4 (1.0%)	29 (7.1%)	0 (0.1%)	0 (0.0%)	18 (4.4%)	20 (4.9%)
Census Tract 2920.01	246 (5.8%)	436 (10.6%)	0 (0.0%)	1,019 (24.2%)	0 (0.0%)	0 (0.0%)	108 (2.6%)	2,410 (57.1%)
Census Tract 9800.14	5 (11.1%)	36 (80.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (8.9%)
Census Tract 5723.01	277 (7.4%)	132 (3.5%)	0 (0.0%)	673 (18.1%)	57 (1.5%)	0 (0.0%)	80 (2.1%)	2,509 (67.3%)
Census Tract 5440.02	183 (4.9%)	178 (4.8%)	8 (0.2%)	597 (16.0%)	68 (1.8%)	0 (0.0%)	129 (3.4%)	2,577 (68.9%)

Source: (United States Census Bureau 2022e);%=percent

Table 2.2.4-5: 2022 Total Population in Owner-Occupied Housing by Tenure

Housing Tenure	Total Population in occupied units	Owner-occupied	Moved in 2021 or later	Moved in 2018 to 2020	Moved in 2010 to 2017	Moved in 2000 to 2009	Moved in 1990 to 1999	Moved in 1989 or earlier
Los Angeles County	9,735,169	4,838,164 (49.7%)	93,933 (1.9%)	404,185 (8.4%)	1,378,822 (28.5%)	1,259,967 (26.0%)	879,428 (18.2%)	821,829 (17.0%)
City of Carson	92,749	70,537 (76.1%)	924 (1.3%)	4,860 (6.9%)	17,053 (24.2%)	17,826 (25.3%)	15,633 (22.2%)	14,241 (20.2%)
Affected Census Tracts	56,736	38,692 (68.2%)	440 (0.8%)	2,802 (4.9%)	9,122 (16.1%)	8,576 (15.1%)	9,693 (17.1%)	8059 (14.2%)
Census Tract 5433.06	7,189	5,706 (79.4%)	0 (0.0%)	1,054 (18.5%)	2,162 (37.9%)	872 (15.3%)	836 (14.7%)	782 (13.7%)
Census Tract 5433.22	6,894	6,437 (93.4%)	0 (0.0%)	718 (11.2%)	759 (11.8%)	949 (14.7%)	1,639 (25.5%)	2,372 (36.8%)
Census Tract 5434	3,598	2,959 (82.2%)	94 (3.2%)	70 (2.4%)	313 (10.6%)	880 (29.7%)	424 (14.3%)	1,178 (39.8%)
Census Tract 5435.01	6,020	3,742 (62.2%)	0 (0.0%)	251 (6.7%)	1,208 (32.3%)	1,283 (34.3%)	668 (17.8%)	332 (8.9%)
Census Tract 5438.01	4,767	3,868 (81.1%)	65 (1.7%)	245 (6.3%)	1,018 (26.3%)	1,048 (27.1%)	999 (25.8%)	493 (12.7%)
Census Tract 5438.03	4,204	2,843 (67.6%)	158 (5.6%)	47 (1.7%)	1,204 (42.3%)	253 (8.9%)	797 (28.0%)	384 (13.5%)
Census Tract 5438.04	3,562	2,778 (78.0%)	0 (0.0%)	34 (1.2%)	251 (9.0%)	445 (16.0%)	1,758 (63.3%)	290 (10.4%)
Census Tract 5439.03	3,829	3,106 (81.1%)	0 (0.0%)	74 (2.4%)	672 (21.6%)	1,233 (39.7%)	314 (10.1%)	813 (26.2%)
Census Tract 5439.05	4,555	1,686 (37.0%)	25 (1.5%)	115 (6.8%)	152 (9.0%)	610 (36.1%)	416 (24.7%)	368 (21.8%)
Census Tract 9800.02	0	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Census Tract 9800.25	411	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Census Tract 2920.01	4,219	821 (19.5%)	0 (0.0%)	0 (0.0%)	68 (1.6%)	430 (10.2%)	18 (0.4%)	305 (7.2%)
Census Tract 9800.14	45	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Census Tract 5723.01	3,703	1,985 (53.6%)	98 (2.6%)	48 (1.3%)	896 (24.1%)	161 (4.3%)	449 (12.1%)	333 (9.0%)
Census Tract 5440.02	3,740	2,761 (73.8%)	0 (0.0%)	146 (3.9%)	419 (11.2%)	412 (11.0%)	1,375 (36.8%)	409 (10.9%)

Source: (United States Census Bureau 2022d)

A large portion of residents in owner-occupied units have lived in their homes for over 10 years, with the largest percentage of residents having moved in between 2000 and 2009, showing a continued association to their community over time. The majority of the population in owner-occupied housing has lived there since prior to 2018. This shows there is little change in the community character or cohesion in the last few years because most people in owner-occupied housing have lived in the community for over 6 years.

The Affected Census Tracts include various community activities and places of interest that provide outlets for community interaction that can strengthen community character and cohesion. These activities and amenities allow residents to develop a connection with their community and familiarity with their city. Some of the activities and attractions in the Affected Census Tracts that overlap with the Community Impact RSA are shown in Table 2.2.4-6. These community activities and places of interest are included in the analysis, and the remainder in the Affected Census Tracts that are outside of the Community Impact RSA are not included because the distance from the Project Study Area would preclude the potential for them to be impacted by the proposed Project.

Table 2.2.4-6: Community Activities and Places of Interest

Place of Interest	Community Activities
Victoria Community Regional Park	Youth sports, educational courses, fitness classes, after school events, and local art events
The Links at Victoria Golf Course	Recreational Golf
Porsche Experience Center Los Angeles	Porsche education and learning experiences

Source: (GPA Consulting 2025)

Economic Conditions

Community cohesion is often created through frequent personal contact. Oftentimes, this occurs at places of business while working, shopping, or while conducting other commerce-related activities. Shopping and employment centers are often epicenters for interaction in the community. Additionally, the benefit of having employers where community members work is also linked to other lifestyle factors that affect community character. Therefore, impacts on employment areas may affect the cohesiveness of the surrounding communities on multiple levels. This section describes the existing economic conditions in the Affected Census Tracts and evaluates the potential for the proposed Project to create any temporary or permanent impacts.

Regional Economy

As a result of shopping and employment centers historically acting as an epicenter for interaction in the community, and the Covid-19 pandemic, the population in the region declined between 2019 and 2023 (Southern California Association of Governments 2024). Between 2020 and 2045, annual population and household growth rates in the

region are projected to be 0.61 percent and 0.83 percent, respectively, while employment growth rate is projected to be approximately 0.62 percent (Southern California Association of Governments 2020).

Regional employment in the Manufacturing sector is expected to decline from 7.8 percent to 5.1 percent by 2045; however, a few sectors are expected to have rapid growth during the same period, such as Construction (0.4 percent), Transportation and Warehousing (0.6 percent), and Health Care and Social Assistance (4.8 percent) (Southern California Association of Governments 2024) (see Table 2.2.4-7). Together, employment in these sectors is expected to increase by approximately 1.1 million employees by 2045.

Table 2.2.4-7: 2020–2045 Southern California Association of Governments Employment Forecast

Jobs by Sector	2020 Number (Percent)	2045 Number (Percent)	Difference (Percent)
Total Farm	60,000 (0.7)	57,000 (0.6)	-0.1
Natural Resources and Mining	4,000 (0.1)	5,000 (0.0)	-0.1
Utilities	45,000 (0.5)	45,000 (0.5)	0
Construction	411,000 (4.9)	536,000 (5.3)	0.4
Manufacturing	656,000 (7.8)	514,000 (5.1)	-2.7
Wholesale Trade	394,000 (4.7)	403,000 (4.0)	-0.7
Retail Trade	841,000 (10.0)	889,000 (8.9)	-1.1
Transportation and Warehousing	382,000 (4.6)	522,000 (5.2)	0.6
Information	291,000 (3.5)	299,000 (3.0)	-0.5
Finance and Insurance	268,000 (3.2)	273,000 (2.7)	-0.5
Real Estate and Rental and Leasing	168,000 (2.0)	190,000 (1.9)	-0.1
Professional, Scientific and Technical Services	535,000 (6.4)	612,000 (6.1)	-0.3
Management of Companies and Enterprises	102,000 (1.2)	104,000 (1.0)	-0.2
Administrative and Support and Waste Services	610,000 (7.3)	734,000 (7.3)	0
Educational Services	716,000 (8.5)	850,000 (8.5)	0
Health Care and Social Assistance	1,264,000 (15.1)	2,002,000 (19.9)	4.8
Arts, Entertainment, and Recreation	169,000 (2.0)	230,000 (2.3)	0.3
Accommodation and Food Service	862,000 (10.3)	1,059,000 (10.5)	0.2
Other Services	346,000 (4.1)	398,000 (4.0)	-0.1
Public Administration	264,000 (3.2)	327,000 (3.3)	0.1
Total	8,389,000	10,049,000	-

Source: (Southern California Association of Governments 2024)

Employment and Income

According to the American Community Survey, the mean household income in the City has increased steadily between 2018 and 2022, with an increase of nearly $30,000 in

mean household income among residents during the 5-year span (United States Census Bureau 2022a) (see Table 2.2.4-8).

Table 2.2.4-8: City of Carson Income, 2018-2022

Year	Mean Household Income
2022	123,201
2021	110,851
2020	104,983
2019	99,281
2018	93,927

Source: (United States Census Bureau 2022a)

Employment in the Southern California Association of Governments (SCAG) region is projected to grow by 19.8 percent, from 8,389,000 to 10,049,000 employees between 2020 and 2045. During the same period, employment in the County is forecast to grow by 20.3 percent, from 4,743,000 to 5,382,000 employees. Between 2012 and 2040, the City is forecast to grow by 19.1 percent, from 58,500 to 69,700 employees (Southern California Association of Governments 2024).

The unemployment rate in the County is 7 percent, which is slightly higher than the unemployment rate for the City at 6.9 percent (see Table 2.2.4-9). In the City, the largest percentage of the civilian employed population 16 years and over is in Management, Business, Science, and Arts Occupations at 33.6 percent. This is followed by Sales and Office Occupations at 21.1 percent.

Table 2.2.4-9: 2022 Employment Characteristics

	Los Angeles County	Carson
Employment Status		
Civilian labor force	5,235,164	48,702
Employed	4,869,620 (93%)	45,363 (93.1%)
Unemployed	365,544 (7.0%)	3,330 (6.9%)
Occupation		
Civilian employed population 16 years and over	4,869,620	45,363
Management, business, science, and arts occupations	1,957,075 (40.2%)	15,258 (33.6%)
Service occupations	886,194 (18.2%)	8,937 (19.7%)
Sales and office occupations	1,016,948 (20.9%)	9,592 (21.1%)
Natural resources, construction, and maintenance occupations	371,521 (7.6%)	4,141 (9.1%)
Production, transportation, and material moving occupations	637,882 (13.1%)	7,435 (16.4%)

Source: (United States Census Bureau 2022a)

As shown in Table 2.2.4-10, the largest industry sector in the City is Educational Services and Healthcare and Social Assistance, which employs 27.1 percent of the civilian employed population 16 years and older. This is followed by Transportation and Warehousing, and Utilities, which employs 10.7 percent.

Table 2.2.4-10: City of Carson Industry Characteristics

Industry	Estimate	Percent
Civilian employed population 16 years and over	45,363	N/A
Agriculture, forestry, fishing and hunting, and mining	131	0.3%
Construction	2,606	5.7%
Manufacturing	4,795	10.6%
Wholesale trade	1,583	3.5%
Retail trade	4,168	9.2%
Transportation and warehousing, and utilities	4,862	10.7%
Information	903	2.0%
Finance and insurance, and real estate and rental and leasing	1,634	3.6%
Professional, scientific, management, administrative, and waste management services	4,542	10.0%
Educational services and health care and social assistance	12,292	27.1%
Arts, entertainment and recreation, accommodation and food services	3,695	8.1%
Other services, except public administration	2,087	4.6%
Public administration	2,065	4.6%

Source: (United States Census Bureau 2022a)

Business Activity

The City's major local employers are as follows (City of Carson n.d.):

- Albertson's
- BP Refinery
- Chili's Bar and Grill
- Double Tree Hotel
- FedEx
- Home Deport
- Honda
- IHOP
- IKEA
- Nissan
- Prime Wheel Corp.
- See's Candies
- Shell Oil Co.
- South Bay Pavilion at Carson
- StubHub
- Target
- Toyota
- Yoplait

The I-405 corridor is surrounded primarily by residential and commercial areas. Within neighborhoods adjacent to the I-405 corridor, the general types of businesses include restaurants (e.g., fast food), light industrial businesses (e.g., gas stations, automotive

services, storage warehouses), retail stores (e.g., grocery stores and markets), commercial (hotels), and offices. Some of these businesses may be reliant on accessibility of roadway travelers from on/off ramps. Some businesses adjacent to I-405 include, but are not limited to, Starbucks, Chili's Bar and Grill, Sizzler, FedEx, 5.11 Tactical, DoubleTree by Hilton, Mountune USA, fifteen52, Rick's Lube Complete Autocare, Porsche Experience Center Los Angeles, Goodyear Blimp Base Airport, and Inland Kensworth.

Fiscal Conditions

In the 2022–2023 fiscal year, the City's General Fund revenue was $256,199,600. The two largest sources of revenue for the City's General Fund were oil industry business taxes, which accounted for 32.3 percent of all General Fund revenues ($82,786,004), and sales tax, which accounted for 24.4 percent of General Fund revenues ($62,610,700) (City of Carson 2023).

Community Facilities

Community facilities are locations where services are provided to the local community or where people tend to congregate. Community facilities include educational facilities, city attractions, government facilities, community centers, senior centers, schools, hospitals, and parks. The community facilities within the Community Impact RSA are listed in Table 2.2.4-11 and shown in Figure 2.2.4-1. None of these facilities are within or adjacent to the Project Study Area.

Table 2.2.4-11: Community Facilities within the Community Impact Resource Study Area

Location	Property Name	Address	Owner/Operator	Distance from Project Study Area
CF-1	Del Amo Park	703 East Del Amo Boulevard Carson, CA 90746	City of Carson	0.32 mile northeast
CF-2	Perry Street Mini-Park	East 215th Place and South Perry Street Carson, CA 90745	City of Carson	0.15 mile northeast
CF-3	Calas Park	1000 East 220th Street Carson, CA 90745	City of Carson	0.17 mile southwest
CF-4	Victoria Community Regional Park	419 MLK Jr. Street Carson, CA 90746	City of Carson	0.32 mile northeast
CF-5	Community Center Carson Event Center	801 Carson Street Carson, CA 90745	City of Carson	0.65 mile southwest

Source: (GPA Consulting 2025)

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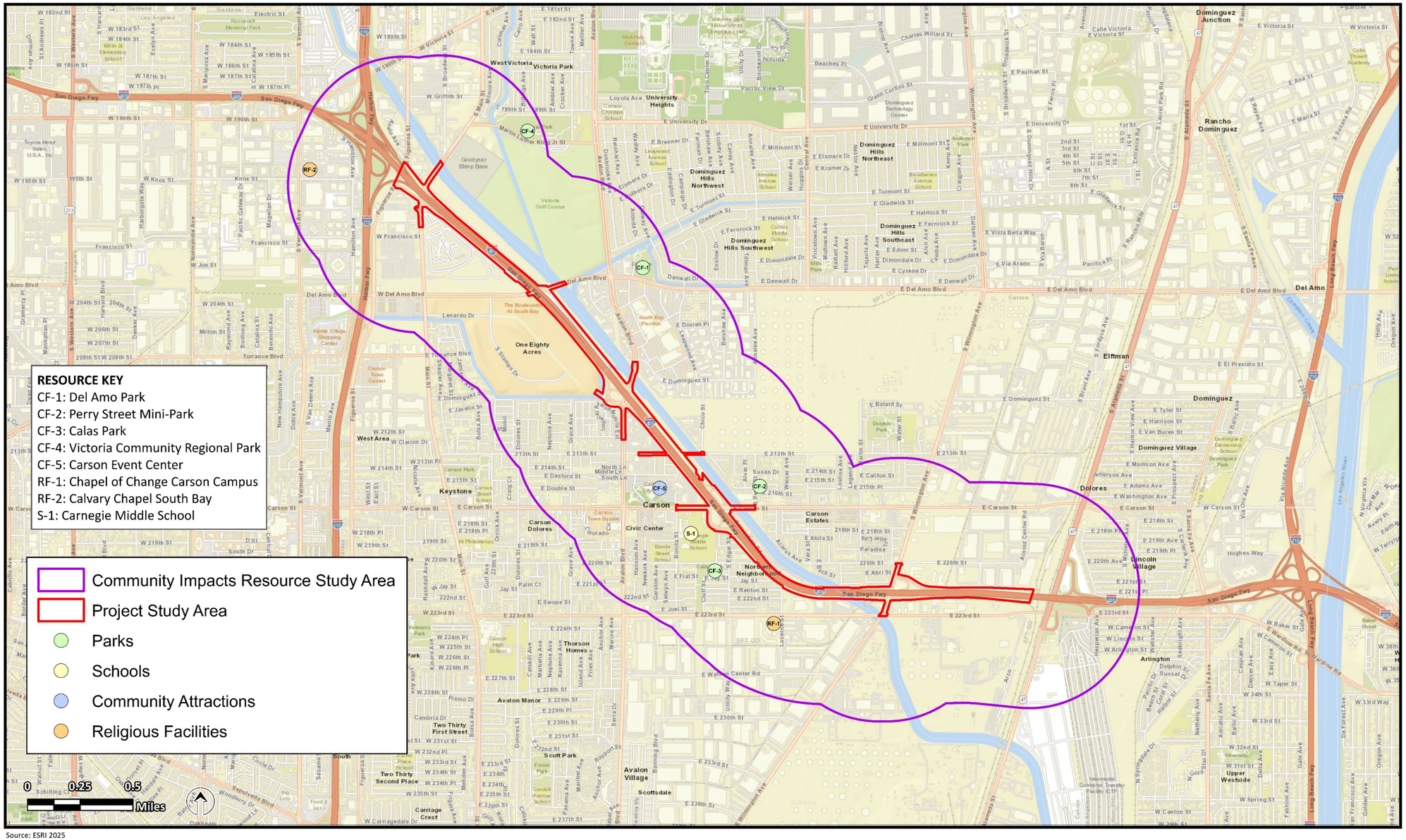

Source: ESRI 2025

07-LA-405 PM 9.6/12.6
EA 07-35940

I-405 from Wilmington Ave to Main St Improvements Project

Figure 2.2.4-1: Community Facilities

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There is one Los Angeles Unified School District educational facility in the Community Impact RSA. It is listed in Table 2.2.4-12 and shown in Figure 2.2.4-1.

Table 2.2.4-12: Educational Facilities

Location	Property Name	Address	Owner/Operator	Distance from Project Study Area
S-1	Carnegie Middle School	21820 Bonita Street, Carson, CA 90745	Los Angeles Unified School District	550 feet southwest

Source: (GPA Consulting 2025)

In addition to the other community facilities described above, places of worship also serve the community because they are places where residents congregate. Places of worship in the Community Impact RSA are listed in Table 2.2.4-13 and shown in Figure 2.2.4-1.

Table 2.2.4-13: Religious Facilities

Location	Property Name	Address	Distance from Project Study Area
RF-1	Chapel of Change Carson Campus	150 East 223rd Street #108 Carson, CA 90745	1.17 miles southwest
RF-2	Calvary Chapel South Bay	18399 South Vermont Street Gardena, CA 90248	0.66 mile northwest

Source: (GPA Consulting 2025)

2.2.4.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, construction activities would not be implemented; therefore, no short-term direct or indirect impacts on community character and cohesion would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Population and Housing

Construction activities under Alternative 2 are not anticipated to impact growth or population in a manner that would result in impacts on housing in the area, as discussed in Section 2.2.3, *Growth*. Therefore, no short-term direct or indirect adverse impacts on population and housing would result from construction of the proposed Project under Alternative 2.

Neighborhoods, Communities, or Community Character

Construction activities under Alternative 2 would result in temporary noise disruptions from construction activities (i.e., transport and use of equipment). During construction, construction noise may intermittently dominate the noise environment in the immediate area of construction. The nearest sensitive receptors are approximately 50 feet from the Project Study Area. Construction equipment commonly used on roadway construction projects is expected to generate noise levels ranging from 80 to 85 A-weighted decibels (dBA) at a distance of 50 feet. However, noise produced by construction equipment would be reduced over distance, at a rate of approximately 6 decibels (dB) per doubling of distance. Based on the Noise Study Report prepared for the proposed Project, no adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14.8-02 (Ambient Air Quality and Noise Consulting 2026). In addition, construction noise would be short-term, intermittent, and overshadowed by local traffic noise; therefore, no measures are proposed to be implemented to reduce the temporary noise impacts of the proposed Project (Ambient Air Quality and Noise Consulting 2026).

The proposed Project would not result in the closure or relocation of any community facilities. The proposed Project would require TCEs from six parcels for the construction of the Dominguez Channel Bridge. Community facilities would remain open and accessible during construction. Parking and access to community facilities (additional parking and access information is discussed in Section 2.2.7, *Transportation*) would be temporarily affected during construction; however, impacts would not be adverse. Sidewalks and bike routes would remain open on at least one side of the impacted roadways, overcrossings, and undercrossings, maintaining connections in neighborhoods and communities.

The proposed Project could result in temporary impacts on access to community facilities from increased congestion during construction activities, mainline lane closures, staging, and ramp closures. Traffic detours for ramp closures would be required at the following ramps for either overnight or extended weekend closures:

- Wilmington Avenue Southbound (SB) Off-Ramp
- Wilmington Avenue Northbound (NB) On-Ramp
- Carson Street SB Off-Ramp
- Carson Street SB On-Ramp
- Carson Street NB Off-Ramp
- Carson Street NB On-Ramp
- Avalon Boulevard NB Off-Ramp

- Avalon Boulevard SB On-Ramp
- Main Street NB Off-Ramp

Ramps would not be closed longer than 10 days, and consecutive ramps would not be closed simultaneously, which would further minimize temporary impacts on motorists (e.g., work hazards, traffic delays, motorist distractions). A TMP would be implemented during construction that would identify alternate routes, detours, and access points for motorists. Ramps would be reopened following completion of work in those areas.

Construction could result in temporary emergency access delays within the Community Impact RSA, which could impact community character and cohesion; however, impacts would not last beyond the 24-month construction period. Therefore, no short-term direct or indirect adverse impacts on neighborhoods, communities, or community character would result from construction of the proposed Project under Alternative 2.

Economic Conditions

Construction activities under Alternative 2 would not be expected to result in any residential or business relocations. While construction would require TCE from six parcels for construction of the Dominguez Channel bridge, businesses would continue to operate during construction and support existing employment and income conditions. Some businesses may be affected temporarily by ramp closures. A TMP and construction staging plan would be implemented to accommodate continued access to local business. Traffic detours for ramp closures would be required for overnight or extended weekend closures, but no consecutive ramps would be closed simultaneously, which would further minimize impacts on motorists (e.g., work hazards, traffic delays, motorist distractions). Detour routes would be provided so that access to businesses and residences is maintained. Implementation of the TMP would ensure that the proposed Project would not severely disrupt business activity or result in substantial loss of sales taxes for the City. Detours and extensive public information would be provided to alleviate potential loss of business to operations affected by ramp closures. Therefore, no short-term direct or indirect adverse impacts on economic conditions would result from construction of the proposed Project under Alternative 2.

Community Facilities

There are eight community facilities located in the Community Impact RSA. Each facility is located further than 50 feet from construction areas, and it is anticipated that there would be no temporary impacts on community facilities as a result of construction noise due to the implementation of Alternative 2.

Access to community facilities may be affected temporarily due to increased congestion caused by detours associated with temporary freeway mainline and ramp closures. Traffic detours for ramp closures would occur at ramps for either overnight or extended weekend closures, and no consecutive ramps would be closed simultaneously to further minimize impacts on motorists (e.g., work hazards, traffic delays, motorist distractions). A TMP would be implemented and would identify alternate routes, detours, and access

points for motorists. Project Feature **PF-TR-1** (see Section 1.4, *Project Alternatives*) which would require preparation of a Transportation Management Plan (TMP) for the Project, prior to construction would be implemented to ensure that community facilities owners (e.g., community centers, churches, educational facilities, schools) would be notified to ensure access is maintained at all times during construction. Upon completion of construction of Alternative 2, I-405 and local roads would return to existing or better conditions, and access to community facilities would be fully restored. Therefore, no short-term direct or indirect adverse impacts on community facilities would result from construction of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Population and Housing

For the same reasons as described under Alternative 2, no short-term direct or indirect adverse impacts on population and housing would result from construction of the proposed Project under Alternative 3.

Neighborhoods, Communities, or Community Character

For the same reasons as described under Alternative 2, the Complete Streets elements and Transportation System Management/Transportation Design Management (TSM/TDM) elements of the proposed Project that would impact parking, bicycle lanes, and on/off ramp closures under Alternative 3 would have no short-term direct or indirect adverse impacts on neighborhoods, communities, or community character.

Economic Conditions

As described under Alternative 2, construction of Alternative 3 is not expected to result in any residential or business relocations within the Community Impact RSA. Businesses in the Community Impact RSA would continue to operate for the duration of construction and would continue to support existing employment and income conditions. The implementation of a TMP, as provided under Project Feature **PF-TR-1**, would ensure that the proposed Project would not severely disrupt business activity or result in substantial loss of sales taxes for the City. Detours and extensive public information would be provided to alleviate potential loss of business to operations affected by ramp closures. Therefore, no short-term direct or indirect adverse impacts on economic conditions would result from construction of the proposed Project under Alternative 3.

Community Facilities

As described under Alternative 2, with the implementation of the TMP, as provided under Project Feature **PF-TR-1**, no temporary impacts on community facilities would occur as a result of construction due to the implementation of Alternative 3. Therefore, no short-term direct or indirect adverse impacts on community facilities would result from construction of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented; therefore, no long-term direct or indirect impacts on community character and cohesion would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Population and Housing

The proposed Project has been included in the regional planning forecasts and would not result in changes to the population. The implementation of Alternative 2 would accommodate future growth and anticipated traffic volumes. Alternative 2 is intended to improve congestion, operating costs, and safety. Therefore, all members of the public, including those within the Affected Census Tracts, would benefit from the improvements proposed under Alternative 2, and no long-term direct or indirect adverse impacts on population and housing would result from operation of the proposed Project under Alternative 2.

Neighborhoods, Communities, or Community Character

Alternative 2 would require partial ROW acquisitions from four parcels to widen the Dominguez Channel Bridge (see Table 2.2.5-2). The required ROW acquisitions are on vacant parcels identified as industrial or government land not currently open to the community. Therefore, these acquisitions would have no long-term direct or indirect adverse impacts on the neighborhoods in the Community Impact RSA or the community's use of the existing space.

Alternative 2 would include Complete Streets improvements to the existing intersections at I-405 and Main Street, Avalon Boulevard, Carson Street, Wilmington Avenue, and 213th Street under I-405. Complete Streets elements would include Americans with Disabilities Act compliant sidewalks and curb ramps, additional bicycle facilities, improved lighting under bridges for pedestrian and bicycle crossings, safer crosswalks, and the accommodation of future transit and multimodal trails, further connecting neighborhoods east and west of the I-405 corridor.

Alternative 2 would not divide existing neighborhoods or affect community cohesion; rather, it would include Complete Streets and multimodal elements between Wilmington Avenue and Main Street, where feasible, to promote equitable and sustainable multimodal travel options.

The Project Study Area is part of an urbanized environment surrounded by existing community facilities. Alternative 2 would be constructed along an existing transportation corridor that currently divides the east and west sides of the City. The Complete Streets improvements proposed at the overcrossings and undercrossings along I-405 would result in increased cohesion and mobility between communities. Alternative 2 would not

separate the community from community facilities or services or permanently influence community character.

Traffic noise impacts would occur if traffic noise levels at a sensitive receptor location were predicted to approach or exceed the Noise Abatement Criteria (NAC), or if the predicted future traffic noise level were to substantially exceed the existing noise level (i.e., 12 dBA or greater increase). The NAC within the Community Impact RSA vary depending on the land use activities being evaluated (see Section 2.3.7, *Noise*). Noise abatement (i.e., noise barriers) is proposed at locations along I-405 that are adjacent to Activity Category B land uses. Predicted noise levels at receivers in design year 2050 would not approach or exceed the NAC for Activity Category C (sport areas and parks), D (Carnegie Middle School), or E (hotels, restaurants, and offices) or land uses (Ambient Air Quality and Noise Consulting 2026).

No residences, businesses, community facilities, or services would be displaced, and because there are existing noise barriers, the installation of barriers at locations where they currently exist or near areas where they exist would not be expected to adversely impact the community character. The population characteristics and distribution within the Community Impact RSA would not change as a result of the proposed Project. Therefore, no long-term direct or indirect adverse impacts on neighborhoods, communities, or community character would result from operation of the proposed Project under Alternative 2.

Economic Conditions

While transportation projects usually do not result in the creation of a substantial number of permanent new jobs within a community, they may affect employment in a variety of ways, both positive and negative. For instance, permanent changes in access and traffic volumes can lead to increases or decreases in business transactions, which could translate into corresponding changes in employment. Additionally, the displacement of a major employer or the relocation of a substantial number of employees could affect employment either through loss or relocation of jobs, depending in large part on the relocation site.

Alternative 2 would require partial ROW acquisitions on four parcels to widen the Dominguez Channel Bridge; however, the required ROW acquisitions are on vacant parcels identified as industrial or government land (see Table 2.2.5-2). These acquisitions would not displace any residences or businesses, and no changes to tax revenues or business operations would occur.

Alternative 2 would improve mobility at the local and regional levels and provide safer and more efficient travel conditions. Improved mobility and safety are expected to have a positive impact on commutes for workers by improving the operation of I-405 and reducing time spent on I-405 and cross streets. This improved mobility and safety are also expected to have a positive impact on overall economic conditions at the local and regional levels due to more efficiency of movement for both employees and patrons.

Alternative 2 would not result in the displacement of businesses or community facilities, and it would not be expected to cause disruption of a major employer due to a change in access or traffic volume. No business relocations or displacements would result from the implementation of Alternative 2. Therefore, no long-term direct or indirect adverse permanent impacts on employment or income would result from operation of the proposed Project under Alternative 2.

ROW acquisitions under Alternative 2 would not result in the relocation of residences or businesses and would not affect local tax revenue in the City; therefore, changes to property values due to relocations or a change in land use would not occur. Therefore, no long-term direct or indirect adverse impacts on economic conditions would result from operation of the proposed Project under Alternative 2.

Community Facilities

Under Alternative 2, I-405 and local roads would operate at existing or better conditions, and existing access to community facilities would be maintained. Therefore, no long-term direct or indirect adverse impacts on community facilities would result from operation of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Population and Housing

For the same reasons as described under Alternative 2, no long-term direct or indirect adverse impacts on population and housing would result from operation of the proposed Project under Alternative 3.

Neighborhoods, Communities, or Community Character

Alternative 3 is not considered a Type 1 project and was not evaluated for noise impacts. For the same reasons as described under Alternative 2 regarding Complete Streets elements and TSM/TDM elements of the proposed Project, implementation of Alternative 3 would not physically divide existing neighborhoods, separate residences from community facilities, or increase isolation of existing uses. Therefore, no long-term direct or indirect adverse impacts on neighborhoods, communities, or community character would result from operation of the proposed Project under Alternative 3.

Economic Conditions

As described under Alternative 2, Alternative 3 would improve mobility at the local and regional levels and provide safer and more efficient travel conditions. This improved mobility and safety are also expected to have a positive impact on overall economic conditions at the local and regional levels due to more efficient movement for both employees and patrons. Alternative 3 would not require any ROW acquisitions.

For the same reasons as described under Alternative 2, Alternative 3 would not result in substantial adverse permanent impacts on employment or income. Alternative 3 would not result in the displacement of businesses or community facilities, and it would not be expected to cause disruption of a major employer due to a change in access or traffic volume. Therefore, no long-term direct or indirect adverse impacts on economic conditions would result from operation of the proposed Project under Alternative 3.

Community Facilities

As described under Alternative 2, no permanent impacts on community facilities would occur due to the implementation of Alternative 3. Therefore, no long-term direct or indirect adverse impacts on community facilities would result from operation of the proposed Project under Alternative 3.

2.2.4.4 Avoidance, Minimization, and/or Mitigation Measures

See Section 2.3.7, *Noise*, for noise abatement measures being considered for the proposed Project under Alternative 2.

2.2.5 Relocations and Real Property Acquisitions

2.2.5.1 Regulatory Setting

Caltrans Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), and Title 49 CFR Part 24. The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix B for a copy of Caltrans' Title VI/Non-Discrimination Policy Statement.

2.2.5.2 Affected Environment

This section is based on the proposed Project's CIA (GPA Consulting 2025) and ROW Data Sheets (HDR 2025), which was completed in October 2025. The RSA to evaluate relocation impacts is the same as described in Section 2.2.1, *Existing and Future Land Use* (see Figure 2.2.1-1) and includes a 0.5-mile buffer around the Project Study Area. The Community Impact RSA extends into a small part of Los Angeles on the west and east sides of the RSA, and into a small part of Long Beach on the southeast side of the Community Impact RSA; however, the local analysis is limited to the City of Carson to best reflect the affected environment.

The Community Impact RSA is within an existing highway corridor, and the immediate vicinity is heavily developed with transportation infrastructure and residences. The Dominguez Channel runs through the Project Study Area. Land use within and surrounding the Community Impact RSA consists primarily of single-family and multi-family residential, commercial, recreational, light and heavy industrial, and public land uses.

2.2.5.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, construction activities would not be implemented; therefore, no short-term direct or indirect impacts related to relocations or real property acquisitions would result from the proposed Project under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would require TCEs from six parcels during construction and would be completed as part of a later phase of the proposed Project (see Table 2.2.5-1 and Figure 2.2.5-1).

Table 2.2.5-1: Temporary Construction Easements (Alternative 2)

APN	Owner	Land Use	TCE Area (Square Feet)
7315-039-001	Carson Estate Company	Industrial (Vacant)	19,443
7315-039-903	Los Angeles County Flood Control District	Government (Vacant)	1,186
7315-039-904	Los Angeles County Flood Control District	Government (Vacant)	2,821
7328-001-009	Carson Estate Company	Industrial (Vacant)	16,525
7328-001-902	Los Angeles County Flood Control District	Government (Vacant)	3,148
7328-009-906	Los Angeles County Flood Control District	Government (Vacant)	2,261
Total Area	**-**	**-**	**45,384**

Source: (GPA Consulting 2025)
APN = Assessor Parcel Number; TCE = temporary construction easement

As shown in Table 2.2.5-1, land uses that would be affected by the six TCEs are all vacant parcels and would be restored to a similar condition after completion of construction. Therefore, no short-term direct or indirect impacts to relocations or real property acquisitions would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Implementation of Alternative 3 would not require TCEs. Therefore, no short-term direct or indirect impacts related to relocations or real property acquisitions would occur as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved, and Complete Streets elements and TSM/TDM elements would not be implemented; therefore, no long-term direct or indirect impacts related to relocations or real property acquisitions would occur as a result of the proposed Project under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would require 4 partial permanent ROW acquisitions on four parcels to widen the Dominguez Channel Bridge for auxiliary lanes along I-405 (see Table 2.2.5-2

and Figure 2.2.5-1). ROW acquisition would be completed as part of a later phase of the proposed Project. The current land uses of the parcels requiring partial acquisitions are either industrial or government, and all parcels are vacant; therefore, ROW acquisitions would not result in the displacement of any residences or businesses, and no direct or indirect long-term adverse impacts related to relocations or real property acquisitions would occur as a result of the proposed Project under Alternative 2.

Table 2.2.5-2: Permanent Right of Way (Alternative 2)

APN	Owner	Land Use	ROW Area (Square Feet)
7315-039-001	Carson Estate Company	Industrial (Vacant)	4,839
7315-039-904	Los Angeles County Flood Control District	Government (Vacant)	219
7328-001-009	Carson Estate Company	Industrial (Vacant)	9,678
7328-009-906	Los Angeles County Flood Control District	Government (Vacant)	583
Total Area	**-**	**-**	**15,319**

Source: (GPA Consulting 2025)
APN = Assessor Parcel Number; ROW = right-of-way

Alternative 3 – Transportation System Management/Transportation Demand Management

Alternative 3 would not require any relocation or permanent acquisitions because it would not include the widening of the Dominguez Channel Bridge or auxiliary lanes along I-405. Therefore, no long-term direct or indirect impacts related to relocations or real property acquisitions would occur as a result of the proposed Project under Alternative 3.

2.2.5.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are proposed.

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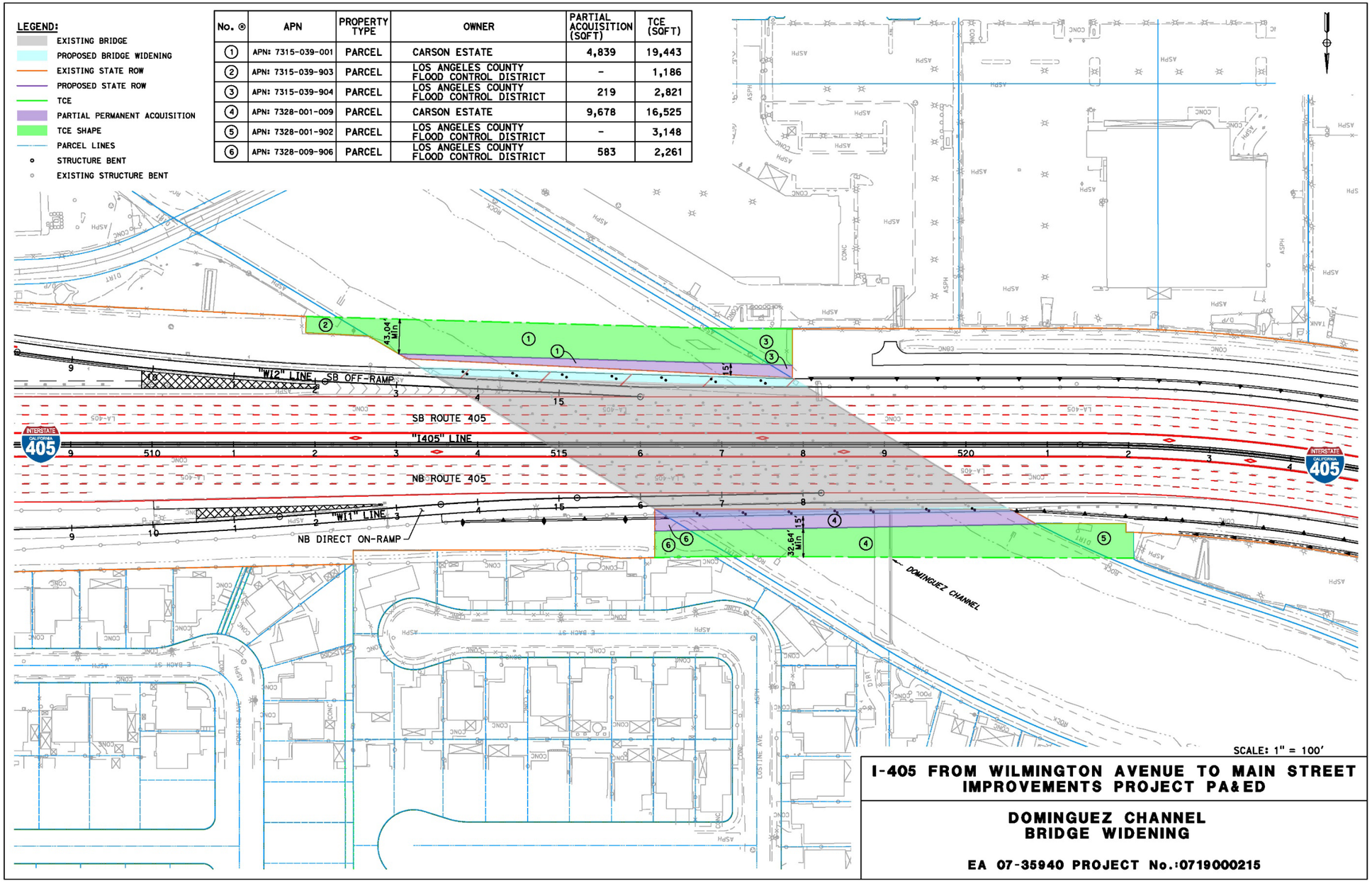
LEGEND:
- EXISTING BRIDGE
- PROPOSED BRIDGE WIDENING
- EXISTING STATE ROW
- PROPOSED STATE ROW
- TCE
- PARTIAL PERMANENT ACQUISITION
- TCE SHAPE
- PARCEL LINES
- STRUCTURE BENT
- EXISTING STRUCTURE BENT

No.	APN	PROPERTY TYPE	OWNER	PARTIAL ACQUISITION (SQFT)	TCE (SQFT)
1	APN: 7315-039-001	PARCEL	CARSON ESTATE	4,839	19,443
2	APN: 7315-039-903	PARCEL	LOS ANGELES COUNTY FLOOD CONTROL DISTRICT	-	1,186
3	APN: 7315-039-904	PARCEL	LOS ANGELES COUNTY FLOOD CONTROL DISTRICT	219	2,821
4	APN: 7328-001-009	PARCEL	CARSON ESTATE	9,678	16,525
5	APN: 7328-001-902	PARCEL	LOS ANGELES COUNTY FLOOD CONTROL DISTRICT	-	3,148
6	APN: 7328-009-906	PARCEL	LOS ANGELES COUNTY FLOOD CONTROL DISTRICT	583	2,261



SCALE: 1" = 100'

I-405 FROM WILMINGTON AVENUE TO MAIN STREET IMPROVEMENTS PROJECT PA&ED

DOMINGUEZ CHANNEL BRIDGE WIDENING

EA 07-35940 PROJECT No.:0719000215

Figure 2.2.5-1: Required Temporary Construction Easements and Right-of-Way Acquisitions under Alternative 2

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2.2.6 Utilities/Emergency Services

2.2.6.1 Affected Environment

This section is based on the proposed Project's CIA (GPA Consulting 2025), which was completed in October 2025. The RSA used to evaluate impacts related to impacts on utilities is the Project Study Area. However, the RSA used to evaluate impacts related to impacts on emergency services is the same as described in Section 2.2.1, *Existing and Future Land Use* (see Figure 2.2.1-1) and includes a 0.5-mile buffer around the Project Study Area for impacts on emergency services resources. The Community Impact RSA extends into a small part of Los Angeles on the west and east sides of the Community Impact RSA and into a small part of Long Beach on the southeast side of the Community Impact RSA; however, the local analysis is limited to the City of Carson to best reflect the affected environment.

Utilities

Utilities and service systems within the Project Study Area include underground and overhead power transmission and distribution lines, as well as natural gas, water, sewer, and telecommunication lines. Table 2.2.6-1 lists the currently identified owners of utilities that are located within the Project Study Area.

Table 2.2.6-1: Existing Utilities in the Project Study Area

Utility Owner	Type of Utility	Number of Utilities within the Project Study Area	Utility Ownership
Electric			
Southern California Edison	Electric	15	Private
Southern California Edison	Overhead Electric	1	Private
Los Angeles Department of Water and Power	Overhead Electric	4	Public
Los Angeles Department of Water and Power	Electric	1	Public
Gas			
Marathon, formerly Atlantic Richfield	Gasoline	1	Private
Chevron Corp	Natural Gas	1	Private
Phillips 66, formerly Conoco Phillip	Gasoline	1	Private
Exxon Mobil Corp	Gasoline	3	Private
Henkel, formerly Imperial Chemical Industries	Natural Gas	2	Private
Phillips 66 Company	Gasoline	1	Private
Southern California Gas	Natural Gas	6	Private
Southern California Gas	Gasoline	1	Private
Shell Oil Company	Gasoline	2	Private

Utility Owner	Type of Utility	Number of Utilities within the Project Study Area	Utility Ownership
Shell Oil Company	Gasoline	1	Private
Exxon Mobil Corp., formerly Socony Mobil	Gasoline	2	Private
Exxon Mobil Corp., formerly Socony Mobil	Natural Gas	1	Private
Union Oil Company of California	Gasoline	1	Private
Unknown	Natural Gas	1	Private
Unknown	Gas	1	Private
Oil			
Exxon Mobil Corp	Oil	7	Private
Marathon	Oil	3	Private
Shell Oil Company	Oil	26	Private
Union Oil Company of California	Oil	3	Private
Unknown	Oil	2	--
Sewer			
Los Angeles County Sanitation District	Sanitary Sewer	7	Public
Unknown	Sanitary Sewer	5	--
Telecommunication			
AT&T	Communications	22	Private
Caltrans	Communications	1	Public
Verizon	Communications	1	Private
Water			
California Water Service Company (Dominguez)	Water	23	Private
Caltrans	Water	2	Public
Los Angeles Department of Water and Power	Water	1	Public
Metropolitan Water District	Water	1	Public
Unknown	Water	3	--

Source: (AIX Civil Design Inc. 2026)

Solid Waste Disposal

The Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) requires jurisdictions to comply with the waste reduction goals. The Los Angeles County Sanitation District operates several solid waste management systems, which include sanitary landfills, recycle centers, materials recovery/transfer facilities, and energy recovery facilities. The closest active landfill operated by the Los Angeles County Sanitation District that serves Los Angeles County cities is Calabasas Landfill.

The Calabasas Landfill is located at 5300 Lost Hills Road in Calabasas, which is approximately 32 miles northwest of the Project Study Area. The Calabasas Landfill is a Class II landfill, and it accepts a variety of waste, including construction demolition, industrial, mixed municipal, and green materials. The facility is open Monday to

Saturday and closed on Sundays and holidays. The landfill is expected to remain active until 2031–2035 at the present disposal rate. The remaining capacity is 6 million cubic yards (Los Angeles County Sanitation District 2025).

Water and Power

California Water Service and Golden State Water provide water and wastewater services to the City of Carson. The Metropolitan Water District of Southern California (MWD) is responsible for importing water to the City of Carson (City of Carson n.d.).

Southern California Edison (SCE) provides electricity to the Project Study Area (Southern California Edison n.d.). In 2024, SCE delivered more than 81 million kilowatt hours (kWh) of electricity, serving 180 incorporated cities and 15 counties over a service area of 50,000 square miles (Southern California Edison 2024). SCE monitors and maintains a vast electricity system, which includes transmission lines, distribution lines, electric poles, distribution transformers, and substation transformers.

Natural Gas

Southern California Gas provides natural gas to the Project Study Area. Southern California Gas provides service to approximately 21.1 million consumers in Central and Southern California (Southern California Gas n.d.). There are 25 natural gas or gasoline pipelines within the Project Study Area (see Table 2.2.6-1).

Emergency Services

Emergency services include law enforcement, crime prevention, preservation of public order, judicial court security, fire suppression, fire prevention, paramedic response, swift water rescue, hazardous materials response, and other types of emergency services. In the City of Carson, the Los Angeles County Sheriff's Department provides law enforcement services, and the Los Angeles County Fire Department provides fire and paramedic services, along with private and neighboring city law enforcement and first response agencies. The nearest fire stations and law enforcement facilities within the Community Impact RSA are listed in Table 2.2.6-2. As illustrated in Figure 2.2.6-1, the Community Impact RSA includes two law enforcement stations, Los Angeles County Sheriff Department – Carson Station and California Highway Patrol, and two fire stations, Los Angeles County Fire Department Station 127 and Carson Fire Department. Los Angeles County Sheriff Department – Carson Station is located at 21356 Avalon Boulevard, 0.2 mile southwest of the Project Study Area, and California Highway Patrol is located at 19700 Hamilton Avenue, 0.27 miles southwest of the Project Study Area. Los Angeles County Fire Department Station 127 is located at 2049 East 223rd Street and, 0.15 mile south of the Project Study Area, and Carson Fire Department is located at 701 Carson Street, 0.22 mile west of the Project Study Area. There is one medical facility within the Community Impact RSA, Providence Urgent Care, which is located at 21501 South Avalon Boulevard, Suite 100, 0.18 mile southwest of the Project Study Area.

Table 2.2.6-2: Emergency Service Facilities

Location	Property Name	Address	Distance from the Project Study Area
Fire Station			
F-1	Los Angeles County Fire Department Station 127	2049 East 223rd Street Carson, CA 90810	0.15 mile south
F-2	Carson Fire Department	701 Carson Street Carson, CA 90745	0.22 mile west
Law Enforcement Stations			
P-1	Los Angeles County Sheriff Department - Carson Station	21356 Avalon Boulevard Carson, CA 90745	0.2 mile southwest
P-2	California Highway Patrol	19700 Hamilton Avenue Torrance, CA 90502	0.27 mile southwest
Hospitals/Urgent Care Centers			
H-1	Providence Urgent Care	21501 South Avalon Boulevard #100 Carson, CA 90745	0.18 mile southwest

Source: (GPA Consulting 2025)

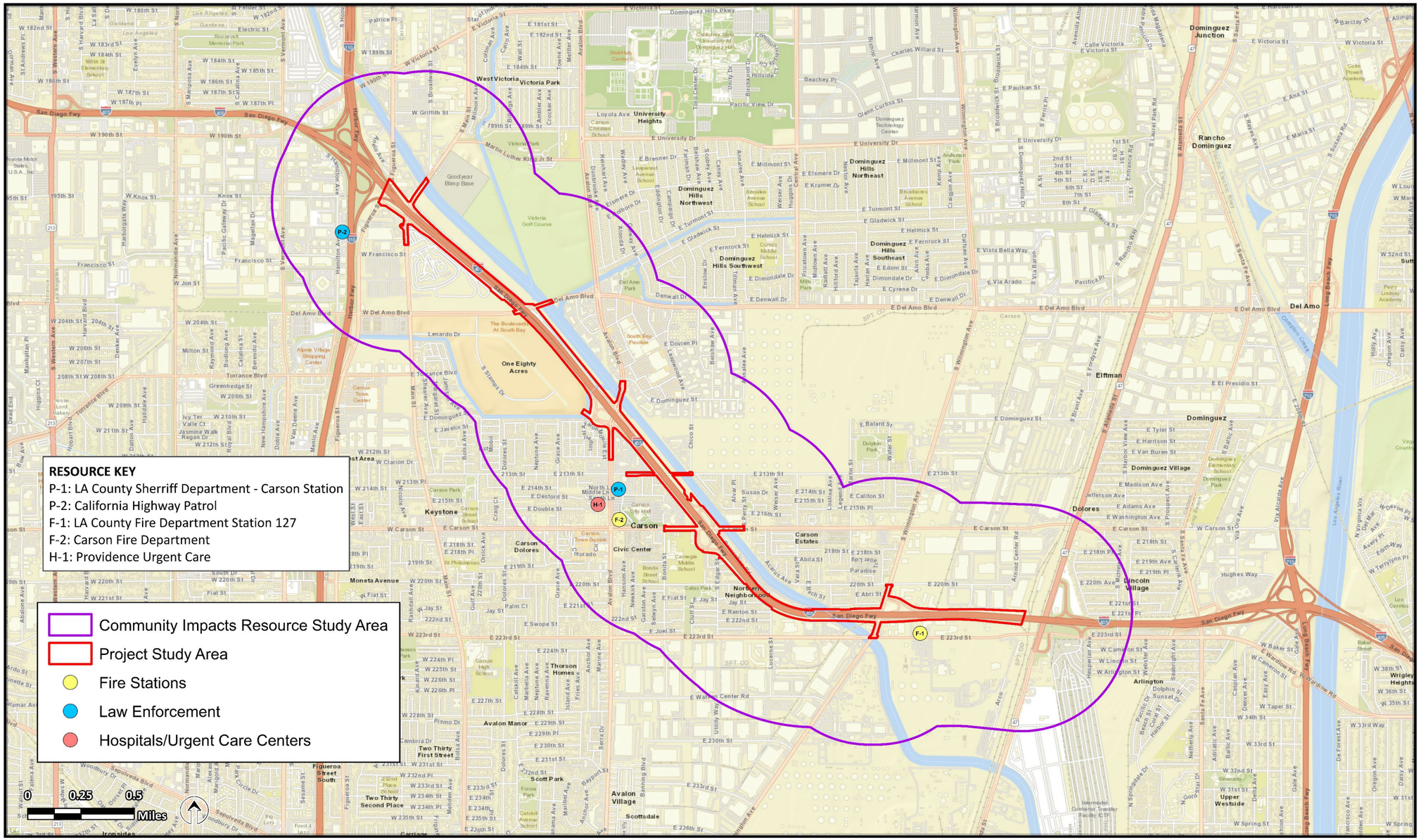

Figure 2.2.6-1: Emergency Service Facilities in the Community Impact Resource Study Area

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2.2.6.2 Environmental Consequences

Construction Impacts

Alternative 1 – No Build

Under the No-Build Alternative, no construction activities would occur, and utilities or emergency services would not be impacted. Therefore, no short-term direct or indirect impacts would occur as a result of the proposed Project under Alternative 1.

Alternative 2 – Auxiliary Lanes and Complete Streets

Utilities

There are a range of utilities in the Project Study Area. Alternative 2 would not involve the construction of new utility facilities; however, relocation, protection in place, removal, and/or abandonment of a total of 70 existing utility facilities may be required due to proposed Project-related ground disturbance. Table 2.2.6-3 shows the types of utilities that would be impacted under Alternative 2. Table 2.2.6-4 shows the affected utilities by type of action under Alternative 2.

Table 2.2.6-3: Affected Utilities by Type (Alternative 2)

Alternative	Electricity	Natural Gas	Gasoline	Oil	Communications	Water	Total
Alternative 2	17	4	2	28	9	10	70

Source: (AIX Civil Design Inc. 2026)

Table 2.2.6-4: Affected Utilities by Action (Alternative 2)

Alternative	Protect in Place	Protect in Place with Variance	Relocate	Adjust to Grade	Remove/Abandon	Total
Alternative 2	27	11	20	9	3	70

Source: (AIX Civil Design Inc. 2026)

Most telecom, telephone, television, power, and water lines within the Project Study Area serve local streets. Relocations of these local distribution facilities would generally be minor and typically conducted by adjusting the access to grade or placing the new facility parallel to the existing facility to avoid conflict. Under Alternative 2, some major utilities and/or regional facilities would be impacted. The following is a summary of the potential impacts on major and/or regional utility facilities under Alternative 2:

- MWD owns a 78-inch water line within the Project Study Area that crosses Interstate 405 (I-405) just south of Carson Street. Under Alternative 2, this line may be protected in place during construction by providing casing around the utility line, or the retaining wall piles or footings may be relocated to pan over the line.

- Exxon Mobil, Shell, Chevron, Union, and Marathon own seven oil and two gasoline lines within the Project Study Area.

    - There are Union oil lines along the south side of the Dominguez Channel. The freeway widening and proposed retaining walls would be constructed above the existing oil lines. The lines are anticipated to be deep, but the actual depth and impact would be verified as the design is completed. Most likely, the lines would be protected in place by providing casing around the utility line or relocating retaining wall piles or footings to avoid the utilities. Relocation is not expected.

    - There are Shell oil lines north of the Dominguez Channel. There is a utility bridge over the Dominguez Channel that carries a corridor of seven lines of various sizes (SOC-001); however, with the implementation of Measure **UTL-1** and **UTL-2**, which would require the utility bridge over Dominguez Channel be protected in place during construction and coordination with the Office of the State Fire Marshal (OSFM), this bridge would not be impacted. The freeway widening and retaining walls proposed on both sides of the freeway would be constructed on top of the oil pipelines. The lines are anticipated to be deep and would be protected in placed, but the actual depth and impact would be verified as the design is completed. Most likely, the lines would be protected in place by providing casing around the utility line or relocating retaining wall piles or footings to avoid the utilities. Relocation is not expected.

    - There are Shell and Chevron oil and gasoline lines south of Carson Street. The freeway widening and retaining walls proposed on both sides of the highway would be constructed on top of the oil and gasoline pipelines. The lines are anticipated to be deep, but the actual depth and impact would be verified as the design is completed. Most likely, the lines would be protected in place by providing casing around the utility line or relocating retaining wall piles or footings to avoid the utilities. Relocation is not expected.

    - There are Exxon Mobil and Shell oil lines along Carson Street. The freeway widening and proposed bridge abutments would be constructed within 15 feet of the oil pipelines. It is anticipated that the lines can be protected in place with the approval of an encroachment policy exception.

    - There are Shell oil lines along Carson Street. The freeway widening and retaining walls proposed on both sides of the highway would be constructed on top of the oil pipelines. The lines are anticipated to be deep, but the actual depth and impact would be verified as the design is completed. Most likely, the lines would be protected in place by providing casing around the utility line or relocating retaining wall piles or footings to avoid the utilities. Relocation is not expected.

    - There are Shell oil and gasoline lines along 213th Street. The freeway widening and proposed bridge abutments would be constructed within 15 feet

of the oil and gasoline pipelines. It is anticipated that the lines can be protected in place with the approval of an encroachment policy exception.

Under Alternative 2, most utilities in conflict with the proposed Project would be protected in place or relocated; however, three Shell Oil Company oil lines would be removed and/or abandoned. Caltrans would coordinate with utility providers to allow them to plan for the relocation of their facilities. Improvements would be designed to avoid utility disruptions to the maximum extent feasible. Project Features, such as Project Feature **PF-UT-1** (see Section 1.4, *Project Alternatives*), which would ensure that all public utility lines, pipes, and cables disturbed or removed to accommodate the proposed Project be replaced or relocated and that disruption of utility services is avoided where possible, are included to minimize impacts on utilities during construction. If any disruptions are required, Project Feature **PF-UT-1** would be incorporated to coordinate with affected utility companies and minimize impacts on service and utility operations. Relocation of existing utilities would comply with Caltrans' standards and policies related to encroachments into Caltrans' ROW. Utility relocations would be identified in the Plans, Specifications, and Estimates (PS&E) phase. Utility work would be conducted during construction, and all utility work (e.g., placement of utility lines in widened overcrossing) would be conducted in coordination with the construction contractor. Implementation of Measure **UTL-1** would ensure that the utility bridge would not be impacted as part of the proposed Project, and lines on both sides of the Dominguez Channel would be protected in place. Because the California Integrated Waste Management Act of 1989 requires jurisdictions to divert waste, under Alternative 2, Caltrans would be required to reduce and direct waste away from the landfills during the construction phase. However, remnant construction waste that is not redirected from the waste stream would be disposed of in the Calabasas Landfill, nearby landfills, or a materials recovery facility.

Construction of Alternative 2 would result in the generation of demolition debris and construction debris, consisting primarily of concrete, steel, and asphalt. Some of this material is appropriate for landfill disposal; however, a high fraction of construction debris is typically recycled or reused because of its economic advantage over new materials. The fraction of debris deemed not suitable for recycling or reuse but mostly consisting of inert materials could be disposed of in an inert landfill, thereby preserving sanitary landfill capacity in municipal landfills.

Based on California Waste Management Board data, Calabasas Landfill would have sufficient permitted capacity to accommodate the solid waste disposal needs of Alternative 2. If the daily capacity is exceeded, other disposal options may be used, including transfer and export of solid waste to another facility, or transportation by truck or rail to an out-of-county landfill facility which would also be in compliance with all relevant requirements.

Based on the discussion above, with the incorporation of Project Feature **PF-UT-1** and implementation of Measure **UTL-1**, no short-term direct or indirect adverse impacts on utilities would occur as a result of the proposed Project under Alternative 2.

Emergency Services

The Community Impact RSA includes two law enforcement stations, two fire stations, and one medical facility (see Table 2.2.6-2 and Figure 2.2.6-1). During construction, emergency access may be temporarily affected by detours associated with temporary freeway mainline and ramp closures, which would require emergency service providers to use different routes. Traffic detours for ramp closures would be required for overnight, extended weekend, or short-term closures, but no consecutive ramps would be closed simultaneously in order to further minimize impacts on motorists (e.g., work hazards, traffic delays, motorist distractions). Detour routes would be provided so that access for emergency services is maintained. Incorporation of Project Feature **PF-TR-1**, which would ensure that a TMP would be implemented and would identify alternate routes, detours, and access points for motorists, would minimize short-term direct and indirect impacts on motorists.

In addition, Project Features **PF-UT-2** and **PF-TR-1**, which would require that prior to construction, coordination would be conducted with local emergency service providers and the surrounding community, would be implemented to minimize service delays and disruptions during construction. With the incorporation of Project Feature **PF-UT-2**, which ensures that local emergency services are informed of the proposed Project's construction schedule, and Project Feature **PF-TR-1**, which would require the preparation of a TMP, no short-term direct or indirect adverse impacts would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Utilities

Impacts on a total of 30 utility facilities from relocations or protection in place associated with Alternative 3 would be relatively minor and mostly along the frontage and cross streets where Complete Streets elements would be implemented. Table 2.2.6-5 below shows the type of utilities impacted by the proposed Project under Alternative 3. Table 2.2.6-6 shows the affected utilities by type of action under Alternative 2.

Table 2.2.6-5: Affected Utilities by Type (Alternative 3)

Alternative	Electricity	Natural Gas	Gasoline	Oil	Communications	Water	Total
Alternative 3	13	2	0	9	5	1	30

Source: (AIX Civil Design Inc. 2026)

Table 2.2.6-6: Affected Utilities by Action (Alternative 3)

Alternative	Protect in Place	Protect in Place with Variance	Relocate	Adjust to Grade	Remove/Abandon	Total
Alternative 3	10	1	11	8	0	30

Source: (AIX Civil Design Inc. 2026)

Similar to Alternative 2, utility work would generally be conducted during construction of Alternative 3. This utility work may extend over 2 years in duration and all utility work (e.g., placement of utility lines in widened overcrossing) would be conducted in coordination with the construction contractor. However, with the incorporation of Project Feature **PF-UT-1**, which ensures that all public utilities disturbed or removed would be replaced or relocated to continue to meet the needs of residents and businesses, impacts on utilities would not be adverse.

Similar to Alternative 2, Alternative 3 would result in the generation of demolition debris and construction debris. However, the nearest landfill to the Project Study Area, the Calabasas Landfill, would have sufficient permitted capacity to accommodate the solid waste disposal needs of Alternative 3.

Therefore, based on the discussion above, with the incorporation of Project Feature **PF-UT-1**, no short-term direct or indirect adverse impacts would occur to utilities as a result of the proposed Project under Alternative 3.

Emergency Services

Similar to Alternative 2, emergency access may be temporarily affected by detours associated with temporary freeway mainline and ramp closures, which would require emergency service providers to use different routes. However, similar to Alternative 2, the proposed Project would incorporate Project Feature **PF-UT-2**, which ensures that local emergency services are informed of the construction schedule, lane closures, and detours plans at least 2 weeks in advance, and Project Feature **PF-TR-1**, which outlines a TMP, ensuring that impacts on emergency services would not be adverse. Therefore, with the incorporation of Project Features **PF-UT-2** and **PF-TR-1**, no short-term direct or indirect adverse impacts would occur as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, no construction would occur as I-405 would not be improved, and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no direct or indirect short-term impacts on utilities or emergency services would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Utilities

As shown in Table 2.2.6-3, the proposed Project under Alternative 2 would require relocation of 70 utility facilities. However, after the completion of construction, all existing utility facilities would remain in operation. In addition, once construction is complete, operation of the proposed Project would not generate additional solid waste.

Therefore, based on the discussion above, no direct or indirect long-term impacts on utilities would occur as a result of the proposed Project under Alternative 2.

Emergency Services

Implementation of Alternative 2 would enhance traffic circulation and could reduce emergency response times. Alternative 2 is not anticipated to increase crime rates, which would requiring an increased need of law enforcement or fire protection services in the Community Impact RSA, because it would not include the creation of new land uses, zoning, or increased accessibility that would substantially increase the potential for crime in the Community Impact RSA. Further, the proposed Project under Alternative 2 would improve an existing transportation corridor and would not include new land use types or housing units that would foster population growth leading to an increased need for emergency services. Therefore, no long-term direct or indirect adverse impacts on emergency services would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Utilities

As shown in Table 2.2.6-5, the proposed Project under Alternative 3 would require relocation of 30 utility facilities. However, after completion of construction, all existing affected utility would remain in operation. In addition, similar to Alternative 2, once construction is complete, operation of the proposed Project under Alternative 3 would not generate solid waste.

Therefore, based on the discussion above, no long-term direct or indirect adverse impacts on utilities would occur as a result of the proposed Project under Alternative 3.

Emergency Services

Similar to Alternative 2, implementation of the proposed Project under Alternative 3 is not anticipated to increase crime rates, which would require an increased need of law enforcement or fire protection services in the Community Impact RSA, because it would not include the creation of new land uses, zoning, or increased accessibility that would significantly increase the potential for crime in the Community Impact RSA. Further, the proposed Project under Alternative 3 would improve an existing transportation corridor and would not include new land use types or housing units that would foster population growth leading to an increased need for emergency services. Therefore, no long-term direct or indirect adverse impacts on emergency services would occur as a result of the proposed Project under Alternative 3.

2.2.6.1 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are proposed:

Measure UTL-1 Prior to construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that a specification be incorporated that requires the utility bridge over the channel be protected in place.

Measure UTL-2 The Office of the State Fire Marshal (OFSM) currently regulates the safety of intrastate hazardous liquid pipelines in California. During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that OSFM Pipeline Safety Division staff inspect pipeline operators to ensure compliance with federal and state pipeline safety laws and regulations. Hazardous liquid pipelines can carry commodities such as crude oil, gasoline, propane, and other types of hydrocarbons. OSFM must respond to intrastate pipeline accidents, investigate significant intrastate pipeline releases, inspect pipeline construction and relocation projects, respond to train derailments near pipelines, and meet with state and local governments to discuss various pipeline safety issues.

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2.2.7 Transportation

2.2.7.1 Regulatory Setting

This section discusses impacts on transportation and circulation resulting from the proposed Project, including single-occupancy vehicle traffic, high-occupancy vehicle traffic (if applicable), tolling (if applicable), mass transit, and active transportation opportunities, both during construction (construction impacts) and after completion of the proposed Project (long-term or operational impacts).

Effects to transportation are analyzed differently under NEPA and CEQA. This section of the document focuses on travel forecasting required by Federal laws related to the general design of Federal-aid highways and interstate facilities (23 USC 109), as well as regulations related to air quality conformity (40 CFR 93). The method of forecasting included in this section relies on travel demand models to predict future traffic data which includes vehicle speed, volume, and mix (i.e., passenger cars vs. light and heavy-duty trucks, etc.), which are then used as inputs to air quality conformity modeling required by the Federal Clean Air Act (FCAA) and FHWA Traffic Noise Model for the noise analysis performed under 23 CFR 772.

The Caltrans CEQA analysis, however, may utilize a travel demand model and/or employ the use of the National Center for Sustainable Transportation induced travel calculator, depending upon the specifics of the project. For more information on the CEQA analysis, please see the CEQA Evaluation chapter of this document.

Caltrans, as assigned by FHWA, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of Federal-aid highway projects (see 23 USC 217). It further directs that the special needs of the elderly and the disabled must be considered in all Federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Accessibility in Federally assisted programs is governed by the U.S. Department of Transportation (USDOT) regulations (49 CFR 27) implementing Section 504 of the Rehabilitation Act (29 USC 794). The FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to Federal-aid projects, including Transportation Enhancement Activities.

This section presents the results of the travel demand modeling used to forecast future conditions in order to comply with federal laws and regulations related to design standards for federal-aid highways, air quality conformity analysis, and the noise analysis required under 23 CFR 772. Analysis within this document also considered the guidelines presented within California's SB 743. SB 743 was implemented in 2013; it changed the methods in which transportation impacts are measured for new

transportation-related projects and implemented strategies to provide more alternatives for transportation (i.e., biking, walking, or access to public transit). SB 743 also replaced LOS traffic analysis with vehicle miles traveled (VMT). Please see the CEQA Evaluation chapter of this document (Chapter 3.0) for an analysis of VMT and induced demand.

2.2.7.2 Affected Environment

This section is based on the proposed Project's *Traffic Operations Analysis Report* (TOAR) (Fehr & Peers 2025) and CIA prepared for the proposed Project (GPA Consulting 2025), which were completed in November 2025 and October 2025, respectively. As discussed in the TOAR, VMT analysis is not required for the proposed Project, because of the scope of work. The RSA is the same as the Community Impact RSA described in Section 2.2.1, *Existing and Future Land Use*, (see Figure 2.2.1-1) and includes a 0.5-mile buffer around the Project Study Area. The Community Impact RSA extends into a small part of the City of Los Angeles on the west and east sides of the Community Impact RSA, and into a small part of the City of Long Beach on the southeast side of the Community Impact RSA; however, the local analysis is limited to the City of Carson to best reflect the affected environment (see Section 1.2.1, *Purpose and Need* (see Table 1.2-1).

Existing transportation facilities within and adjacent to the Community Impact RSA are shown in Figure 2.2.7-1 and Figure 2.2.7-2. There is an existing bike path along the east side of the Dominguez Channel within the City of Carson and a planned bike path along the west side of Dominguez Channel from Avalon to Carson Street, which would pass under the Project Study Area where the Dominguez Channel flows under I-405.

Access and Circulation, and Parking

Highways

Within the Project Study Area, I-405 is a controlled-access freeway generally consisting of two controlled-access HOV lanes and eight general purpose lanes. I-405 is a bypass route to Interstate 5 (I-5) providing intra-regional and inter-regional access between Orange County and Los Angeles County. There are no local bus routes that travel along this segment of I-405, and pedestrian and bicycle access are prohibited. I-405 connects with the following local street interchanges within the Project Study Area:

- I-405/Wilmington Avenue interchange
- I-405/Carson Street interchange
- I-405/Avalon Boulevard interchange
- I-405/Main Street interchange

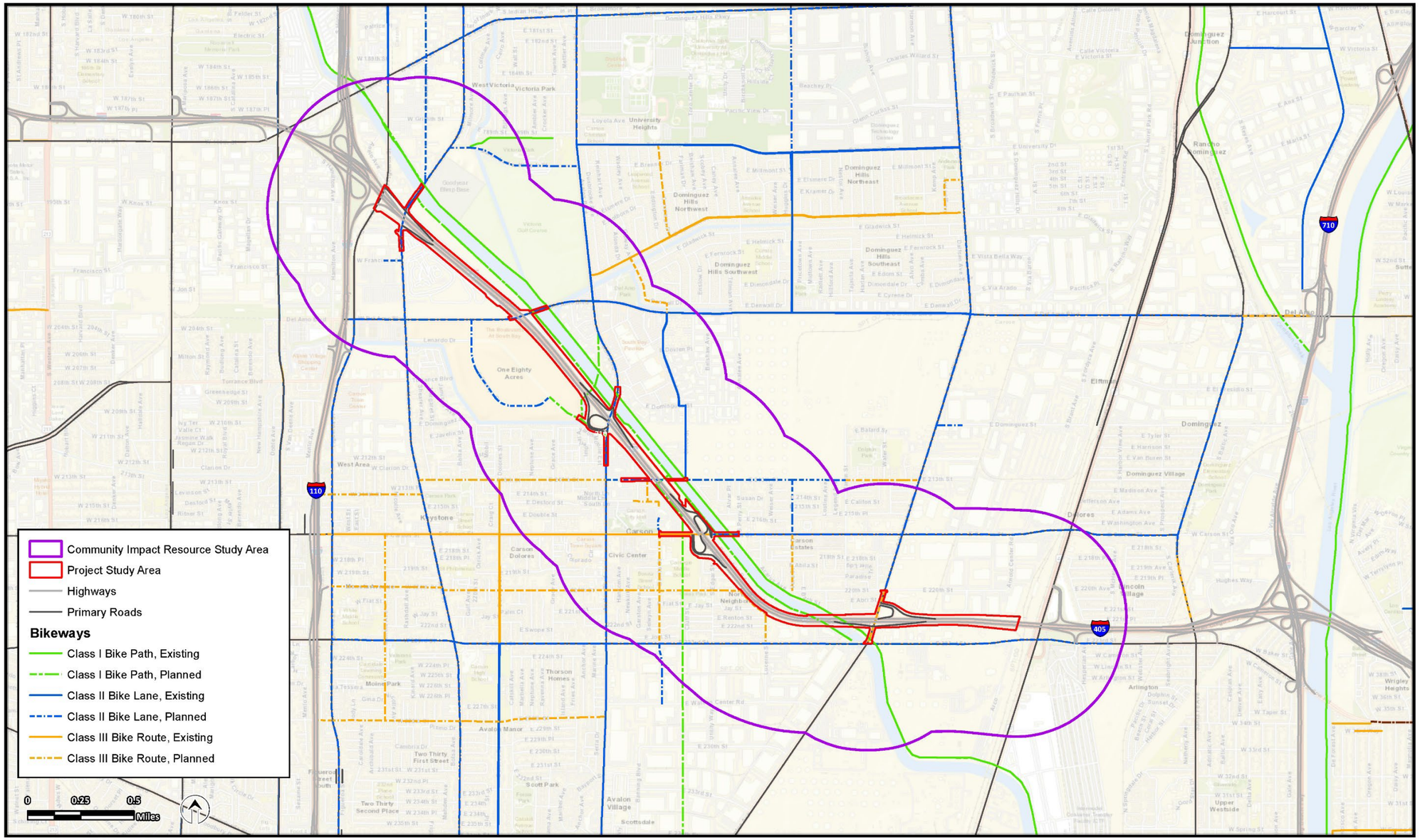

Figure 2.2.7-1: Bicycle and Pedestrian Facilities

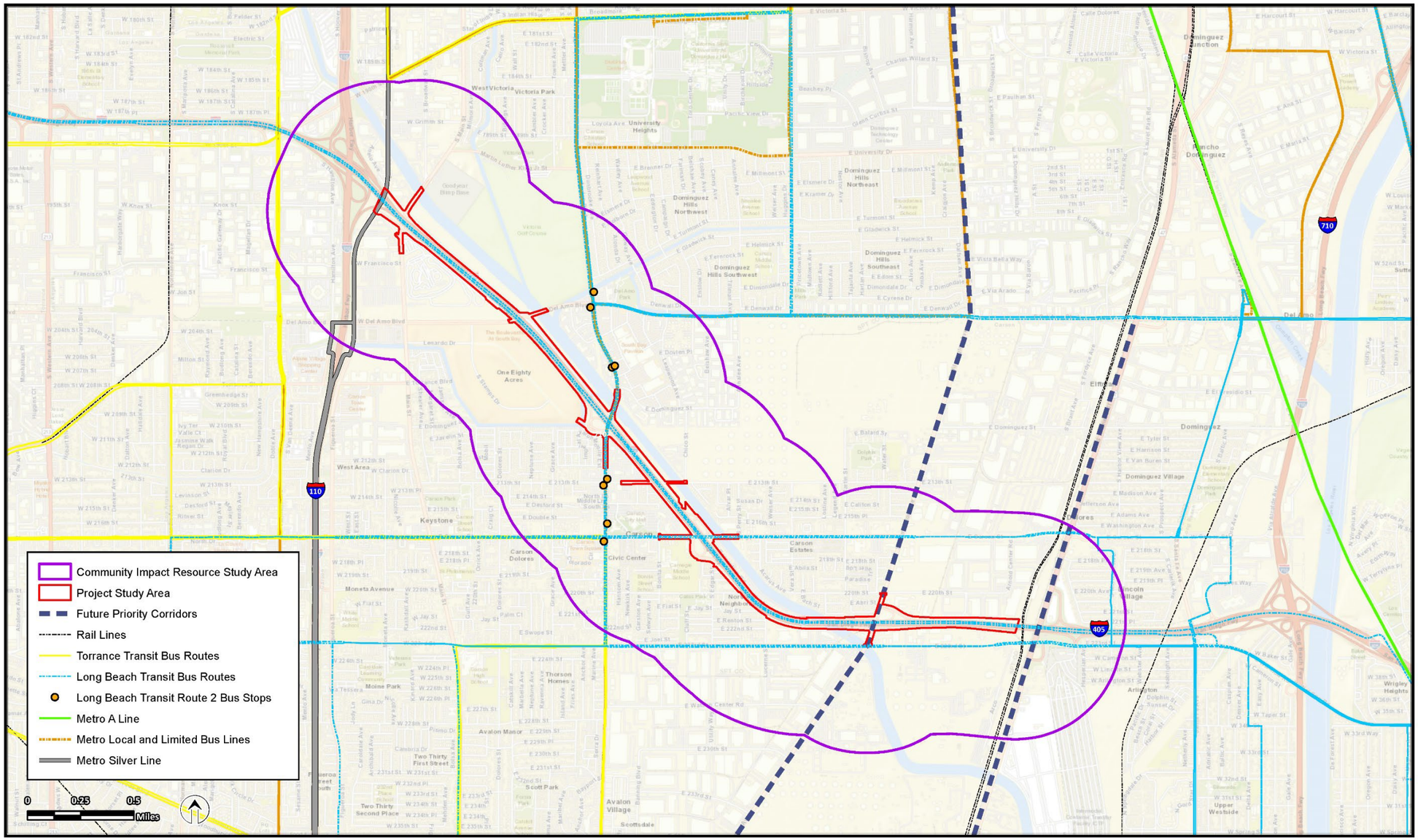

Figure 2.2.7-2: Public Transit Facilities

There are truck weigh stations in each direction of I-405 between the Avalon Boulevard and Main Street interchanges with truck-exclusive on- and off-ramps. All local interchange ramps along the I-405 Project corridor are currently metered and operational. Most on-ramps within the Project Study Area do not have an HOV lane, with exceptions at the SB I-405 Carson Street On-Ramp and the SB I-405 Main Street On-Ramp; the HOV lane is not metered at these locations.

Freeway operations under Existing Year (2024) conditions are presented for the AM peak hour (7:30 to 8:30 AM) and PM peak hour (4:30 to 5:30 PM) (see Table 2.2.7-1). In the peak direction, the existing bottlenecks result in LOS E or F operations on NB I-405 from the SB Wilmington Avenue on-ramp to the I-110 SB on-ramp in the AM peak hour and southbound I-405 from the NB and SB I-110 off-ramp to the Wilmington Avenue on-ramp in the PM peak hour. In the off-peak direction, the NB and SB I-110 on-ramps operate at LOS F in the PM peak hour, and the segments south of the Wilmington Avenue off-ramp operate at LOS E in the AM peak hour. All other mainline segments and ramps within the Project Study Area operate at LOS D or better.

Table 2.2.7-1: Existing Year (2024) Peak Hour I-405 Operations

Freeway Segments	Level of Service (LOS)			
	Northbound I-405		Southbound I-405	
	AM Peak	PM Peak	AM Peak	PM Peak
NB Wilmington Avenue Off-Ramp	D	C	N/A	N/A
SB Wilmington Avenue Off-Ramp	N/A	N/A	D	**F**
NB Wilmington Avenue Off-Ramp to NB Wilmington Avenue On-Ramp	D	D	N/A	N/A
SB Wilmington Avenue Off-Ramp to Wilmington Avenue On-Ramp	N/A	N/A	**E**	**F**
NB Wilmington Avenue On-Ramp	D	D	**E**	**F**
SB Wilmington Avenue On-Ramp	**E**	D	N/A	N/A
SB Wilmington Avenue On-Ramp to Carson Street Off-Ramp	**E**	D	D	**F**
Carson Street Off-Ramp	**E**	D	D	**F**
Carson Street Off-Ramp to Carson Street on-Ramp	**E**	D	D	**F**
Carson Street On-Ramp	**E**	C	D	**F**
Carson Street On-Ramp to Avalon Boulevard Off-Ramp	**E**	D	D	**F**
Avalon Boulevard Off-Ramp	**E**	D	C	**F**
Avalon Boulevard Off-Ramp to Avalon Boulevard On-Ramp	**F**	D	D	**F**
Avalon Boulevard On-Ramp	**F**	C	C	**F**
Avalon Boulevard On-Ramp to Carson Street Off-Ramp	N/A	N/A	D	**F**
Avalon Boulevard On-Ramp to Main Street Off-Ramp	**F**	C	N/A	N/A

Freeway Segments	Level of Service (LOS)			
	Northbound I-405		Southbound I-405	
	AM Peak	PM Peak	AM Peak	PM Peak
Main Street On-Ramp to Avalon Boulevard Off-Ramp	N/A	N/A	C	**F**
Main Street On-Ramp	N/A	N/A	D	**F**
Main Street Off-Ramp	**F**	C	N/A	N/A
I-110 Off-Ramp	**F**	C	C	**F**
I-110 Off-Ramp to NB 1-110 On-Ramp	**F**	D	N/A	N/A
I-110 Off-Ramp to SB I-110 On-Ramp	N/A	N/A	C	**F**
NB I-110 On-Ramp	**F**	**F**	C	**F**
SB I-110 On-Ramp	**F**	**F**	C	**F**

Source: (Fehr & Peers 2025)
Notes: Bold font indicates LOS of E or F.

Northbound Interstate 405

Congestion along the NB I-405 corridor is attributed to a single bottleneck upstream of the Project Study Area. The reoccurring congestion along the NB I-405 corridor generally extends to the NB I-405 on-ramp from Avalon Boulevard. There is a bottleneck on NB I-405 after the NB I-405 off-ramp to Normandie Avenue. Prior to the bottleneck, there are seven lanes on the NB I-405 mainline: four travel lanes continue past the NB I-405 off-ramp to NB and SB I-110, one travel lane is added at the NB I-405 on-ramp from NB I-110, one travel lane is added at the NB I-405 On-Ramp from SB I-110, and one travel/auxiliary lane is added at the NB I-405 on-ramp from Vermont Avenue. At NB I-405 off-ramp to Normandie Avenue, the travel/auxiliary lane from NB I-405 on-ramp from Vermont Avenue becomes an exit lane, reducing the number of lanes from seven to six. Right after the NB I-405 off-ramp to Normandie Avenue, the outer lanes merge, reducing the number of lanes from six to five. The combination of weaving and merging forms a bottleneck on NB I-405 north of the NB I-405 off-ramp to Normandie Avenue.

Southbound Interstate 405

Congestion along the SB I-405 corridor is attributed to multiple bottlenecks. The reoccurring congestion along the SB I-405 corridor generally extends for over 30 miles between the Orange County Line and the Sepulveda Pass. There is a bottleneck on SB I-405 downstream of the SB I-405 off-ramps to I-710. Prior to the bottleneck, there are six lanes on the SB I-405 mainline. The two lane drops at the SB I-405 off-ramp to NB I-710 and the SB I-405 off-ramp to SB I-710 reduce the number of lanes on the SB I-405 mainline from six to four. Substantial weaving occurs prior to the major diverge, resulting in a bottleneck. There is also a bottleneck on SB I-405 at the SB I-405 on-ramp from Western Avenue, prior to the SB I-405 off-ramps to I-110. Substantial weaving occurs prior to the major diverge, in combination with the high volume of merging traffic from the SB I-405 on-ramp from Western Avenue.

Local Roadways

Under existing conditions, the local roadway network within the Project Study Area is not congested during the AM peak hour. During the PM peak hour, congested conditions were observed at the intersection of Wilmington Avenue at the SB I-405 on-ramp and off-ramp (see Table 2.2.7-2). This location is metered by the upstream intersection at Wilmington Avenue at 223rd Street, and generally queue lengths were consistent throughout the peak hour and similar at the beginning and end of the peak hour. Other areas of the local roadway network within the Project Study Area were not congested during the PM peak hour.

Table 2.2.7-2: Existing Year (2024) Peak Hour Intersection Operations

Intersection	LOS		Delay (Second/Vehicle)		Queue Length (Feet*)	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Figueroa Street/NB I-405 Frontage Road	C	B	18	13	0-290	0-145
Figueroa Street/SB I-405 Frontage Road	A	A	2	4	0-60	0-170
Main Street/I-405 NB Ramps	B	B	18	13	80-315	70-285
Main Street/I-405 SB Ramps	B	B	11	18	115-185	**150-300**
Avalon Boulevard/I-405 NB Ramps	B	C	11	33	0-240	**0-870**
Avalon Boulevard/I-405 SB Ramps	B	C	12	26	0-315	**0-410**
Carson Street/I-405 NB Ramps	A	A	9	8	**30-190**	**35-215**
Carson Street/I-405 SB Ramps	A	F	8	133	**25-395**	**25->5,000**
Wilmington Avenue/I-405 NB Ramps	B	B	19	16	**70-510**	**205-400**
Wilmington Avenue/I-405 SB Ramps	A	A	0	0	**155-515**	**50-520**
Wilmington Avenue/220th Street	A	B	8	13	80-250	**55-345**
Wilmington Avenue/223rd Street	E	E	62	76	**55-1,435**	**70-3,715**

Source: (Fehr & Peers 2025)
Note: *Range provided for different turning movements at each intersection. Bold Font indicates queues where some approach movements exceed the turning storage length.

During the Existing (2024) AM and PM peak hours, all study intersections operate at LOS C or better, except for the Carson Street/I-405 SB Ramps and Wilmington Avenue/223rd Street operate at LOS E in both the AM and PM peak hours (see Table 2.2.7-2). The LOS E and F operations are primarily the result of congestion on I-405 mainline that causes queue spillback to and beyond the on-ramps and consequently affect the ramp terminal intersections. In addition, the available storage capacity is exceeded at several I-405 ramp terminal intersections during peak hours.

Network performance measures provide a good assessment of overall operations within the Project Study Area. Based on overall network performance, the PM peak period experiences higher delays and lower average speeds across the network compared to the AM peak period (see Table 2.2.7-3).

Table 2.2.7-3: Existing Year (2024) Network Performance

Performance Measures	AM Peak Period	PM Peak Period
Average Delay Per Vehicle (Minutes)	2.2	5.7
Average Speed (Miles Per Hour)	37	23
Total Vehicle Hours of Delay (Hours)	3,624	9,585
Volume Served (Vehicles)	93,113	96,005
I-405 Northbound Average Speed (Miles Per Hour)	25	52
I-405 Northbound Average Travel Time (Minutes)	12	6
I-405 Southbound Average Speed (Miles Per Hour)	49	14
I-405 Southbound Average Travel Time (Minutes)	6	21

Source: (Fehr & Peers 2025)

Safety

According to TASAS data for the 3-year period between April 1, 2020, and March 31, 2023, a total of 777 collisions occurred on mainline segments, of which two resulted in fatalities. A total of 117 collisions occurred on ramps/frontage roads, of which one resulted in a fatality on the NB I-405 off-ramp to I-110. The most common collision types were Rear-End (47 percent), Sideswipe (31 percent), and Hit Object (17 percent). Five mainline segment and eight ramp locations had collision rates above the state average for similar facility types (Fehr & Peers 2025). See Section 1.2.2, *Need*, for detailed information on collision data.

Bicycle and Pedestrian Facilities

The City's General Plan Circulation Element identifies various types of bikeway facilities located within the Community Impact RSA (City of Carson 2023).

- Class I Bikeways: Bike paths or shared-use paths with exclusive right-of-way (ROW) for bicyclists and pedestrians, away from the roadway and with cross flows by motor traffic minimized.

- Class II Bike Lanes: Established along streets and are defined by pavement striping and signage to delineate a portion of a roadway for bicycle travel. These are generally one-way facilities, striped adjacent to motor traffic travelling in the same direction.

- Class III Bike Routes: Designated preferred route for bicyclists in streets shared with motor traffic not served by dedicated bikeways to provide continuity to the bikeway network.

- Class IV Separated Bikeways: Protected bike lanes for the exclusive use of bicycles, physically separated from motor traffic with a vertical feature. There are no Class IV separated bikeways within the Community Impact RSA.

Existing and future bicycle facilities in the Community Impact RSA are shown in Figure 2.2.7-1, and Table 2.2.7-4 lists future planned facilities.

Table 2.2.7-4: Planned Bicycle/Pedestrian Facilities in the Resource Study Area

Location	Project Name	Description	Owner/Operator
Future Bicycle Facilities			
B-1	PW1600 Dominguez Channel Bike Path II	This project would include bike path installation along Dominguez Channel from Avalon to Carson Street.	City of Carson
B-2	PW1700 Construction of Bike Facility and Active Transportation Improvements	This project would supplement the construction cost for more than 30 miles of bike facilities and active transportation improvements.	City of Carson
B-3	PW1703 Design and Construct Bike improvements	This project includes the design and construction of the balance of the improvements described in the bike master plan, which is approximately 58 miles of bike improvements.	City of Carson

Source: (City of Carson 2025)

Parking

There are no public parking facilities along or adjacent to I-405. Existing public parking in the Community Impact RSA consists primarily of on-street parking that does not overlap with the limits of the proposed Project; however, there is existing on-road street parking on 213th Street within the Project Study Area between Selwyn Avenue and the Dominguez Channel access trail.

Public Transit

The Community Impact RSA includes the following bus routes traveling east-west on Carson Street and north-south on Avalon Boulevard.

- Long Beach Transit – Routes 2 and 4
- Torrance Transit – Route 3
- Metro – Routes 205 and 246

Bus stops in the Community Impact RSA are listed in Table 2.2.7-5 and shown in Figure 2.2.7-2. The City's General Plan also identifies several priority corridors for future

transit improvements, including Wilmington Avenue and Alameda Street within the City limits (see Figure 2.2.7-2).

Table 2.2.7-5: Bus Transportation

Location	Description	Route Number	Owner/Operator
Avalon Boulevard/213th Street	Northeast corner of Avalon Boulevard and 213th Street	Route 2	Long Beach Transit
Avalon Boulevard/213th Street	Southwest corner of Avalon Boulevard and 213th Street	Route 2	Long Beach Transit
Avalon Boulevard/Carson Mall	West side of Avalon Boulevard	Route 2	Long Beach Transit
Avalon Boulevard/Carson Mall	East Side of Avalon Boulevard	Route 2	Long Beach Transit
Avalon Boulevard/South Bay Pavilion	West side of Avalon Boulevard	Route 2	Long Beach Transit
Avalon Boulevard/South Bay Pavilion	East Side of Avalon Boulevard	Route 2	Long Beach Transit
Avalon Boulevard/Del Amo Boulevard	Northeast corner of Avalon Boulevard and Del Amo Boulevard	Route 2	Long Beach Transit
Avalon Boulevard/Del Amo Boulevard	Southwest corner of Avalon Boulevard and Del Amo Boulevard	Route 2	Long Beach Transit

Source: (City of Carson n.d.)

2.2.7.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, construction activities would not be implemented; therefore, no short-term direct or indirect impacts on transportation would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Highways and Local Roadways

Alternative 2 could result in temporary impacts on access and circulation from increased congestion during construction activities, mainline closures, staging, and ramp closures. Traffic detours for ramp closures would occur at the following ramps for either overnight or extended weekend closures:

- Wilmington Avenue SB Off-Ramp
- Wilmington Avenue NB On-Ramp
- Carson Street SB Off-Ramp

- Carson Street SB On-Ramp
- Carson Street NB Off-Ramp
- Carson Street NB On-Ramp
- Avalon Boulevard NB Off-Ramp
- Avalon Boulevard SB On-Ramp
- Main Street NB Off-Ramp

Temporary ramp closures would occur during construction, and would be reopened following the completion of work in those areas. Ramps would not be closed simultaneously and would be staggered to minimize closure impacts. Project Feature **PF-TR-1**, which includes implementation of a TMP, would be implemented (see Section 1.4, *Project Alternatives*). The TMP would identify alternate routes, detours, and access points for motorists. To further minimize impacts on motorists (e.g., work hazards, traffic delays, motorist distractions) improvements would be staggered in multiple stages. Ramps would be reopened following the completion of work in those areas. Therefore, with the incorporation of Project Feature **PF-TR-1**, no short-term direct or indirect adverse impacts on roadways would result from construction of the proposed Project under Alternative 2.

Bicycle and Pedestrian Facilities

Alternative 2 would result in temporary reduced bicycle and pedestrian access from construction traffic and staging during short-term periods of the construction of the proposed Project's Complete Streets elements. However, these impacts would be short term, intermittent, and access would be maintained on at least one side of the roadway for bicycle and pedestrians throughout construction, and access would be restored following completion of activities. Therefore, no short-term direct or indirect adverse impacts on bicycle and pedestrian facilities would result from construction of the proposed Project under Alternative 2.

There is one planned bicycle path within the Community Impact RSA, Route B-1, that may be temporarily affected by the implementation of Alternative 2. If this route is constructed prior to or at the same time as the proposed Project, the route may be impacted by temporary closures, staging, or access beneath the Dominguez Channel Bridge. However, following construction, this bicycle path would be accessible and operate according to plans by the City. If construction timelines are found to overlap or if the route has been constructed prior to implementation of Alternative 2, coordination would be conducted to reduce impacts on access.

Parking

Alternative 2 would result in the permanent removal of approximately 0.12 mile of on-street parking on each side of 213th Street between Selwyn Avenue and the

Dominguez Channel maintenance access road; this area would also be impacted during construction. No other parking would be impacted during construction of the proposed Project; therefore, no short-term direct or indirect adverse impacts on parking would result from construction of the proposed Project under Alternative 2.

Public Transit

Traffic may temporarily increase along local roadways due to freeway detours, mainline and ramp closures, and construction-related traffic during construction. Traffic detours for ramp closures would be provided for the ramps listed above for either overnight, extended weekend, or 10-day closures. Consecutive ramps would not be closed simultaneously to further minimize impacts on motorists. Detour routes would be provided as part of Project Feature **PF-TR-1** to maintain access to businesses and residences. A TMP would be incorporated as part of the proposed Project and would identify alternate routes, detours, and access points for motorists and buses.

Alternative 2 would result in temporary impacts on local bus routes from traffic and staging during short-term periods of the construction of the proposed Project's Complete Streets elements. However, these impacts would be short term and intermittent, and Project Feature **PF-TR-1** would be implemented to maintain access for buses throughout construction; access would be restored following completion of activities. Bus stops along Long Beach Transit Bus Route 2 could be affected temporarily during proposed Project construction. The bus routes would continue to operate during construction. Therefore, with the incorporation of Project Feature **PF-TR-1**, no short-term direct or indirect adverse impacts on bus routes would result from construction of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

As discussed under Alternative 2, temporary traffic and access impacts on I-405 ramps, roadways, bicycle and pedestrian facilities, parking, and public transit may occur during construction of some Complete Streets elements and TSM/TDM elements. However, these impacts would be short term and intermittent, and access would be restored following completion of activities. Therefore, no short-term direct or indirect adverse impacts on transportation would result from construction of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented; therefore, no long-term direct or indirect impacts on transportation would result. However, the No-Build Alternative would not achieve the operational improvements included in the purpose and need for the proposed Project. In the Opening Year (2030) under the No-Build

Alternative, existing bottlenecks would result in LOS E or F operations at most I-405 segments during either the AM or PM peak hours (see Table 2.2.7-6).

Table 2.2.7-6: Existing and Projected Peak Hour I-405 Operations Under Opening Year (2030) Conditions

Freeway Segments	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Northbound I-405						
Wilmington Avenue Off-Ramp	D	C	D	C	D	C
NB Wilmington Avenue Off-Ramp to NB Wilmington Avenue On-Ramp	D	D	D	D	**E**	D
NB Wilmington Avenue On-Ramp	**E**	D	**E**	D	**E**	D
SB Wilmington Avenue On-Ramp	**F**	D	D	C	**E**	D
SB Wilmington Avenue On-Ramp to Carson Street Off-Ramp	**E**	D	D	C	**E**	D
Carson Street Off-Ramp	**F**	D	D	C	**F**	D
Carson Street Off-Ramp to Carson Street On-Ramp	**E**	D	**E**	D	**E**	D
Carson Street On-Ramp	**F**	D	**E**	C	**F**	D
Carson Street On-Ramp to Avalon Boulevard Off-Ramp	**F**	D	**E**	C	**F**	D
Avalon Boulevard Off-Ramp	**F**	D	**E**	C	**F**	D
Avalon Boulevard Off-Ramp to Avalon Boulevard On-Ramp	**F**	D	**F**	D	**F**	D
Avalon Boulevard On-Ramp	**F**	D	**F**	D	**F**	D
Avalon Boulevard On-Ramp to Main Street Off-Ramp	**F**	C	**F**	C	**F**	C
Main Street Off-Ramp	**F**	C	**F**	C	**F**	C
I-110 Off-Ramp	**F**	C	**F**	C	**F**	C
I-110 Off-Ramp to NB 1-110 On-Ramp	**F**	**E**	**F**	**E**	**F**	**E**
NB I-110 On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
SB I-110 On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Southbound I-405						
NB and SB I-110 Off-Ramp	C	**F**	D	**F**	C	**F**
NB and SB I-110 Off-Ramp to SB I-110 On-Ramp	C	**F**	C	**F**	C	**F**
SB I-110 On-Ramp	C	**F**	C	**F**	C	**F**
NB I-110 On-Ramp	C	**F**	C	**F**	C	**F**
Main Street On-Ramp	D	**F**	D	**F**	D	**F**
Main Street On-Ramp to Avalon Boulevard Off-Ramp	C	**F**	D	**F**	D	**F**
Avalon Boulevard Off-Ramp	C	**F**	D	**F**	D	**F**

Freeway Segments	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Avalon Boulevard Off-Ramp to SB Avalon Boulevard On-Ramp	D	**F**	D	**F**	D	**F**
SB Avalon Boulevard On-Ramp	D	**F**	D	**F**	D	**F**
NB Avalon Boulevard On-Ramp	C	**F**	**E**	**F**	**E**	**F**
NB Avalon Boulevard On-Ramp to Carson Street Off-Ramp	D	**F**	**E**	**F**	**F**	**F**
Carson Street Off-Ramp	D	**F**	**E**	**F**	**F**	**F**
Carson Street Off-Ramp to Carson Street On-Ramp	D	**F**	**F**	**F**	**F**	**F**
Carson Street On-Ramp	D	**F**	**F**	**F**	**F**	**F**
Carson Street On-Ramp to Wilmington Avenue Off-Ramp	D	**F**	**F**	**F**	**F**	**F**
Wilmington Avenue Off-Ramp	D	**F**	**F**	**F**	**F**	**F**
Wilmington Avenue Off-Ramp to Wilmington Avenue On-Ramp	**E**	**F**	**E**	**F**	**E**	**F**
Wilmington Avenue On-Ramp	**E**	**F**	**F**	**F**	**F**	**F**

Source: (Fehr & Peers 2025)
Notes: Bold font indicates LOS E or F conditions.

Under the Opening Year (2030) condition, all study intersections would operate at LOS C or better except for three locations; this would be similar to existing conditions (see Table 2.2.7-7). In addition, certain movements/approaches would exceed the available storage capacity at seven of the I-405 ramp terminal intersections during peak hours.

Table 2.2.7-7: Opening Year (2030) Peak Hour Intersection Operations

Intersection	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Level of Service						
Figueroa Street/NB I-405 Frontage Road	C	B	C	B	C	B
Figueroa Street/SB I-405 Frontage Road	A	A	A	A	A	A
Main Street/I-405 NB Ramps	B	B	B	B	B	B
Main Street/I-405 SB Ramps	B	B	B	B	B	B
Avalon Boulevard/I-405 NB Ramps	B	F	B	C	B	F
Avalon Boulevard/I-405 SB Ramps	B	C	B	B	B	C
Carson Street/I-405 NB Ramps	B	A	B	B	B	B
Carson Street/I-405 SB Ramps	A	F	A	B	A	F

Intersection	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Wilmington Avenue/I-405 NB Ramps	B	B	B	B	B	B
SB Wilmington Avenue/I-405 NB On-Ramp	A	A	A	A	A	A
Wilmington Avenue/I-405 SB Ramps	B	B	B	B	B	B
Wilmington Avenue/220th Street	B	B	B	B	B	B
Wilmington Avenue/223rd Street	**E**	**E**	**E**	**E**	**E**	**F**
Stadium Way/I-405 SB Ramps	B	C	B	C	B	C
Delay (Second/Vehicle)						
Figueroa Street/NB I-405 Frontage Road	18	14	17	14	18	14
Figueroa Street/SB I-405 Frontage Road	3	5	3	5	3	5
Main Street/I-405 NB Ramps	19	17	18	17	19	17
Main Street/I-405 SB Ramps	11	19	11	19	11	19
Avalon Boulevard/I-405 NB Ramps	15	93	17	27	18	98
Avalon Boulevard/I-405 SB Ramps	15	24	16	17	16	28
Carson Street/I-405 NB Ramps	11	8	14	11	17	11
Carson Street/I-405 SB Ramps	9	138	8	18	9	124
Wilmington Avenue/I-405 NB Ramps	20	16	20	16	20	16
SB Wilmington Avenue/I-405 SB Ramps	0	0	0	0	0	0
Wilmington Avenue/I-405 SB Ramps	16	11	14	12	16	11
Wilmington Avenue/220th Street	10	15	10	14	10	14
Wilmington Avenue/223rd Street	72	80	71	76	70	81
Stadium Way/I-405 SB Ramps	20	26	19	26	19	26
Queue Length (Feet*)						
Figueroa Street/NB I-405 Frontage Road	0-260	0-180	0-265	0-195	0-270	0-185
Figueroa Street/SB I-405 Frontage Road	0-60	0-195	0-60	0-240	0-60	0-230
Main Street/I-405 NB Ramps	80-275	100-330	75-285	115-390	75-300	105-340
Main Street/I-405 SB Ramps	110-215	195-300	110-215	205-335	115-210	215-310
Avalon Boulevard/I-405 NB Ramps	0-275	0-2,325	**200-360**	150-945	**185-365**	160-2,640
Avalon Boulevard/I-405 SB Ramps	0-320	0-435	150-305	125-345	135-315	135-440
Carson Street/I-405 NB Ramps	**30-190**	35-215	**40-465**	35-340	**40-565**	35-340
Carson Street/I-405 SB Ramps	**30-350**	30->5,000	**30-390**	30->5,000	**30-370**	30->5,000
Wilmington Avenue/I-405 NB Ramps	**80-510**	200-390	**85-460**	190-385	**85-495**	195-395
Wilmington Avenue/I-405 SB Ramps	**190-525**	50-545	**190-550**	55-520	**195-545**	70-525
Wilmington Avenue/220th Street	**85-280**	75-330	**85-280**	75-320	85-265	75-315

Intersection	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Wilmington Avenue/223rd Street	**65-1,660**	80-4390	**65-1,590**	75-4120	**65-1,540**	75-4140
Stadium Way/I-405 SB Ramps	5-270	30-425	10-255	0-445	5-275	10-660

Source: (Fehr & Peers 2025)
Note: *Range provided for different turning movements at each intersection. Bold font indicates queues where some approach movements exceed the turning storage length.

In Design Year (2050) under the No-Build Alternative, congestion resulting from existing bottlenecks would continue to worsen, and most of the I-405 corridor within the Project Study Area would operate at LOS E or F during either the AM or PM peak hours (see Table 2.2.7-8). All study intersections would operate at LOS C or better except for three locations; this would be similar to Opening Year (2030) conditions. In addition, certain movements/approaches would exceed the available storage capacity at most of the I-405 ramp terminal intersections during peak hours (see Table 2.2.7-9).

Table 2.2.7-8: Projected Peak Hour I-405 Operations Under Design Year (2050) Conditions

Freeway Segments	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Northbound I-405						
Wilmington Avenue Off-Ramp	**F**	D	**F**	D	**F**	D
NB Wilmington Avenue Off-Ramp to NB Wilmington Avenue On-Ramp	**F**	**E**	**F**	D	**F**	**E**
NB Wilmington Avenue On-Ramp	**F**	**F**	**F**	D	**F**	**F**
SB Wilmington Avenue On-Ramp	**F**	**F**	**F**	D	**F**	**F**
SB Wilmington Avenue On-Ramp to Carson Street Off-Ramp	**F**	**F**	**F**	C	**F**	**F**
Carson Street Off-Ramp	**F**	**F**	**F**	C	**F**	**F**
Carson Street Off-Ramp to Carson Street On-Ramp	**F**	**E**	**F**	C	**F**	**E**
Carson Street On-Ramp	**F**	**F**	**F**	D	**F**	**F**
Carson Street On-Ramp to Avalon Boulevard Off-Ramp	**F**	**F**	**F**	D	**F**	**F**
Avalon Boulevard Off-Ramp	**F**	**F**	**F**	**E**	**F**	**F**
Avalon Boulevard Off-Ramp to Avalon Boulevard On-Ramp	**F**	**E**	**F**	**E**	**F**	D
Avalon Boulevard On-Ramp	**F**	**E**	**F**	**F**	**F**	**E**
Avalon Boulevard On-Ramp to Main Street Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Main Street Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
I-110 Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
I-110 Off-Ramp to NB 1-110 On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**

Freeway Segments	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
NB I-110 On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
SB I-110 On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Southbound I-405						
NB and SB I-110 Off-Ramp	D	**F**	D	**F**	D	**F**
NB and SB I-110 Off-Ramp to SB I-110 On-Ramp	**F**	**F**	C	**F**	C	**F**
SB I-110 On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
NB I-110 On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Main Street On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Main Street On-Ramp to Avalon Boulevard Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Avalon Boulevard Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Avalon Boulevard Off-Ramp to SB Avalon Boulevard On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
SB Avalon Boulevard On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
NB Avalon Boulevard On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
NB Avalon Boulevard On-Ramp to Carson Street Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Carson Street Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Carson Street Off-Ramp to Carson Street On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Carson Street On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Carson Street On-Ramp to Wilmington Avenue Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Wilmington Avenue Off-Ramp	**F**	**F**	**F**	**F**	**F**	**F**
Wilmington Avenue Off-Ramp to Wilmington Avenue On-Ramp	**E**	**F**	**E**	**F**	**E**	**F**
Wilmington Avenue On-Ramp	**F**	**F**	**F**	**F**	**F**	**F**

Source: (Fehr & Peers 2025)
Notes: Bold font indicates LOS E or F conditions.

Table 2.2.7-9: Design Year (2050) Peak Hour Intersection Operations

Intersection	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Level of Service						
Figueroa Street/NB I-405 Frontage Road	C	C	C	C	C	C
Figueroa Street/SB I-405 Frontage Road	A	A	A	A	A	A
Main Street/I-405 NB Ramps	B	B	B	C	B	B
Main Street/I-405 SB Ramps	B	B	B	B	B	B

Intersection	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Avalon Boulevard/I-405 NB Ramps	B	**F**	B	B	C	**F**
Avalon Boulevard/I-405 SB Ramps	B	C	B	B	B	C
Carson Street/I-405 NB Ramps	B	A	B	B	B	B
Carson Street/I-405 SB Ramps	A	**F**	A	B	A	**F**
Wilmington Avenue/I-405 NB Ramps	C	B	C	B	C	B
SB Wilmington Avenue/I-405 NB On-Ramp	A	A	A	A	A	A
Wilmington Avenue/I-405 SB Ramps	B	B	B	B	B	B
Wilmington Avenue/220th Street	B	B	B	B	B	B
Wilmington Avenue/223rd Street	**E**	**E**	**E**	**E**	**E**	**E**
Stadium Way/I-405 SB Ramps	C	C	C	C	C	C
Delay (Second/Vehicle)						
Figueroa Street/NB I-405 Frontage Road	19	16	19	15	19	15
Figueroa Street/SB I-405 Frontage Road	2	6	2	6	3	6
Main Street/I-405 NB Ramps	18	19	17	23	18	19
Main Street/I-405 SB Ramps	11	19	11	19	11	19
Avalon Boulevard/I-405 NB Ramps	17	117	19	16	20	119
Avalon Boulevard/I-405 SB Ramps	15	25	16	15	16	29
Carson Street/I-405 NB Ramps	14	8	14	12	19	11
Carson Street/I-405 SB Ramps	10	138	8	17	9	124
Wilmington Avenue/I-405 NB Ramps	21	16	22	16	20	16
SB Wilmington Avenue/I-405 NB On-Ramp	0	0	0	0	0	0
Wilmington Avenue/I-405 SB Ramps	17	11	15	11	17	11
Wilmington Avenue/220th Street	11	14	10	14	10	14
Wilmington Avenue/223rd Street	72	75	69	72	71	72
Stadium Way/I-405 SB Ramps	22	27	22	26	22	26
Queue Length (Feet*)						
Figueroa Street/NB I-405 Frontage Road	0-280	0-225	0-260	0-205	0-255	0-190
Figueroa Street/SB I-405 Frontage Road	0-55	**0-280**	0-55	0-240	0-55	**0-280**
Main Street/I-405 NB Ramps	75-275	**100-320**	75-285	**100-605**	80-285	**90-405**
Main Street/I-405 SB Ramps	110-210	**210-335**	110-210	**220-335**	110-210	**205-330**
Avalon Boulevard/I-405 NB Ramps	**0-395**	**0-2,860**	**225-375**	165-525	**190-410**	**190-2,935**
Avalon Boulevard/I-405 SB Ramps	0-325	**0-435**	175-315	**125-370**	**160-335**	**130-450**
Carson Street/I-405 NB Ramps	**40-165**	**35-200**	**45-560**	**35-340**	**45-510**	**35-350**

Intersection	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Carson Street/I-405 SB Ramps	**30-410**	**30->5,000**	**30-405**	**30-1,070**	**30-415**	**30->5,000**
Wilmington Avenue/I-405 NB Ramps	**85-570**	**195-405**	**85-620**	**200-405**	**70-550**	**205-390**
Wilmington Avenue/I-405 SB Ramps	**185-515**	**60-535**	**205-505**	**40-525**	**210-510**	**45-520**
Wilmington Avenue/220th Street	**85-345**	**80-415**	**105-325**	**80-410**	**100-310**	**80-410**
Wilmington Avenue/223rd Street	**90-1,880**	**55-4,285**	**85-1,685**	**55-4,105**	**85-1,655**	**55-4,190**
Stadium Way/I-405 SB Ramps	5-340	20-805	10-320	10-635	10-350	10-690

Source: (Fehr & Peers 2025)
Note: *Range provided for different turning movements at each intersection. Bold font indicates queues where some approach movements exceed the turning storage length.

Alternative 2 – Auxiliary Lanes and Complete Streets

Highways and Local Roadways

Under Opening Year (2030) conditions, Alternative 2 would improve freeway mainline LOS along some segments of I-405 within the Project Study Area (see Table 2.2.7-6), and overall traffic densities would be reduced. Alternative 2 would also improve LOS and reduce the length of the queue at several study intersections (see Table 2.2.7-7). In Opening Year (2030), Alternative 2 would result in a 3 percent reduction in average delay per vehicle and total delay for all vehicles during the AM peak period and 9 to 10 percent reduction during the PM peak period. Average speed and total travel time would be similar to the No-Build Alternative during the AM peak period but would result in 6 percent higher speeds and less travel time during the PM peak period (see Table 2.2.7-10).

Table 2.2.7-10: Projected Opening Year (2030) Network Performance

Performance Measures	No-Build Alternative		Alternative 2		Alternative 3	
	AM Peak Period	PM Peak Period	AM Peak Period	PM Peak Period	AM Peak Period	PM Peak Period
Average Delay Per Vehicle (Minutes)	2.7	6.4	2.6	5.8	2.7	6.4
Average Speed (miles per hour)	35	21	35	23	35	21
Total Vehicle Hours of Delay (hours)	4,462	11,107	4,314	10,000	4,445	11,065
Volume Served (vehicles)	95,975	99,173	95,954	99,114	95,905	99,261
I-405 Northbound Average Speed (miles per hour)	23	43	23	43	23	43
I-405 Northbound Average Travel Time (minutes)	13	7	13	7	13	7
I-405 Southbound Average Speed (miles per hour)	43	15	43	15	43	15
I-405 Southbound Average Travel Time (minutes)	7	19	7	19	7	19

Source: (Fehr & Peers 2025)

Under Design Year (2050) conditions, Alternative 2 would improve freeway mainline LOS along some segments of I-405 within the Project Study Area (see Table 2.2.7-6). Alternative 2 would also improve LOS and reduce the length of the queue at several study intersections (see Table 2.2.7-10). In Design Year (2050), Alternative 2 would result in a 10 to 11 percent reduction in delay during the PM peak period compared to the No-Build Alternative (see Table 2.2.7-9). Average speed and total travel time would be similar during the AM peak period; however, speeds under Alternative 2 would be 7 percent higher and travel time would be lower during the PM peak period (see Table 2.2.7-11). Therefore, no long-term direct or indirect adverse impacts on roadways would result from operation of the proposed Project under Alternative 2; rather, impacts would be beneficial due to network-wide operational improvements.

Table 2.2.7-11: Projected Design Year (2050) Network Performance

	No-Build Alternative		Alternative 2		Alternative 3	
Performance Measures	**AM Peak Period**	**PM Peak Period**	**AM Peak Period**	**PM Peak Period**	**AM Peak Period**	**PM Peak Period**
Average Delay Per Vehicle (Minutes)	4.9	7.1	4.9	6.4	4.9	7.0
Average Speed (miles per hour)	26	20	26	21	26	20
Total Vehicle Hours of Delay (hours)	8,450	12,861	8,551	11,481	8,481	12,640
Volume Served (vehicles)	99,071	103,045	99,219	102,867	98,993	102,956
I-405 Northbound Average Speed (miles per hour)	18	31	18	31	18	31
I-405 Northbound Average Travel Time (minutes)	15	9	15	9	15	9
I-405 Southbound Average Speed (miles per hour)	28	15	28	15	28	15
I-405 Southbound Average Travel Time (minutes)	10	19	10	19	10	19

Source: (Fehr & Peers 2025)

Bicycle and Pedestrian Facilities

Alternative 2 would include Complete Streets elements and TSM/TDM elements throughout the Project Study Area to improve circulation, mobility, and access for bicycles and pedestrians. These improvements would include upgrading existing sidewalks and crosswalks to be ADA compliant, constructing sidewalks in locations that do not currently have sidewalks, connecting City bikeways that have gaps within State ROW or providing new bikeways along local roadways, improving lighting under bridges for pedestrian and bicycle crossings, restriping existing crosswalks to high visibility crosswalk and eliminating free-right turns where feasible, and supporting future multimodal trail connections. Alternative 2 would not result in changes to bicycle or pedestrian routes or facilities or permanently impede pedestrian or bicycle access to existing services.

Alternative 2 would require partial ROW acquisitions on four parcels and TCEs on six parcels to widen the Dominguez Channel Bridge. The required partial permanent ROW

acquisitions are on parcels not currently open to the community and are vacant parcels identified as industrial or government land. The public cannot currently access these areas; therefore, these acquisitions and TCEs would have no impact on existing pedestrian or bicycle facilities. Therefore, no long-term direct or indirect adverse impacts on bicycle and pedestrian facilities would result from operation of the proposed Project under Alternative 2; rather, impacts would be beneficial due to implementation of the Complete Streets and TSM/TDM improvements.

Parking

Alternative 2 would result in the removal of on-street parking on 213th Street (approximately 0.12 mile on each side of the roadway) due to the addition of bike lanes between Selwyn Avenue and the Dominguez Channel maintenance access road. Therefore, Alternative 2 would result in a permanent impact on parking in that localized area. The impacted parking area would be a small segment of the roadway, and no other parking in the Community Impact RSA would be impacted. Land uses within this area consist of commercial, industrial, public facilities, and open space. The removal of parking would not impact business operations, as parking spaces are generally limited to under the overpass and businesses in the area have their own dedicated parking lots. Therefore, no long-term direct or indirect adverse impacts on parking would result from operation of the proposed Project under Alternative 2.

Public Transit

During operation, Alternative 2 would not result in reduced access to, or the displacement or relocation of, transit stops in the Community Impact RSA. Therefore, no long-term direct or indirect adverse impacts on public transportation would result from operation of the proposed Project under Alternative 2; rather, impacts would be beneficial due to implementation of the Complete Streets and TSM/TDM elements.

<u>Alternative 3 – Transportation System Management/Transportation Demand Management</u>

Alternative 3 would not include the construction of auxiliary lanes along I-405 but would include the same Complete Streets and TSM/TDM elements as Alternative 2 to improve safety and multimodal mobility. Alternative 3 would result in similar network performance to the No Build Alternative because there would be no change to the I-405 mainline and no auxiliary lanes would be added (see Table 2.2.7-10 and Table 2.2.7-11). Alternative 3 would not require ROW for the widening of the Dominguez Channel Bridge and would not impact the planned B-1 bicycle route.

As discussed under Alternative 2, operation of Complete Streets elements and TSM and TDM strategies would result in improved circulation, mobility, and access for bicycles and pedestrians. Similar to Alternative 2, Alternative 3 would require removal of on-street parking spaces on 213th Street but would not result in reduced access to, or the displacement or relocation of, transit stops in the Community Impact RSA. Land uses within this area consist of commercial, industrial, public facilities, and open space.

The removal of parking would not impact business operations, as parking spaces are generally limited to under the overpass and businesses in the area have their own dedicated parking lots. Therefore, no long-term direct or indirect adverse impacts on transportation would result from operation of the proposed Project under Alternative 3.

2.2.7.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are proposed.

2.2.8 Visual/Aesthetic

2.2.8.1 Regulatory Setting

NEPA establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically (emphasis added) and culturally pleasing surroundings (42 USC 4331[b][2]). FHWA, in its implementation of NEPA (23 USC 109[h]), also directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic, and historic environmental qualities" (PRC Section 21001[b]).

California Streets and Highways Code Section 92.3 directs Caltrans to use drought resistant landscaping and recycled water when feasible and incorporate native wildflowers and native and climate-appropriate vegetation into the planting design, when appropriate.

2.2.8.2 Affected Environment

This discussion is based on the proposed Project's Visual Impact Assessment (VIA) Memorandum (HDR Engineering, Inc. [HDR] 2025), which was completed in October 2025 in accordance with the guidance outlined in the *Visual Impact Assessment of Highway Projects* (FHWA 2015).

Project Location and Setting

The Project Study Area is located on I-405 between the Union Pacific Dolores Yard and Figueroa Street interchanges in the City of Carson. The proposed Project is in the Los Angeles Plain ecoregion of Southern California (USEPA 2013). The proposed Project setting is characterized by the I-405 corridor, which currently consists of five travel lanes in each direction along NB and SB I-405. Land uses within and immediately surrounding the Project Study Area consist primarily of single-family and multifamily residential, commercial, recreational, light and heavy industrial, open space, and portions of the Dominguez Channel. Vegetation is primarily ruderal, consisting of weedy, non-native species and ornamental trees.

Area of Visual Effect

The Area of Visual Effect (AVE) is the sum of the viewsheds of all travelers with views from a road and all neighbors with views of a road (Caltrans 2023). The proposed Project's AVE is a 1,663-acre half-mile buffer beyond the Project Study Area (see Figure 2.2.8-1) to capture neighboring views from which the proposed Project modifications could be visible.

Scenic and Visual Resources

I-405 is not a designated state scenic highway or eligible for designation. The AVE also does not contain or have any views of any officially designated National Scenic Byways

I-405 is a classified landscaped freeway from PM 9.6 to PM 10.1. Caltrans defines a classified landscaped freeway as a section of freeway with ornamental vegetation planting that meets the criteria established by the California Code of Regulations, Outdoor Advertising Regulations, Title 4, Division 6. This designation controls and regulates outdoor advertising displays along I-405. This segment of I-405 includes the Dominguez Channel and is accompanied by an irregular formation of palm trees and other ornamental trees and vegetation along SB I-405.

The AVE does not contain any officially designated scenic vistas or scenic resources, including trees, rock outcroppings, and historic buildings, officially designated or recognized by a government agency or non-governmental organization. As described in Section 2.2.9, *Cultural Resources*, and Appendix A, *Section 4(f)*, the Dominguez Channel Historic District intersects the south end of the proposed Project at the Dominguez Channel Bridge. Although the Dominguez Channel would not qualify as a scenic resource, it was identified as a visual resource. Visual resources are noticeable visual elements that exist in the AVE and enhance or contribute to the visual quality and character of a project or its cultural or natural environment without being officially recognized.

Landscape Units and Key Views

The AVE was divided into three landscape units (LU) (see Figure 2.2.8-1) based on common attributes, including land use, development density, roadway cross sections, and viewshed. Within these LUs, five key views (KV) were chosen to document and assess the proposed Project's visual impacts.

LU 1 encompasses the northern portion of the AVE from just north of the proposed temporary signage area to Del Amo Boulevard. LU 1 was chosen to represent the portion of the AVE with the lowest density of land uses. LU 1 includes the following KV:

- KV 5: Main Street Looking North toward the Main Street Undercrossing

LU 2 encompasses the middle portion of the AVE from Del Amo Boulevard to just south of the I-405 and Carson Street intersection. LU 2 was chosen to represent the portion of the AVE with the highest density of land uses and a relatively straight segment of I-405. LU 2 includes the following three KVs:

- KV 2: Carson Street Looking Southwest toward the I-405 NB On-Ramp
- KV 3: 213th Street Looking East toward the 213th Street Undercrossing
- KV 4: SB I-405 Looking South

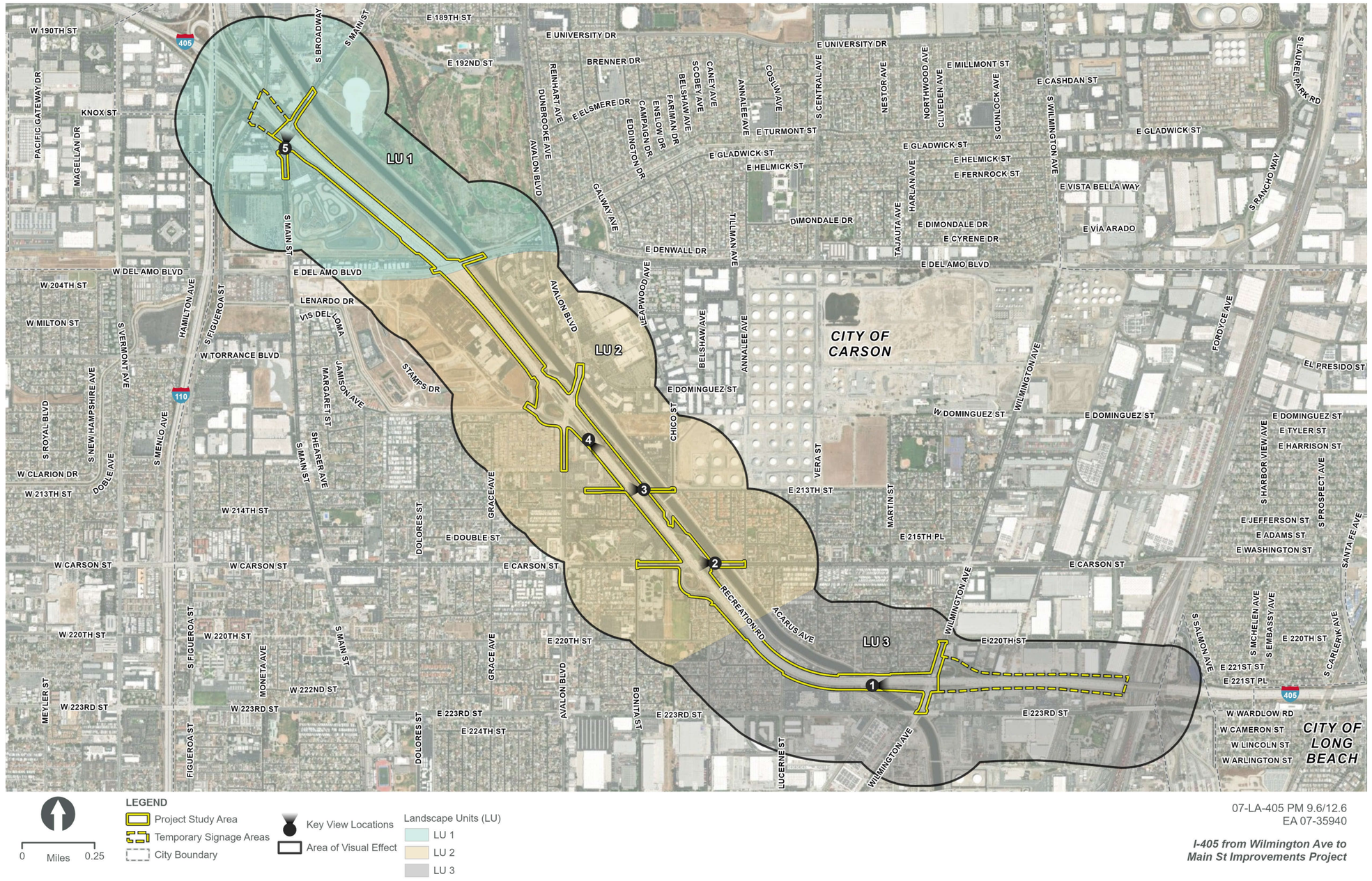

Figure 2.2.8-1: Landscape Units and Key View Locations within the Area of Visual Effect

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LU 3 encompasses the southern portion of the AVE from just south of the I-405 and Carson Street intersection to just south of the proposed temporary signage area. LU 3 was chosen to represent proposed Project changes that would occur on I-405 as the alignment curves east as well as changes associated with the viewshed of the Dominguez Channel for highway travelers along SB I-405. LU 3 includes the following KV:

- KV 1: SB I-405 Bridge over Dominguez Channel Looking Southwest

Visual Character

Visual character is based on the visual properties of the natural, cultural, and existing project environment visual features and the relationships among these features (Caltrans 2023), which includes the following.

- *Natural Environment*: Includes land, water, vegetation, animals, and atmospheric conditions.
- *Cultural Environment*: Includes buildings, infrastructure, other structures, and art or artifacts.
- *Existing Project Environment*: Includes natural and cultural elements within the project boundary; includes ROW grading, constructed elements, highway planting and other vegetation cover, and ancillary visual features.

The existing visual character of the AVE is dominated by transportation facilities and developed environment, as well as open space consisting generally of ruderal vegetation and ornamental trees adjacent to I-405.

The natural environment of the AVE consists of the Dominguez Channel and ruderal and ornamental vegetation. A portion of the Dominguez Channel parallels I-405 to the west within the entirety of the AVE and forms a linear pattern with colors of gray, brown, green, and blue. Water within the concrete channel contrasts with the brown and green low vegetation scrub with the occasional short tree above the water line, in addition to the gray, irregular-shaped rocks connecting to a flat, unpaved path on either side atop of the channel. No vegetation occurs within the freeway median.

The cultural environment of the AVE includes single and multifamily residential, mobile homes and trailer parks, general office, commercial and services, facilities, industrial, transportation, and utilities. This includes the Dominguez Channel and transportation infrastructure such as on- and off-ramps, undercrossings, and overcrossings.

The existing Project environment for the proposed Project includes both the natural and cultural elements within the AVE, including I-405 and related highway infrastructure, utility poles, highway and roadway lighting, highway and roadway signage, intersection infrastructure, the Dominguez Channel, and varying vegetation types. I-405 presents straight lines in north and south directions, with on- and off-ramps in the east and west directions presenting sinuous lines. The highway pavement is gray with standard yellow

and white striping. Local roadways include colored gray pavement and white striping to delineate travel lines and turning movements. The low median separating NB and SB lanes on I-405 is unvegetated with a sandy gray color. Utility poles present vertical lines and contain gray and brown coloring. The utility lines that connect to utility poles create thin horizontal lines and are gray in color. Existing local roadway signage varies in shape and purpose and contains colors of black, white, green, yellow, and red. Highway signage located on NB and SB I-405, as well as within the median, contains colors of green, black, and white, and is constructed of aluminum and/or galvanized steel supported by thick gray cylindrical columns. Existing lighting within the AVE consists of streetlights, underpass and overpass lighting, and highway lighting.

Visual Quality

Visual quality is the viewers' overall aesthetic impression of a view or landscape. Visual quality is evaluated by identifying the vividness, intactness, and unity of natural, cultural, and existing visible Project environments present in the AVE. These criteria are defined as follows:

- *Vividness* is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- *Intactness* is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- *Unity* is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

The visual environment within the AVE has low intactness due to the heavy presence of urban features on the natural landscape. This is attributed to the AVE being largely developed with urban/suburban commercial, residential, and industrial land uses on both sides of I-405. With the exception of intermittent views of the Dominguez Channel, the AVE lacks distinctive or memorable visual features. There is low-medium visual unity as a result of the urban development (roadways, buildings, industrial uses, utility lines, etc.) that detract from landscape features, yet there is some balance present because vegetation is still largely visible. Therefore, the existing visual quality within the AVE is low due to the uniform low vividness throughout most of the area.

Viewer Groups

Viewer groups are people whose views of the landscape may be altered by a project—either because the landscape itself has changed, or their perception of the landscape has changed. Viewer groups are composed of *neighbors* (people with views *to* a project) and *travelers* (people with views *from* a project) whose viewpoints could be affected by a project. Each viewer group has its own particular level of viewer exposure and viewer sensitivity, resulting in distinct visual concerns for each group that help predict viewer responses to visual changes.

For the proposed Project, the following neighbor groups were considered:

- Residents located east and west of I-405
- Employees and customers of surrounding businesses

In addition, the following traveler groups were considered:

- Regular commuters that travel frequently along I-405 and local roads
- Commercial trucks serving the businesses along I-405
- Pedestrians and bicyclists traveling the sidewalks and roadways

2.2.8.3 Environmental Consequences

Visual impact is determined by combining visual change and visual sensitivity, as shown in Figure 2.2.8-2. Visual change is composed of visual compatibility and visual contrast. Visual sensitivity is composed of viewer sensitivity and viewpoint sensitivity. This section analyzes visual change, visual sensitivity, and overall visual impact for each Build Alternative compared to the No-Build Alternative and existing conditions.

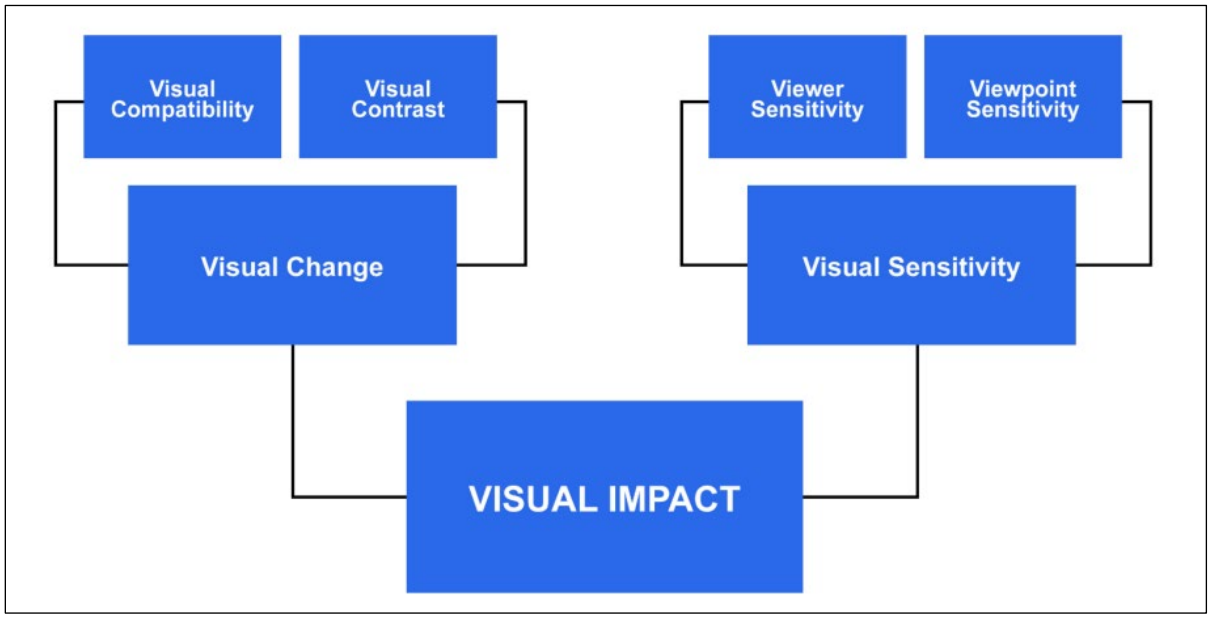

Figure 2.2.8-2: Determination of Visual Impact

Construction Impacts

Alternative 1 – No-Build

Alternative 1 (No-Build) would not result in any of the construction activities associated with the Build Alternatives. Therefore, no short-term direct or indirect visual impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

During construction, Alternative 2 would result in temporary visual impacts within the AVE due to the presence of construction equipment and materials, construction staging areas, temporary roadside barriers, construction and detour signage, and construction activities, such as truck hauling, excavation, and the removal of existing mature landscape. Construction is anticipated to take approximately 24 months for Alternative 2. Therefore, these effects would be temporary and relatively short in duration.

Construction activities would include grading and vegetation removal within the Project Study Area. A landscape plan would be developed during final design (see Project Feature **PF-VIS-1** in Section 1.4, *Project Alternatives*), and it would accommodate all applicable Caltrans and City regulations governing landscaping. Further, Measure **VIS-1** would be implemented and require that the final design avoid removing or negatively affecting visual resources, such as mature trees and shrub groupings, to the extent feasible. Alternative 2 would result in the removal of approximately 114 existing trees within the AVE. However, the proposed Project's Draft Landscape Concept Plan recommends planting 542 trees within the AVE under Alternative 2, which would offset any loss. Therefore, no short-term direct or indirect adverse impacts on visual resources would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

During construction, Alternative 3 would also result in temporary visual impacts within the AVE due to the presence of construction equipment and materials, construction staging areas, temporary roadside barriers, construction and detour signage, and construction activities, such as truck hauling, excavation, and the removal of existing mature landscape. Construction is anticipated to take approximately 15 months for Alternative 3. Therefore, these effects would be temporary and relatively short in duration.

Construction activities would include grading and vegetation removal within the Project Study Area. A landscape plan would be developed during final design (see Project Feature **PF-VIS-1**), and it would accommodate all applicable Caltrans and City regulations governing landscaping. Further, Measure **VIS-1** would be implemented and require that the final design avoid removing or negatively affecting visual resources, such as mature trees and shrub groupings, to the extent feasible. Alternative 3 would result in limited disturbance of the surrounding landscape and vegetation of the existing

condition. Therefore, no short-term direct or indirect adverse impacts on visual resources would occur as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Alternative 1 would not result in any permanent improvements. Therefore, no long-term direct or indirect visual impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Key View 1: SB I-405 Bridge over Dominguez Channel Looking Southwest (Alternative 2)

KV 1 within LU 3 includes an existing view of the Dominguez Channel from the perspective of a traveler moving southwest on SB I-405 toward the Wilmington Avenue off-ramp (Figure 2.2.8-3). This KV was chosen for its unique view of the Dominguez Channel from I-405 because this is one of the only locations within the AVE where the channel can be viewed from I-405. The view to the channel is surrounded by developed environment, including utility poles, commercial signage, commercial development, and I-405.

Visual Change

The viewshed of the Dominguez Channel, a visual resource within the AVE, would be altered slightly. As shown in Figure 2.2.8-4, visual changes within KV 1 include the addition of an auxiliary lane along SB I-405 terminating at the Wilmington Avenue SB off-ramp. This would require widening the I-405 bridge over the Dominguez Channel, slightly narrowing the visibility of the Dominguez Channel for a highway traveler. The bridge railing would be updated. However, the visual contrast of Alternative 2 with the natural, cultural, and existing Project environments from KV 1 would be similar to existing conditions. The addition of the transportation elements associated with the addition of an auxiliary lane would increase unity of the Project environment within this KV with smooth, gray roadway; however, it would also detract from the natural environment of the Dominguez Channel within the view.

The overall viewer sensitivity to Alternative 2 in the natural, cultural, and existing Project environments from this visual change would be moderate. Although the view of the Dominguez Channel would be altered, highway travelers typically have a lower viewer sensitivity, given their higher travel speed. Travelers along I-405 at this location would experience less visual exposure to the Dominguez Channel as a result of the widening of the I-405 bridge over the channel.

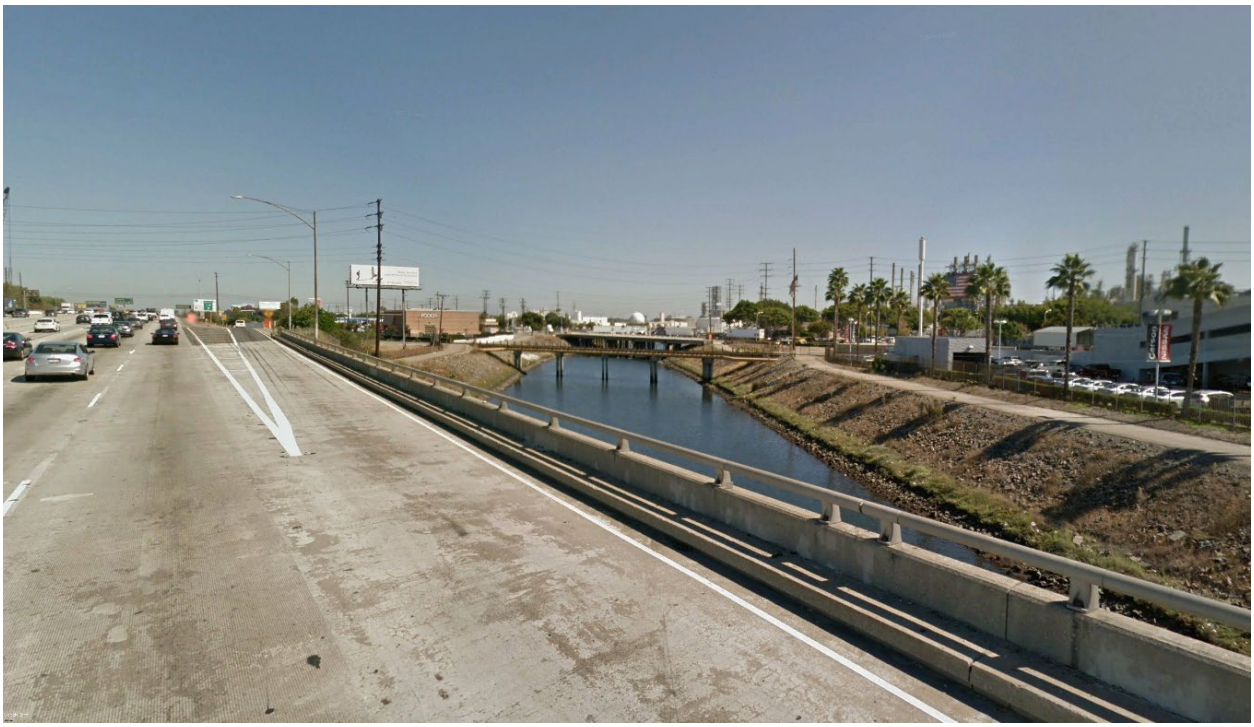

Figure 2.2.8-3: Key View 1 (Existing Conditions)

Figure 2.2.8-4: Kev View 1 Proposed Condition (Alternative 2)

Visual Sensitivity

The viewpoint sensitivity to Alternative 2 in the natural, cultural, and existing Project environments from KV 1 would be moderate. The Dominguez Channel as a visual resource for the purposes of this VIA raises viewpoint sensitivity; however, its visual quality and non-official level of designation as a local scenic resource lessens the overall visual sensitivity. Therefore, the overall visual sensitivity in the natural, cultural, and existing Project environments created by Alternative 2 as seen from this KV would be moderate.

Visual Impact

Based on the visual change and visual sensitivity, the overall visual impact of Alternative 2 on the natural, cultural, and existing Project environments as seen from this KV would be low beneficial.

Key View 2: Carson Street Looking Southwest toward the I-405 NB On-Ramp (Alternatives 2 and 3)

KV 2 within LU 2 includes an existing view of the Dominguez Channel from the perspective of road travelers moving southwest along Carson Street toward the I-405 NB on-ramp and the Carson Street Undercrossing (Figure 2.2.8-5). The concrete barriers and metal fence are existing visual obstructions to the Dominguez Channel within KV 2. This key view was chosen to assess how the Build Alternatives would affect this view of the Dominguez Channel for road travelers along Carson Street and toward the NB I-405 on-ramp.

Visual Change

The visual compatibility of Alternative 2 with the natural, cultural, and existing Project environments from KV 2 would have no effect. The Dominguez Channel is considered a visual resource within KV 2, and its viewshed would remain unchanged under Alternative 2. As shown in Figure 2.2.8-6, visual changes within KV 2 under Alternative 2 would include the addition of an auxiliary lane starting at the Carson Street NB on-ramp, although not widely visible, which would require widening of pavement and realignment of the on-ramp. These changes would be implemented consistent with the visual character of the KV, and intactness would remain.

The visual contrast of Alternative 2 with the natural, cultural, and existing Project environments from KV 2 would be slightly beneficial. Visual changes under Alternative 2 would result in a greater presence of transportation infrastructure, including more smooth, gray roadway, promoting unity of a typical transportation system. Alternative 2 would also include implementation of Complete Streets elements at the I-405 and Carson Street intersection, including enhanced pedestrian and bicycle facilities that would result in increased vividness from defined roadway markings for local road travelers. Therefore, the overall visual change in the natural, cultural, and existing Project environments created by Alternative 2 as seen from this KV would be slightly beneficial.

Figure 2.2.8-5: Key View 2 (Existing Conditions)

Figure 2.2.8-6: Key View 2 Proposed Condition (Alternatives 2 and 3)

Visual Sensitivity

The overall viewer sensitivity to Alternative 2 in the natural, cultural, and existing Project environments from KV 2 would be low. Local road travelers typically drive at slower speeds compared to highway travelers and would therefore be more susceptible to noticing visual change. However, because no large structures would be introduced into this KV, visual sensitivity under Alternative 2 would not be heightened for highway neighbors and local road travelers as a result of the proposed Project.

The viewpoint sensitivity to Alternative 2 in the natural, cultural, and existing Project environments from KV 4 would be none because there are no prominent visual resources within this KV. Therefore, the overall visual sensitivity in the natural, cultural, and existing Project environments created by Alternative 2 as seen from this KV would be low.

Visual Impact

Based on the visual change and visual sensitivity, the overall visual impact of Alternative 2 on the natural, cultural, and existing Project environments as seen from this KV would be low beneficial.

Key View 3: 213th Street Looking East toward the 213th Street Undercrossing (Alternatives 2 and 3)

KV 3 within LU 2 includes an existing view of the 213th Street Undercrossing from the perspective of a road traveler moving east on 213th Street toward the 213th Street Undercrossing under I-405 (Figure 2.2.8-7). This KV was chosen to assess how proposed Project modifications, specifically Complete Streets elements (Alternatives 2 and 3) and the widening of the I-405 bridge over 213th Street (Alternative 2), would affect this view for local road travelers along 213th Street toward the undercrossing.

Visual Change

As shown in Figure 2.2.8-8, complete Streets elements at this location could include upgraded sidewalks and a designated Class II bicycle lane in each travel direction and would enhance the visual character of the KV and increase intactness of the roadway view. The visual contrast of Alternative 2 with the natural, cultural, and existing Project environments from KV 3 would be slightly beneficial. Increased vividness would occur from the bright green color of the proposed Class II bike lane as well as increased visual unity from the addition of elements that make up a typical transportation corridor. On-street parking would also be eliminated along this portion of 213th Street to accommodate implementation of the proposed bicycle lanes, which can contribute to the unity of the view with a balance of pedestrian, bicyclist, and vehicle infrastructure. A highway landscape plan that accommodates all applicable Caltrans and City regulations governing landscaping would be prepared during final design (Project Feature **PF-VIS-1**). Therefore, the overall visual change in the natural, cultural, and existing Project environments created by Alternative 2 as seen from this KV would be slightly beneficial.

Figure 2.2.8-7: Key View 3 (Existing Conditions)

Figure 2.2.8-8: Key View 3 Proposed Condition (Alternatives 2 and 3)

Visual Sensitivity

The overall visual sensitivity to Alternative 2 in the natural, cultural, and existing Project environments from KV 3 would be low. Local road travelers typically drive at slower speeds compared to highway travelers and would therefore be more susceptible to noticing visual change. However, because no large structures would be introduced into this KV, visual sensitivity under Alternative 2 would not be heightened for travelers along 213th Street as a result of the proposed Project. Viewer sensitivity for pedestrians and cyclists traveling within KV 3 would be greater than vehicles because their travel speed is typically lower compared to vehicles, and they would likely experience sensitivity to the bright green color of the proposed bicycle lanes.

The viewpoint sensitivity to the Alternative 2 in the natural, cultural, and existing Project environments from KV 3 would be none because there are no prominent visual resources within this KV.

Visual Impact

Based on the visual change and visual sensitivity, the overall visual impact of Alternative 2 on the natural, cultural, and existing Project environments as seen from KV 3 would be low beneficial.

Key View 4: SB I-405 Looking South (Alternative 2)

KV 4 within LU 2 includes an existing view of I-405 and surrounding vegetation from the perspective of a highway traveler moving along SB I-405 parallel to the Avalon Boulevard on-ramp (Figure 2.2.8-9). This viewpoint was chosen to assess how proposed Project modifications under Alternative 2 would affect this view for typical highway travelers on I-405.

Visual Change

The visual compatibility of Alternative 2 with the natural, cultural, and existing Project environments from KV 4 would be slightly beneficial. As shown in Figure 2.2.8-10, visual changes within KV 4 under Alternative 2 would include the addition of an auxiliary lane along SB I-405 starting at the Avalon Boulevard SB on-ramp, which would require widening of pavement, realignment of the on-ramp, and addition of a short metal railing. Overhead signage would also be added to this KV. These changes would slightly enhance the intactness of the corridor with the implementation of typical transportation corridor elements. Additionally, Figure 2.2.8-10 shows a slight visual change of vegetation along the Avalon Boulevard SB on-ramp as a result of the proposed road widening and introduction of the guardrail. A highway landscape plan would be prepared during final design (Project Feature **PF-VIS-1**). In addition, Measure **VIS-2** would require preparation of a hardscape plan to implement attractive medians and other aesthetic treatment, consistent with the applicable goals and policies in the City's General Plan, as well as Caltrans standards.

Figure 2.2.8-9: Key View 4 (Existing Conditions)

Figure 2.2.8-10: Key View 4 Proposed Condition (Alternative 2)

The visual contrast of Alternative 2 with the natural, cultural, and existing Project environments from KV 4 would be slightly beneficial. The proposed changes described above would introduce a higher presence of transportation elements into the KV as well as slightly enhanced vegetation, which would increase unity and vividness as a result of improved smooth, gray pavement and elements that are typical of a transportation corridor. Therefore, the overall visual change in the existing natural, cultural, and existing Project environments created by Alternative 2 as seen from this KV would be slightly beneficial.

Visual Sensitivity

The overall viewer sensitivity in the natural, cultural, and existing Project environments created by Alternative 2 as seen from this KV would be low. Highway travelers along I-405 at KV 4 would be sensitive to the increased presence of transportation elements, such as highway signage; however, their sensitivity is generally lower, given their higher travel speed and improved traffic flow as a result of proposed Project improvements under Alternative 2.

The viewpoint sensitivity to Alternative 2 in the natural, cultural, and existing Project environments from KV 4 would be none because there are no prominent visual resources within this KV.

Visual Impact

Based on the visual change and visual sensitivity, the overall visual impact of Alternative 2 on the natural, cultural, and existing Project environments as seen from this KV would be low beneficial.

Key View 5: Main Street Looking North toward the Main Street Undercrossing (Alternatives 2 and 3)

KV 5 within LU 1 includes an existing view of the Main Street Undercrossing, including the Main Street on- and off-ramps, from the perspective of a local road traveler moving north on Main Street toward the Main Street Undercrossing under I-405 (Figure 2.2.8-11). This viewpoint was chosen as a representative view for the AVE to assess how the proposed Build Alternatives would affect this view for local road travelers and pedestrians and bicyclists traveling along Main Street toward the undercrossing.

Visual Change

The visual compatibility of Alternative 2 with the natural, cultural, and existing Project environments from KV 5 would be slightly beneficial. As shown in Figure 2.2.8-12, visual changes within KV 5 would include the addition of Complete Streets elements at the I-405 and Main Street intersection, including upgraded sidewalks to be Americans with Disabilities Act (ADA) compliant, a designated Class II bicycle lane in each travel direction, improved lighting under bridges for pedestrians and bicyclists, and high-visibility crosswalks. These changes would enhance intactness of the KV by balancing infrastructure for pedestrians, bicyclists, and vehicles while also enhancing visual

Figure 2.2.8-11: Key View 5 (Existing Conditions)

Figure 2.2.8-12: Key View 5 Proposed Condition (Alternatives 2 and 3)

character of the KV with aesthetic treatments. In addition, overhead utilities along WB Main Street would be relocated underground to accommodate the proposed bicycle lane.

The visual contrast of Alternative 2 with the natural, cultural, and existing Project environments from KV 5 would be slightly beneficial. The visual changes described above would result in increased visual unity of an enhanced pedestrian and transportation corridor with the addition of bright green colors and distinct roadway markings. A highway landscape plan that accommodates all applicable Caltrans and City regulations governing landscaping would be prepared during final design (Project Feature **PF-VIS-1**). In addition, Measure **VIS-2** would require preparation of a hardscape plan to implement attractive medians and other aesthetic treatment, consistent with the applicable goals and policies in the City's General Plan, as well as Caltrans standards. Measure **VIS-1** would also be implemented, which would verify that the design would avoid removing or negatively affecting visual resources, such as mature trees and shrub groupings, to the extent feasible. Therefore, the overall visual change in the natural, cultural, and existing Project environments created by Alternative 2 as seen from this KV would be slightly beneficial.

Visual Sensitivity

The overall viewer sensitivity to Alternative 2 in the natural, cultural, and existing Project environments from KV 5 would be low. Local road travelers typically drive at slower speeds compared to highway travelers and would therefore be more susceptible to noticing visual change than highway travelers. However, the lower scale of visual changes at this KV would not heighten their sensitivity. Visual sensitivity for pedestrians and cyclists traveling within KV 5 would be greater because their travel speed is typically lower compared to vehicles, and they would be susceptible to the proposed bright green color of the pedestrian and bicycle lanes.

The viewpoint sensitivity to Alternative 2 in the natural, cultural, and existing Project environments from KV 5 would be none because there are no prominent visual resources within this KV.

Visual Impact

Based on the visual change and visual sensitivity, the overall visual impact of Alternative 2 on the natural, cultural, and existing Project environments as seen from this KV would be low beneficial.

Overall Visual Impact

Alternative 2 would not introduce new structures into the existing viewshed or substantially change the scale or form of the AVE's existing visual character. Alternative 2 would add Complete Steets elements, such as bicycle lanes, improved sidewalks, and lighting under bridges for pedestrians and bicyclists, which would contribute to a more vivid and visually unified transportation system.

Contextual elements, such as textured noise barriers, colored concrete or asphalt, highway plantings, etc., help generate public acceptance of the proposed Project, reflect the unique character of the community, and provide compatibility with the existing visual resources. At this time, no context sensitive solutions are currently proposed. Context sensitive solutions would be considered and developed during final design in coordination with the City and Caltrans District Landscape Architect.

A highway landscape plan would be prepared during final design (see Section 1.4, *Project Alternatives* for Project Feature **PF-VIS-1**). Alternative 2 would result in the removal of approximately 114 existing trees within the AVE. However, the proposed Project's Draft Landscape Concept Plan recommends planting 542 trees within the AVE under Alternative 2, which would offset any loss. Further, Measure **VIS-1** would be implemented and require that the final design avoid removing or negatively affecting visual resources, such as mature trees and shrub groupings, to the extent feasible..

Measure **VIS-2** would be implemented and require a hardscape plan also be prepared during final design, which would identify attractive bridge, tunnel, median, retaining wall, sound barrier, and other aesthetic treatments. Measure **VIS-3** would also be implemented and require the preparation of a lighting plan to ensure lighting fixtures that would minimize glare on adjacent properties and into the night sky are selected and installed.

The proposed modifications to I-405 and Complete Streets elements were determined to result in a low beneficial visual impact at KVs 1 through 5. Although the I-405 bridges would be widened under Alternative 2 at Carson Street, 213th Street, and over the Dominguez Channel, existing visual quality and visual resources would be altered minimally. The widening of the I-405 bridge over the Dominguez Channel would partially obstruct the view to the Dominguez Channel for highway travelers. This constitutes a visual change; however, visual sensitivity for highway travelers at this location would be low given the driving speeds along I-405 resulting in limited viewing time of the visual resource. This would result in a low beneficial visual impact because visual changes to the Dominguez Channel would allow the waterway to continue to be partially visible and visual sensitivity is low for highway travelers. Complete Streets improvements, such as ADA-compliant sidewalks, designated Class II bicycle lanes, improved lighting under bridges for pedestrians and bicyclists, high-visibility crosswalks, and slight aesthetic modifications to I-405 would contribute positively to the overall visual character and quality of the AVE. Therefore, no long-term direct or indirect adverse impacts on visual resources would occur as a result of the proposed Project under Alternative 2.

<u>Alternative 3 – Transportation System Management/Transportation Demand Management</u>

Key View 1: SB I-405 Bridge over Dominguez Channel Looking Southwest (Alternative 2)

Alternative 3 does not include any permanent improvements that would be visible from KV 1. Therefore, no permanent changes to the existing setting would occur within KV 1, and no visual impact would occur under Alternative 3.

Key View 2: Carson Street Looking Southwest toward the I-405 NB On-Ramp (Alternatives 2 and 3)

Visual Change

The overall visual change in the natural, cultural, and existing Project environments for KV 2 would be similar to Alternative 2.

The visual compatibility of Alternative 3 with the natural, cultural, and existing Project environments from KV 2 would have no effect. As discussed above under Alternative 2, the Dominguez Channel is considered a visual resource within KV 2, and its viewshed would remain unchanged under Alternative 3.

Visual Sensitivity

The overall viewer sensitivity and viewpoint sensitivity to Alternative 3 in the natural, cultural, and existing Project environments from KV 2 would be similar to Alternative 2.

Visual Impact

The overall visual impact of Alternative 3 on the natural, cultural, and existing Project environments as seen from this KV would be similar to Alternative 2.

Key View 3: 213th Street Looking East toward the 213th Street Undercrossing (Alternatives 2 and 3)

Visual Change

The overall visual change in the natural, cultural, and existing Project environments for KV 2 would be similar to Alternative 2.

Visual Sensitivity

The overall viewer sensitivity and viewpoint sensitivity to Alternative 3 in the natural, cultural, and existing Project environments from KV 2 would be similar to Alternative 2.

Visual Impact

The overall visual impact of Alternative 3 on the natural, cultural, and existing Project environments as seen from this KV would be similar to Alternative 2.

Key View 4: SB I-405 Looking South (Alternative 2)

Alternative 3 does not include any permanent improvements that would be visible from KV 4. Therefore, no permanent changes to the existing setting would occur within KV 4, and no visual impact would occur under Alternative 3.

Key View 5: Main Street Looking North toward the Main Street Undercrossing (Alternatives 2 and 3)

Visual Change

The overall visual change in the natural, cultural, and existing Project environments for KV 2 would be similar to Alternative 2.

Visual Sensitivity

The overall viewer sensitivity and viewpoint sensitivity to Alternative 3 in the natural, cultural, and existing Project environments from KV 2 would be similar to Alternative 2.

Visual Impact

The overall visual impact of Alternative 3 on the natural, cultural, and existing Project environments as seen from this KV would be similar to Alternative 2.

Overall Visual Impact

Complete Streets elements would contribute positively to the overall visual character and quality of KVs 2, 3, and 5 and were determined to result in a low beneficial visual impact at these KV locations. Therefore, the proposed Project would not result in adverse direct or indirect adverse impacts under Alternative 3. Alternative 3 does not include any permanent improvements that would be visible from KV 1 and KV 4. Therefore, no permanent changes to the existing setting would occur within KV 1 and KV 4, and no visual impacts would occur at these locations under Alternative 3.

Under Alternative 3, a highway landscape plan would be prepared during final design (Project Feature **PF-VIS-1**). Alternative 3 would result in the removal of approximately 20 existing trees within the AVE. Further, Measure **VIS-1** would be implemented and require that the final design avoid removing or negatively affecting visual resources, such as mature trees and shrub groupings, to the extent feasible Measure **VIS-2** would be implemented and require a hardscape plan also be prepared during final design, which would identify attractive bridge, tunnel, median and other aesthetic treatments. Measure **VIS-3** would also be implemented and require the preparation of a lighting plan to ensure lighting fixtures that would minimize glare on adjacent properties and into the night sky are selected and installed. Therefore, no long-term direct or indirect adverse impacts on visual resources would occur as a result of the proposed Project under Alternative 3.

2.2.8.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are proposed:

Measure VIS-1 **Tree Removal.** During preparation of the plans, specifications, and estimate (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer or designated

contractor will ensure that the design avoids removing or negatively affecting visual resources, such as mature trees and shrub groupings, to the extent feasible. If removal of mature trees cannot be avoided, additional landscape improvements will be incorporated into the final design for these areas.

Measure VIS-2 **Hardscape Plan.** During the plans, specifications, and estimate (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer or designated contractor will ensure that a plan to implement attractive bridge, tunnel, medians, retaining walls, sound barriers, and other aesthetic hardscapes be prepared. This plan will be prepared consistent with the applicable goals and policies in the City of Carson's General Plan. All designs are required to comply with Caltrans' standards for safety requirements and other pertinent standards. Special architectural details and aesthetic treatments that promote regional identity, in terms of material, color, texture, and pattern, are encouraged to be incorporated into the proposed Project and will be reviewed and approved by the Caltrans District 7 Landscape Architect. The following avoidance and minimization measures from Caltrans VIA Handbook (2023) would be considered in the plan:

- Use aesthetic treatments, such as adding a design motif to a sound wall.
- Use materials, forms, and finishes that mimic, complement, or contrast with the existing cultural environment that is visible from the Project corridor, as desired by the community.

Measure VIS-3 **Lighting Plan.** During the plans, specifications, and estimate (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer or designated contractor will verify that a plan to ensure that energy-conserving light-emitting diode (LED) lighting fixtures be selected and installed to minimize glare on adjacent properties and into the night sky be prepared. Lighting will be shielded with nonglare hoods and focused within Caltrans right-of-way (ROW). The lighting plan will be reviewed and approved by the Caltrans District 7 Landscape Architect prior to construction to ensure compliance with these criteria.

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2.2.9 Cultural Resources

2.2.9.1 Regulatory Setting

The term “cultural resources,” as used in this document, refers to the “built environment” (e.g., structures, bridges, railroads, water conveyance systems, etc.), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal law, cultural resources that meet certain criteria of significance are referred to as “historic properties,” and “traditional cultural properties.” Under state laws cultural resources that meet certain criteria of significance are referred to as “historical resources,” and “tribal cultural resources.” Laws and regulations dealing with cultural resources are described below.

National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties that are included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 CFR 800). Caltrans has entered into a *Programmatic Agreement Among the Federal Highway Administration*; *the Advisory Council On Historic Preservation; the California State Historic Preservation Officer; the United States Army Corps of Engineers’ Sacramento District, San Franciso District, and Los Angeles District; and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as It Pertains to the Administration of the Federal-Aid Highway Program in California* (Section 106 PA) (effective December 6, 2024), which streamlines and delegates certain responsibilities for Section 106 compliance to Caltrans for projects with FHWA involvement. FHWA’s responsibilities under the Section 106 PA have been further delegated to Caltrans under the NEPA Assignment Program.

California Environmental Quality Act

CEQA requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as “unique” archaeological resources. PRC Section 5024.1 established the California Register of Historical Resources (CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. In 2014, AB 52 added the term “tribal cultural resources” to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources. Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource.

Public Resources Code 5024

PRC Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires Caltrans to inventory state-owned structures in its ROW. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. Caltrans has entered into a *Memorandum of Understanding Between the California Department of Transportation and the California State Historic Preservation Officer Regarding Compliance with Public Resources Code Section 5024 and Governor's Executive Order W-26-92* (5024 MOU) (effective December 6, 2024) which streamlines and delegates certain responsibilities for PRC Code 5024 compliance to Caltrans for projects involving state-owned resources.

2.2.9.2 Affected Environment

This section is based on information from the cultural resources studies prepared for the proposed Project, which include the *Historic Property Survey Report* (HPSR) (Duke CRM 2025), which was completed in April 2025; *Archaeological Survey Report* (ASR) (Duke CRM, 2025), which was completed in April 2025; and *Finding of No Adverse Effect without Standard Conditions* (FNAE) (GPA Consulting 2025), which was completed in April 2025. SHPO concurred with the FNAE on December 3, 2025. All cultural resource studies were carried out in a manner consistent with Caltrans' regulatory responsibilities under Section 106 of the NHPA and pursuant to the Caltrans Section 106 PA, as well as under PRC 5024 and pursuant to the Caltrans 5024 MOU.

Methodology

The methods used to support the cultural studies included consultation with Native American tribes and other potentially interested parties, a field survey of the study area for cultural resources, which is the Area of Potential Effects (APE), and a records search and literature review.

Area of Potential Effects

The APE was established in consultation with Caltrans Professionally Qualified Staff (PQS) and Caltrans Project Manager on October 9, 2024. The APE includes the area of direct impact (ADI), where physical changes from the proposed Project may occur, plus additional areas where cultural resources may be subject to indirect effects. The horizontal extent of the APE is approximately 494.92 acres, of which approximately 171.65 acres is the ADI. The vertical extent of the APE is approximately 105 feet, ranging from the height of the tallest proposed feature (overhead signs, approximately 35 feet above ground surface) to the maximum depth of anticipated ground disturbance (pile structures, approximately 70 feet below ground surface [bgs]). Aside from the pile structures, ground disturbance within the ADI is also anticipated for pavement

(approximately 3 feet bgs), retaining walls (approximately 7.25 feet bgs), tie-back-walls (approximately 15 feet bgs), and overhead signs (approximately 70 feet bgs).

Consultation

Consultation with Native American tribes under Section 106 and AB 52 was initiated on August 26, 2024. Consultation letters were mailed to 18 individuals representing nine tribes identified by the Native American Heritage Commission (NAHC) as having a potential interest in the APE. Representatives from the following tribes requested formal consultation, including ground disturbance monitoring: Gabrieleño Band of Mission Indians – Kizh Nation, Gabrielino Tongva Indians of California Tribal Council, and Gabrieleño/Tongva San Gabriel Band of Mission Indians. Representatives from the following tribes deferred their comments to other, more local tribes: Santa Rosa Band of Cahuilla Indians and Soboba Band of Luiseño Indians. Coordination with the three Native American tribes that requested consulting party status is ongoing.

Consultation with potentially interested parties under Section 106 was initiated on August 20, 2024. Consultation letters were mailed to five representatives of local government offices and local history organizations who may have a potential interest in or knowledge of cultural resources in the APE. Representatives from the following organizations responded that they did not have any information or concerns about cultural resources in the Project area: Los Angeles County Department of Regional Planning and Los Angeles Conservancy.

Field Survey

A field survey conducted on February 4, 2025, included a reconnaissance-level survey of I-405 and an intensive-level survey of adjacent areas. The reconnaissance survey was conducted primarily in a vehicle travelling along I-405, with a pedestrian survey of those areas that were safely accessible on foot. Visibility of soils in the ADI was less than 5 percent, because the ADI is almost entirely covered by I-405 hardscape. The small amount of exposed soil was disturbed due to commercial and industrial development. This portion of I-405 is characterized as a raised base roughly 15 feet above the surrounding lands that were occupied by the Dominguez Slough. The surrounding areas are developed with commercial and industrial buildings with landscaping using non-native plants and trees and buried irrigation systems. The open space that remains is associated with the land between I-405 and the Dominguez Channel. No prehistoric or historic-era cultural resources requiring evaluation were discovered during the pedestrian survey.

Records Search

The records search included the NAHC Sacred Lands File (SLF), the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS), and Caltrans Historic Bridge Inventory. The SLF had no information for sites within the APE. The SCCIC identified 10 prior cultural resource studies conducted within the APE plus 1-mile search radius, including 4 that studied portions of

the ADI. The SCCIC also identified 16 previously recorded cultural resources within the APE plus 1-mile search radius, including two cultural resources intersecting the ADI (CA-LAN-88/P-19-000088 and Dominguez Channel Historic District). The Caltrans Historic Bridge Inventory indicated there are 10 bridges within the ADI; all were previously determined by Caltrans to be not eligible for the NRHP.

Cultural Resources Identified

CA-LAN-88/P-19-000088 was recorded as a prehistoric archaeological site in 1939 by F.H. Racer. The draining of the Dominguez Slough, incorporation of the area into agricultural use, the construction of the Dominguez Channel and I-405, and the development of the commercial property at the recorded site location have likely destroyed the resource. No trace of the resource was observed during the field survey.

The Dominguez Channel Historic District was determined eligible for listing in the NRHP by Caltrans with consensus by the SHPO in 2019. It is eligible under NRHP Criteria A and C at the local level of significance, with a period of significance from 1945 to 1969. As a result of this determination of eligibility for NRHP listing, it is automatically included in the CRHR. A cultural resource determined eligible for listing in the NRHP or CRHR is considered to have the same status as a listed resource for the purposes of the proposed Project or undertaking. The district is not under Caltrans or other State agency jurisdiction; therefore, it is not a State-owned historical resource for the purpose of PRC 5024. It is a historic property for the purpose of Section 106 and NEPA, and a historical resource for the purpose of CEQA. It is also a historic site for the purpose of Section 4(f).

2.2.9.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, no construction activities would occur and cultural resources would not be impacted. Therefore, no short-term direct or indirect impacts related to cultural resources would occur as a result of the proposed Project under Alternative 1.

Alternative 2 – Auxiliary Lanes and Complete Streets

Built-Environment Cultural Resources

Within the Project APE, there is one built-environment cultural resource, the Dominguez Channel Historic District, that was previously determined eligible for the NRHP and is therefore considered to be a historic property. The Dominguez Channel Historic District intersects the south end of the APE where I-405 traverses the channel via the Dominguez Channel Bridge (Bridge # 53-1166). The concrete channel begins in the city of Hawthorne and continues south in an irregular formation through the cities of Inglewood, Gardena, unincorporated Los Angeles County, Torrance, Los Angeles, Carson, and Wilmington. The first segment of the channel was completed in 1949 and

the final segment was completed in 1967. It ranges from 60 to 175 feet wide and 10 to 20 feet deep. The channel has a rectangular cross-section for much of its alignment, but the lower reach (which includes the portion within the APE) is wider with a trapezoidal shape, rip-rap sides, and compacted clay bottom. The portion of the Dominguez Channel in the APE retains integrity of location, design, materials, workmanship, feeling, and association. Character defining features of the channel that are present within the APE include the alignment and fall (drainage profile) of the channel route; angled, reinforce concrete, rip-rap finished channel walls with deeper compacted clay bottom; and presence of access roads on either side of the channel.

Alternative 2 would require widening of pavement, realignment of on- and off-ramps, construction of retaining walls and noise barriers, and widening of the Dominguez Channel Bridge (Bridge # 53-1166). The width of the existing bridge would increase from approximately 160 feet to approximately 180.5 feet, adding approximately 6 feet to the north (upstream) side and up to approximately 14.5 feet to the south (downstream) side. Approximately 24 new piers would be added within the channel to support the bridge widening, or approximately 12 new piers on each side of the bridge. Cast-in-drilled-hole (CIDH) pile foundations for each of the new piers would require excavation of up to 70 feet below the channel. Abutments with approximately four pile foundations (two on the northbound [NB] side and two on the southbound [SB] side) with CIDH piles would be constructed at the top of the channel slopes. A partial permanent acquisition of approximately 15 feet of the channel ROW on either side of the bridge would be required to allow for maintenance of the widened bridge structure. Additionally, a TCE of approximately 32 to 43 feet on either side of the bridge would be needed to construct the widening.

Caltrans applied the Criteria of Adverse Effect to the historic property within the APE per 36 CFR 800.5(a). Caltrans reviewed the proposed plans and concluded that none of the undertaking's anticipated effects under Alternative 2 meet the criteria of adverse effect described in 36 CFR 800.5(a)(1). Further, the undertaking as proposed is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties described in 36 CFR Part 68, and no modifications or conditions are necessary. Therefore, the proposed undertaking will not cause an adverse effect to the historic property within the APE and the finding for the undertaking as a whole is a FNAE pursuant to 36 CFR 800.5(b).

Based on the discussion above, no short-term direct or indirect adverse impacts on built-environment cultural resources would occur as a result of the proposed Project under Alternative 2.

Archaeological Cultural Resources

The ASR prepared for the proposed Project concluded that the one previously recorded prehistoric archaeological resource within the APE (CA-LAN-88/P-19-000088) has in all likelihood been destroyed as a result of previous construction of the Dominguez Channel and I-405, and the archaeological sensitivity and potential for impacts is very low. No additional archaeological resources were identified as a result of research or

field survey. Furthermore, the presence of extensive fill underlying I-405 and the previous degree of disturbance before and during construction of I-405 make it highly unlikely that previously unidentified cultural resources will be encountered as a result of the proposed Project implementation.

See Section 1.4, *Project Alternatives*, for a description of Project Features that would be implemented during construction to ensure that if archaeological resources are discovered within or near construction limits they are not disturbed and specific protocols would be implemented (Project Feature **PF-CUL-1**), and if human remains are discovered further disturbances and activities will stop in any area or nearby areas suspected to overlie remains and the County Coroner would be contacted (Project Feature **PF-CUL-2**). The following procedures would be followed in the event archaeological resources or human remains are encountered:

If archaeological resources are discovered within or near construction limits, do not disturb the resources and immediately:

1. Stop all work within a 60-foot radius of the discovery
2. Secure the area
3. Notify the Engineer

Caltrans investigates the discovery. Do not move archaeological resources or take them from the job site. Do not resume work within the radius of discovery until authorized.

If ordered, furnish resources to assist in the investigation or recovery of archaeological resources. This work is change order work.

If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the Native American Heritage Commission, who, pursuant to PRC Section 5097.98, will then notify the most likely descendent. At this time, the person who discovered the remains will contact the Caltrans District 7 Environmental Branch Chief so that they may work with the most likely descendent on the respectful treatment and disposition of the remains. Further provisions of PRC Section 5097.98 are to be followed as applicable.

Therefore, with the incorporation of Project Features **PF-CUL-1** and **PF-CUL-2**, no short-term direct or indirect adverse impacts on archaeological cultural resources would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Built-Environment Cultural Resources

Under Alternative 3, no construction activities involving changes to the Dominguez Channel Historic District or its immediate setting would occur. Therefore, no short-term direct or indirect adverse impacts on built-environment cultural resources would occur as a result of the proposed Project under Alternative 3.

Archaeological Cultural Resources

Similar to Alternative 2, construction of Alternative 3 would also involve ground disturbance within the APE. As explained above in the discussion of construction impacts for Alternative 2, the APE has very low archaeological sensitivity and potential for impacts to archaeological resources. Alternative 3 also includes Project Features **PF-CUL-1** and **PF-CUL-2**, which specify the procedures to be followed in the event archaeological resources or human remains are encountered during construction. Therefore, with the incorporation of Project Features **PF-CUL-1** and **PF-CUL-2**, no short-term direct or indirect adverse impacts on archaeological cultural resources would occur as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, no construction would occur as I-405 would not be improved, and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no long-term direct or indirect impacts on cultural resources would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Built-Environment Cultural Resources

As explained above in the discussion of construction impacts for Alternative 2, permanent improvements would be made within and adjacent to the Dominguez Channel Historic District, which is a historic property. These permanent improvements include widened pavement, realigned on- and off-ramps, new retaining walls and noise barriers, and widened Dominguez Channel Bridge (Bridge # 53-1166). A partial permanent acquisition of approximately 15 feet of the channel ROW on either side of the bridge would be required to allow for maintenance of the widened bridge structure.

Caltrans applied the Criteria of Adverse Effect to the historic property within the APE per 36 CFR 800.5(a). Caltrans reviewed the proposed plans and concluded that none of the undertaking's anticipated effects under Alternative 2 meet the criteria of adverse effect described in 36 CFR 800.5(a)(1). Further, the undertaking as proposed is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties described in 36 CFR Part 68, and no modifications or conditions are necessary. Therefore, the proposed undertaking will not cause an adverse effect to the historic

property within the APE and the finding for the undertaking as a whole is a FNAE pursuant to 36 CFR 800.5(b).

Therefore, no long-term direct or indirect adverse impacts on built-environment cultural resources would occur as a result of the proposed Project under Alternative 2.

Archaeological Cultural Resources

No ground disturbance activities are proposed as part of the ongoing operation of the proposed Project under Alternative 2. Therefore, no long-term direct or indirect adverse impacts on archaeological cultural resources would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Built-Environment Cultural Resources

No permanent improvements involving changes to the Dominguez Channel Historic District or its immediate setting would take place under Alternative 3. Therefore, no long-term direct or indirect adverse impacts on built-environment cultural resources would occur as a result of the proposed Project under Alternative 3.

Archaeological Cultural Resources

Similar to Alternative 2, no ground disturbance activities are proposed as part of the ongoing operation of the proposed Project under Alternative 3. Therefore, no long-term direct or indirect adverse impacts on archaeological cultural resources would occur as a result of the proposed Project under Alternative 3.

Section 106 Concurrence

As required by 36 CFR 800.5(c) and the Caltrans Section 106 PA, Caltrans provided the consulting parties and SHPO with the FNAE without Standard Conditions on October 27, 2025. SHPO concurred on the findings under Section 106 on December 3, 2025. Concurrence documentation is included in Chapter 4, Comments and Coordination (see Figure 4.2 1, State Historic Preservation Officer Concurrence).

Section 4(f) Properties

The Dominguez Channel Historic District was previously determined eligible for listing in the NRHP; therefore, it is a “historic site” for the purposes of Section 4(f) of the Department of Transportation Act of 1966. The proposed Project would result in a “use” of this property as defined by Section 4(f). Please see Appendix A, *Section 4(f)*, under the heading “Section 4(f) De Minimis Determination” for additional details.

2.2.9.4 Avoidance, Minimization, and/or Mitigation Measures

As a result of consultation with Native American tribes, the following avoidance and minimization measure is proposed:

Measure CUL-1 Prior to construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that one Native American monitor will be onsite during ground disturbance in areas where tribes identify a high potential of impacting tribal cultural resources. The Native American monitor will have the authority to temporarily divert ground disturbance activities if cultural materials are discovered during monitoring. The construction contractor will divert all ground disturbance outside of 50 feet of the discovery area until a qualified archaeologist can assess the nature and significance of the find. At that time, Caltrans District 7 Environmental Branch Chief will be coordinated with to determine appropriate course of action.

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2.3 PHYSICAL ENVIRONMENT

2.3.1 Hydrology and Floodplain

2.3.1.1 Regulatory Setting

Executive Order (EO) 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. FHWA requirements for compliance are outlined in 23 CFR 650 Subpart A.

To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

2.3.1.2 Affected Environment

This discussion is based on the proposed Project’s Location Hydraulic Study (LHS) and Summary Floodplain Encroachment Report (HDR 2025), which was completed in September 2025.

Hydrology

The Project Study Area is located within the Lower Dominguez Channel Sub-Watershed belonging to the Dominguez Channel Watershed in Los Angeles County with Hydraulic Unit Code (HUC) 180701040302. The Dominguez Channel Watershed includes portions of the cities of Inglewood, El Segundo, Hawthorne, Manhattan Beach, Lawndale, Gardena, Redondo Beach, Torrance, and Carson as well as Unincorporated Los Angeles County.

The Dominguez Channel is one of the main channels that flows through the watershed. The Dominguez Channel is a trapezoidal earthen channel with banks primarily composed of cobbles and boulders arranged in a riprap fashion. The channel is 15.7 miles long and supports relatively permanent flows. The Dominguez Channel

drains a highly industrialized area, with various stormwater tributaries contributing to its hydrology. It begins in Hawthorne, California, and flows southwesterly before discharging into the Dominguez Channel Estuary, Los Angeles Harbor, and ultimately into the Pacific Ocean through the Los Angeles/Long Beach Inner and Outer Harbors.

Within the Project Study Area, the Torrance Lateral Channel is a tributary to the Dominguez Channel, with water flowing through the channel in a generally southward direction before connecting with the Dominguez Channel. Other surface waterbodies within the Project Study Area include Channels A through F, which run adjacent to the I-405 and ultimately connect to the Dominguez Channel. Channels A through F are concrete structures constructed in upland areas and are designed to divert urban, residential, and roadway runoff. These features are ephemeral and intended solely for short-term stormwater management and do not maintain a consistent flow. The Torrance Lateral Channel and Channels A through F are described further in Section 2.3.2, *Water Quality and Stormwater Runoff.*

Floodplains

As depicted in Figure 2.3.1-1, according to Flood Insurance Rate Map (FIRM) Panel 06037C1935F and Panel 06037C1935F, which are dated September 26, 2008, the Project Study Area is largely located within Shaded Zone X (Federal Emergency Management Agency [FEMA] 2024). Shaded Zone X areas are areas that have a 0.2 percent annual chance of flood, areas of one percent annual chance of flood with average depths of less than one foot or with drainage areas less than one square mile, and areas protected by levees from one percent annual chance of flood. The majority of the Project Study Area lies within the 500-year floodplain.

The Dominguez Channel below the I-405 overcrossing and Torrance Lateral Channel are within a Zone A floodplain (Special Flood Hazard Area). Areas designated as Zone A are areas with a 1 percent annual chance of flooding (i.e., 100-year floodplain). No base flood elevations have been determined for these floodplains.

The Dominguez Channel was originally designed for the Capital Flood, which is defined as the runoff resulting from a 50-year frequency storm event on a saturated watershed. Section 650.105 of 23 CFR 650 defines natural and beneficial floodplain values to include, but are not limited to: fish, wildlife, plant, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge.

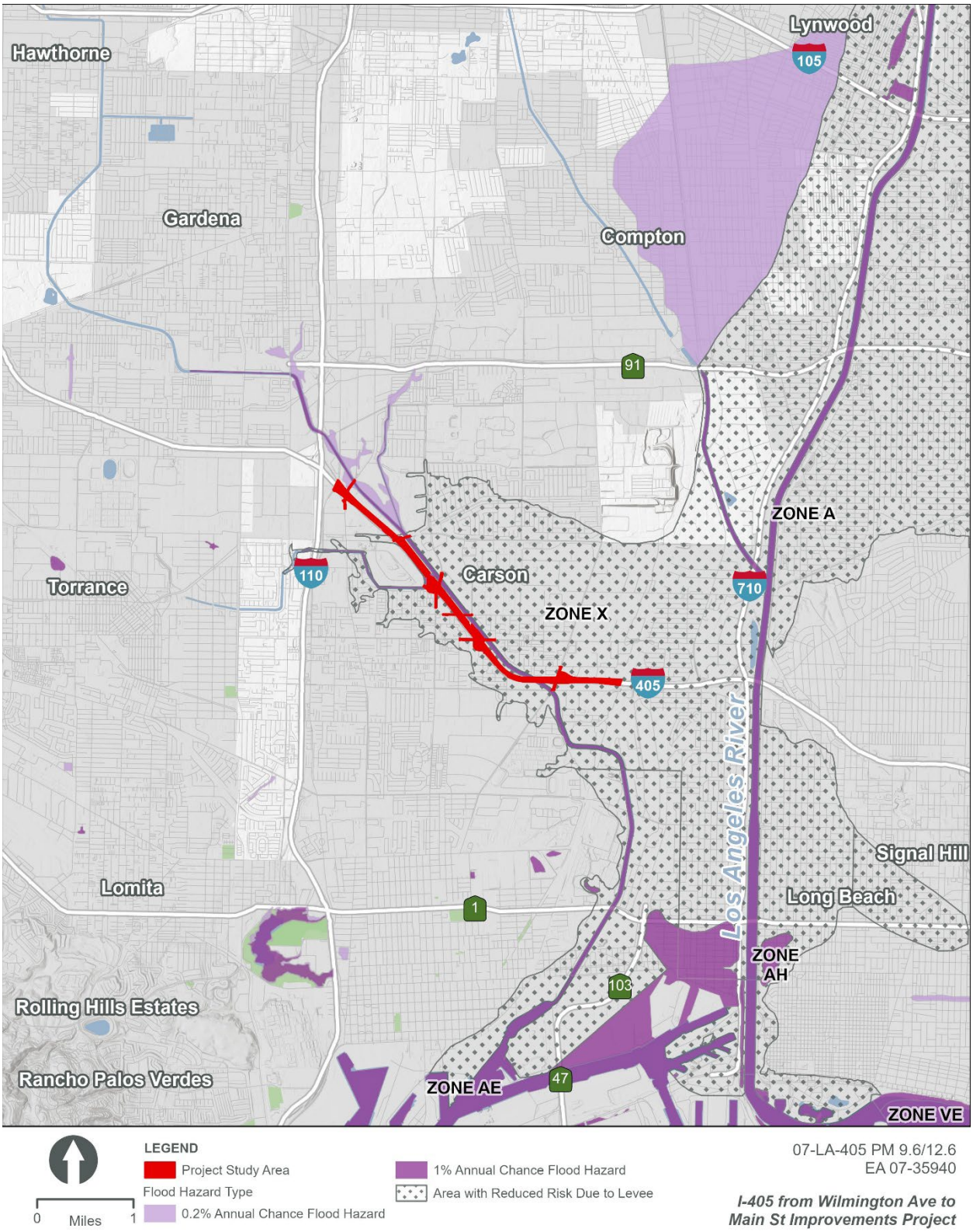

Figure 2.3.1-1: Floodplain Map

2.3.1.3 Environmental Consequences

A “significant encroachment,” as defined in 23 CFR 650.105, is a highway encroachment and any direct support of likely base floodplain development that would involve one or more of the following construction or flood-related impacts:

- A significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community's only evacuation route;
- A significant risk (to life or property); or
- A significant adverse impact on natural and beneficial floodplain values.

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, no construction activities would occur. Therefore, no short-term direct or indirect impacts on hydrology and floodplains would occur under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 proposes to widen the I-405 bridge over the Dominguez Channel (Bridge No. 53-1166). This would include the temporary use of construction equipment, vehicles, and materials within the 100-year floodplain. Short-term, temporary effects on natural and beneficial floodplain values, such as water quality, could result from construction activities taking place within the channel. No construction activities would occur within the Torrance Lateral Channel.

Temporary bridge supports may be needed within Dominguez Channel to widen the existing I-405 overcrossing structure under Alternative 2. These proposed bridge supports would temporarily alter flood elevations for the duration of work within the Dominguez Channel, which would be approximately four months. However, any alterations to the existing flood elevations in the Channel would be minor, these supports would be removed following the completion of construction within the Channel, and disturbed areas would be restored to the extent feasible after the completion of construction. In addition, construction would primarily take place during the summer months, which would reduce the potential for flood events.

The Los Angeles County Flood Control District would require a Floodplain Encroachment Permit for work conducted within the Dominguez Channel. Standard practices for erosion and water quality control would be implemented during construction. All construction activities would comply with the Construction General Permit for storm water discharges (see Section 1.4, *Project Alternatives* for Project Feature **PF-WQ-3**), which would include the preparation of a stormwater pollution prevention plan (SWPPP) that identifies best management practices (BMP) for Project construction. In addition, all construction activities would be phased to minimize

construction taking place within the Dominguez Channel during the rainy season (see Section 1.4, *Project Alternatives* for Project Feature **PF-WQ-5**). Therefore, temporary construction activities would not result in a significant adverse impact on natural and beneficial floodplain values or pose a significant risk to life or property. Further, a TMP would be prepared for the proposed Project during final design, which would ensure that the proposed Project would not result in a significant interruption of any transportation facility (Project Feature **PF-TR-1**). Therefore, no short-term direct or indirect adverse impacts on hydrology or floodplains would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management and Transportation Demand Management

Alternative 3 would not result in any alterations to the floodplain, as no work within the Dominguez Channel or Torrance Lateral Channel would occur. Standard practices for erosion and water quality control would be implemented, which would include compliance with the Construction General Permit (CGP) and development of a SWPPP. Therefore, no short-term direct or indirect adverse impacts on hydrology or floodplains would occur as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

The No-Build Alternative would maintain the current configuration of I-405, and the proposed Complete Streets and TSM/TDM elements would not be implemented. Therefore, no long-term direct or indirect impacts on hydrology or floodplains would occur under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

The proposed Project would involve the widening the existing bridge, which has seven bents, all of which are modeled as being extended upstream and downstream to accommodate the widening of I-405 for additional auxiliary lanes. Subsequently, the results of the existing and proposed condition hydraulic analysis show a water surface increase of up to 0.01 feet.

The bridge soffit clearance over the designed water surface elevation is currently 10.61 feet in the existing condition. The hydraulic analysis in the Location Hydraulic Study shows that the design storm event is contained within Dominguez Channel and does not overtop the I-405 bridge (HDR 2025). With a minimal impact on water surface elevations, the proposed Project would have no potential to cause property damage upstream or downstream of the I-405 bridge crossing Dominguez Channel. There is no potential for damage to the bridge due to flooding, for interruption of traffic due to flooding, or for loss of life during the service life of the bridge.

The existing Dominguez Channel has the capacity to accommodate the anticipated increase of less than one foot of water surface elevation. The proposed Project does not constitute a significant encroachment. The minor change in water surface elevation of

Dominguez Channel would not result in significant change in flood risks or damage and does not have the potential for increased interruption or termination of vehicular emergency or evacuation routes. Alternative 2 would also not support incompatible floodplain development.

A longitudinal encroachment is defined by the FHWA and Caltrans as an encroachment parallel to the direction of flow. The proposed Project, under Alternative 2, does not represent a longitudinal encroachment because the proposed bridge widening to accommodate additional auxiliary lanes are perpendicular to flow. These proposed improvements do not represent significant longitudinal encroachments to the floodplain and would not result in a substantial increase in water surface elevation.

Should Alternative 2 be selected as the preferred alternative, following circulation of the Draft EIR/EA, the Los Angeles County Flood Control District (LACFCD) would require a Floodplain Encroachment Permit for any work conducted within the Dominguez Channel (see Section 1.4, *Project Alternatives* for Project Feature **PF-BR-7**). As part of the LACFCD Floodplain Encroachment Permit for any work conducted within the Dominguez Channel under Alternative 2, additional avoidance and minimization measures may be required following consultation with the Los Angeles County Flood Control District consistent with the requirements of the permit.

The construction contractor would be required to comply with all applicable permit conditions.

Based on the findings above, no long-term direct or indirect adverse impacts on hydrology or floodplains would occur as a result of the proposed Project under Alternative 2.

<u>Alternative 3 – Transportation System Management/Transportation Demand Management</u>

Under Alternative 3, the Dominguez Channel Bridge would not be widened. Therefore, no long-term direct or indirect impacts on hydrology or floodplains would occur under Alternative 3.

2.3.1.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are proposed.

2.3.2 Water Quality and Stormwater Runoff

2.3.2.1 Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[1] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE). For more information, please see the Wetlands and Other Waters section.

The goal of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

[1] A point source is any discrete conveyance such as a pipe or a man-made ditch.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDR) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan (Basin Plan). In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDR), the CWA requires the establishment of Total Maximum Daily Loads (TMDL). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including MS4s. A MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water." The SWRCB has identified Caltrans as an owner/operator of an MS4 under federal regulations.

To comply with the permit, Caltrans developed a statewide Stormwater Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California.

Construction General Permit

The State Water Board has also issued a statewide CGP that regulates stormwater discharges from construction sites that result in a disturbed soil area of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than one acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop SWPPP; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the CGP. In accordance with Caltrans' SWMP and Standard Specifications, a Water Pollution Control Program is necessary for projects with a disturbed soil area less than one acre.

2.3.2.2 Affected Environment

This section is based on information from the proposed Project's Water Quality Assessment Report (WQAR) (GPA Consulting 2025), which was completed in September 2025. This section describes the environmental setting for water quality and storm water runoff. In addition, this section describes the potential impacts related to water quality and stormwater runoff that would result from implementing the proposed Project in the Project Study Area.

Regional and Local Hydrology

Groundwater

The Project Study Area is located within the Lower Dominguez Channel sub watershed (HUC180701060102), which is part of Dominguez Channel watershed (HUC1807010601), a part of the greater San Gabriel subbasin (HUC18070106) (see Figure 2.3.2-1) (United States Geological Survey [USGS] 2023). Dominguez Channel flows southwesterly within the Project Study Area and empties into the Pacific Ocean. Dominguez Channel is used occasionally for recreational purposes, such as fishing; however, there are no fishing areas within the Project Study Area.

The Project Study Area is within the West Coast subbasin of the Los Angeles Coast Groundwater Basin (Los Angeles RWQCB 2014). The subbasin is approximately 160 square miles in size. The Los Angeles Coast Groundwater Basin has approximately 374 wells, of which approximately 10 are water supply wells. According to the Drainage Report, explorations performed from the 2000s onward encountered groundwater at depths to approximately 25 feet bgs within the Project Study Area (HDR 2024).

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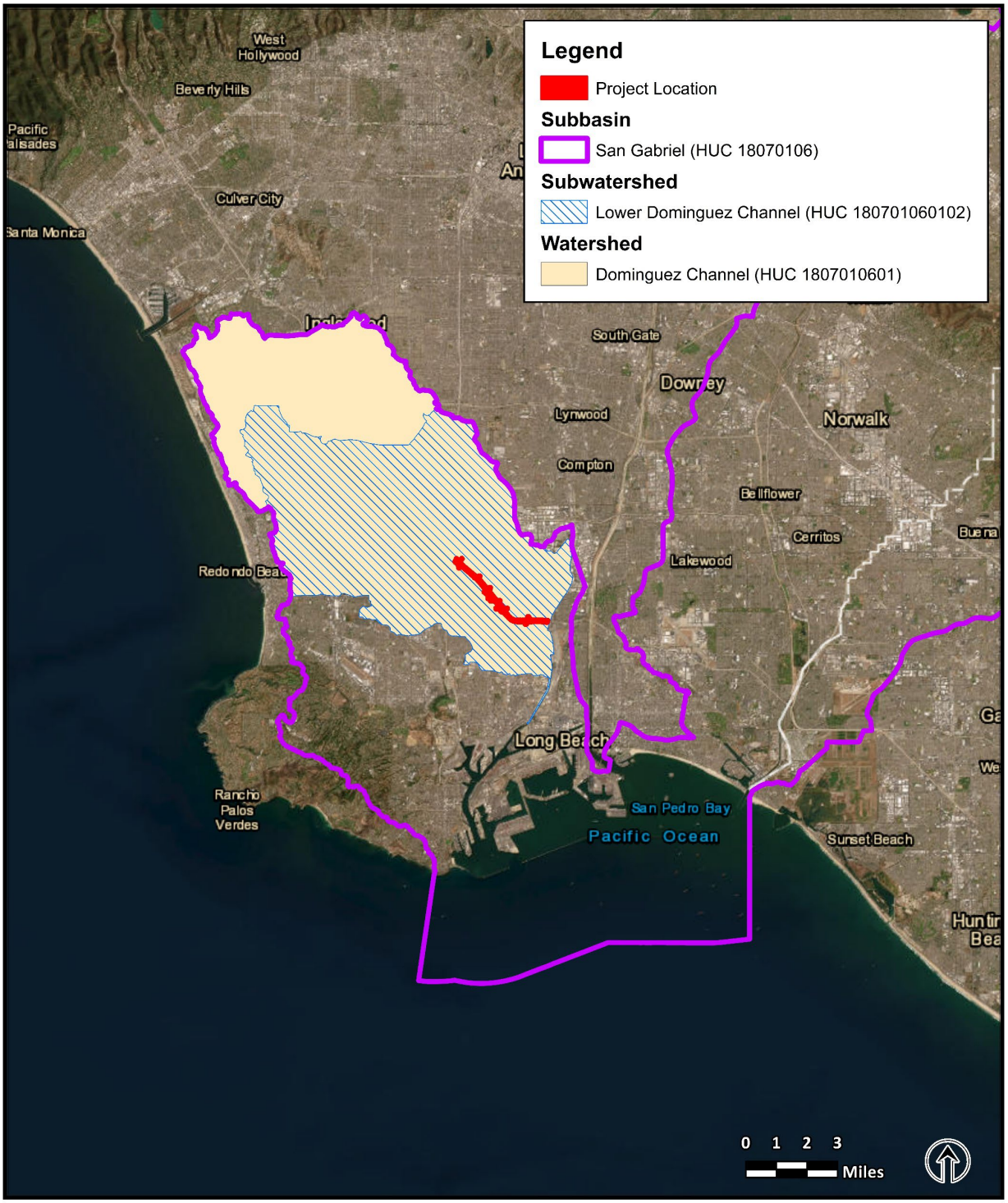

Source: USGS 2013; ESRI 2026

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I-405 from Wilmington Ave to Main St Improvements Project

Figure 2.3.2-1: Watershed Map

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The designated beneficial uses of groundwater in the Coastal Plain of Los Angeles, West Coast subbasin include municipal supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PROC) (Los Angeles RWQCB 2014).

Surface Water

The Los Angeles RWQCB has established water quality objectives for inland surface waters. Water quality objectives are intended to protect the public health and welfare and to maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water. Regional objectives for inland surface waters included for ammonia; bioaccumulation; biochemical oxygen demand; biostimulatory substances; chemical constituents; chlorine; color; exotic vegetation; floating materials; methylene blue activated substance (MUN uses); mineral quality; nitrogen (nitrate, nitrite); oil and grease; dissolved oxygen (WARM, COLD, SPWN uses); pH; polychlorinated biphenyls; radioactive substances; solid, suspended, or settleable materials; taste and odor; temperature (WARM or COLD uses); toxicity; and turbidity.

The designated inland surface water beneficial uses for Dominguez Channel are Municipal and Domestic Supply (MUN); Warm Freshwater Habitat (WARM); Wildlife Habitat (WILD); and rare, threatened, or endangered species habitat (RARE) (Los Angeles RWQCB 2014). Unlisted tributaries have the same beneficial uses as the downstream waterbody; therefore, the remaining water channels in the Project Study Area have the same beneficial uses as Dominguez Channel.

There are seven drainages within the Project Study Area: Dominguez Channel, Torrance Lateral Channel, Channel A, Channel B, Channel C, Channel D, and Channel E (see Figure 2.3.2-2 through Figure 2.3.2-5).

Dominguez Channel

Dominguez Channel begins in the city of Hawthorne and flows southwesterly, adjacent to I-405, and into the Pacific Ocean. Dominguez Channel drains an industrialized area with many sources of pollutants (see Figure 2.3.2-2 through Figure 2.3.2-5) (Los Angeles RWQCB n.d.). Dominguez Channel is anticipated to fall under the jurisdiction of USACE, RWQCB, and the California Department of Fish and Wildlife (CDFW) and is maintained by the LACFCD.

Torrance Lateral Channel

Torrance Lateral Channel is a tributary to Dominguez Channel, with water flowing through the channel in a generally southward direction before connecting with Dominguez Channel north of Avalon Boulevard (Caltrans, et al. 2014). Adjacent to I-405, Torrance Lateral Channel transitions from a fully concrete-lined structure with vertical concrete walls to a more natural bank near its connection with Dominguez Channel (see Figure 2.3.2-2 through Figure 2.3.2-5). Torrance Lateral Channel is anticipated to fall under the jurisdiction of USACE, RWQCB, and CDFW and is maintained by the LACFCD.

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Figure 2.3.2-2: Surface Waters within the Project Study Area (Sheet 1 of 4)

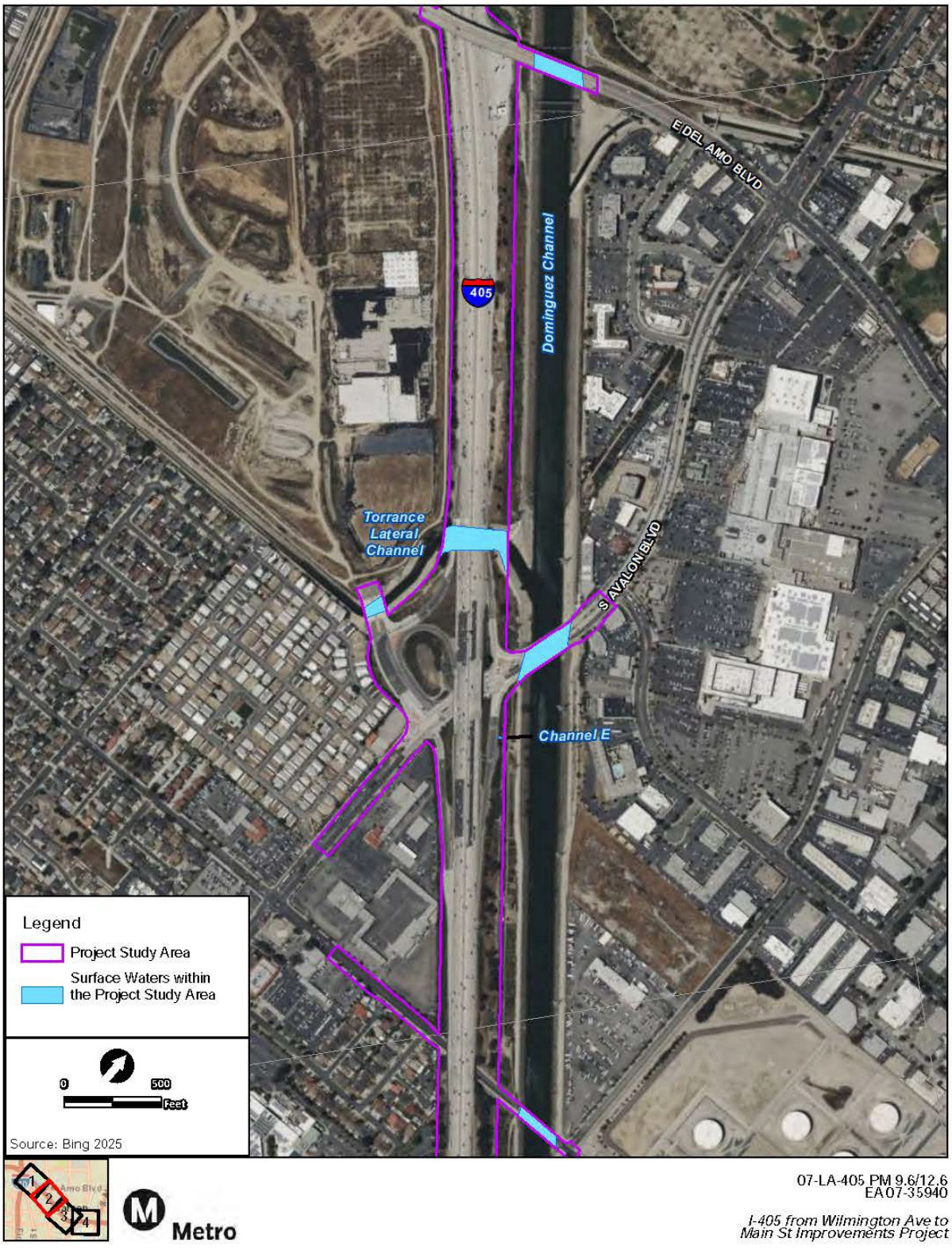


Figure 2.3.2-3: Surface Waters within the Project Study Area (Sheet 2 of 4)

Figure 2.3.2-4: Surface Waters within the Project Study Area (Sheet 3 of 4)

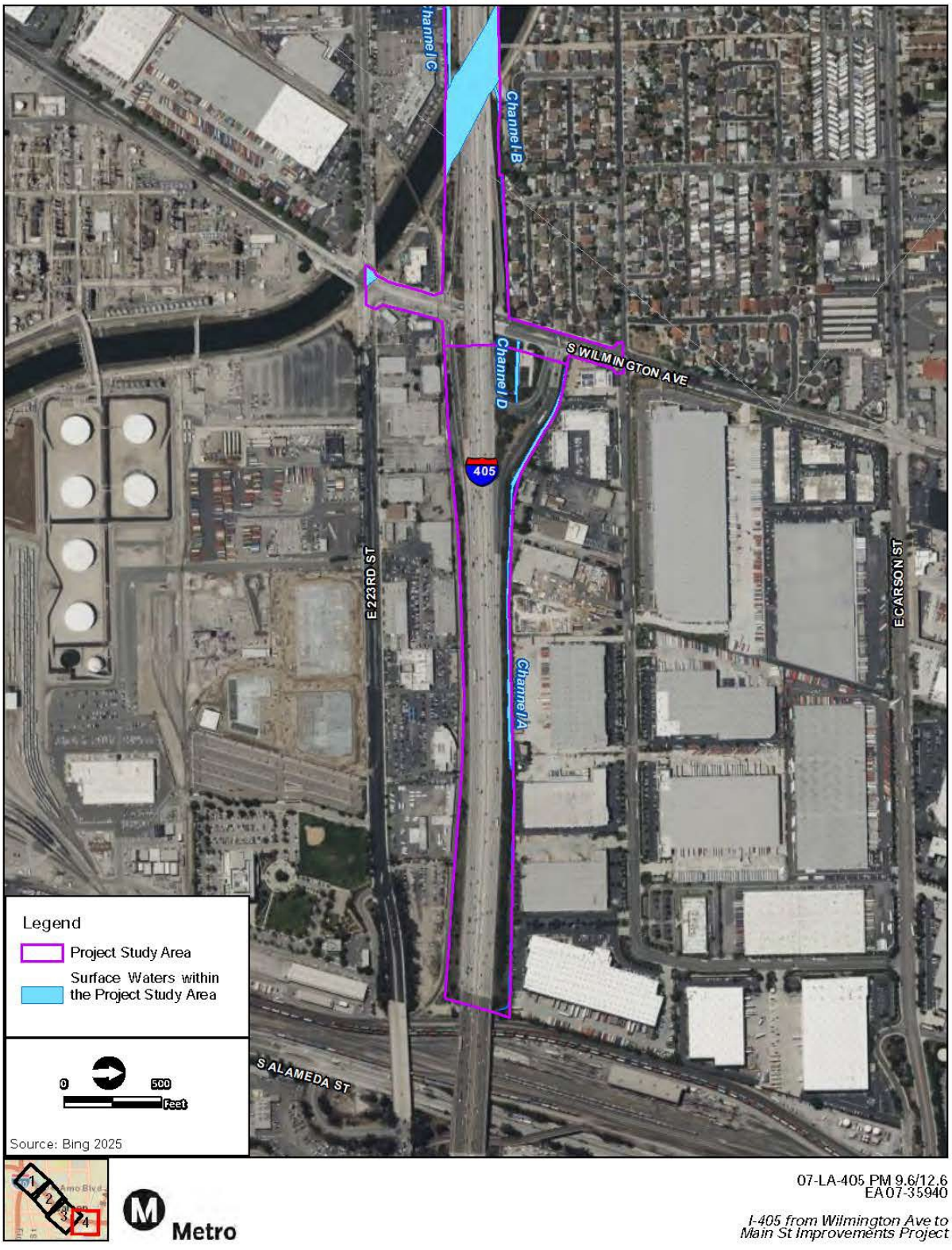


Figure 2.3.2-5: Surface Waters within the Project Study Area (Sheet 4 of 4)

Channel A

Channel A is a concrete-lined channel with ephemeral flow maintained by Caltrans; it is an approximately 0.7-mile-long feature running parallel to the NB I-405 lanes. It originates near Alameda Street and extends to Wilmington Avenue, where it transitions into an underground stormwater drain. This channel continues southward along Wilmington Avenue, ultimately discharging into Dominguez Channel outside the boundaries of the Project Study Area.

Channel B

Channel B is a concrete-lined channel with ephemeral flow, extending approximately 0.18 mile in length and running from east to west along a strip of land parallel to the NB lanes of I-405. It originates at a storm drainpipe outlet on its eastern end and flows westward into a secondary storm drainpipe inlet. This inlet transitions the flow underground, eventually discharging into Dominguez Channel through an outlet in its bank.

Channel C

Channel C is a concrete-lined channel with ephemeral flow, extending approximately 0.12 mile in length on a strip of land adjacent to the southbound (SB) lanes of I-405. The channel originates from a storm drainpipe outlet and flows eastward through the channel and into a storm drain culvert that transitions underground before discharging into Dominguez Channel.

Channel D

Channel D is a concrete-lined channel with ephemeral flow, extending approximately 211 feet inside of the Wilmington Avenue I-405 NB on-ramp loop. The channel primarily collects water from runoff and ephemeral sources, such as rainfall. The channel was dry during the site visit. However, National Hydrography Dataset mapping indicates that it likely flows westward, connecting to Dominguez Channel via a storm drain system.

Channel E

Channel E is a concrete-lined channel with ephemeral flow, extending approximately 100 feet within a plant nursery south of Avalos Street, between Dominguez Channel and the NB I-405 off-ramp to North Avalon Street. The channel primarily collects water from runoff and ephemeral sources, such as rainfall and the nursery's sprinkler system. Channel E flows perpendicular to Dominguez Channel, originating from the east-facing slope of the I-405 off-ramp. It transitions underground beneath a dirt road within the plant nursery and again beneath a paved road associated with Dominguez Channel before emerging from an outlet along Dominguez Channel’s bank.

List of Impaired Waters and Total Maximum Daily Loads

Stormwater runoff from the Project Study Area discharges into Dominguez Channel Estuary (unlined portion beneath Vermont Avenue) and Torrance Lateral Channel, which are both listed as impaired waterbodies on the CWA 303(d) list (SWRCB 2024). The pollutants listed for Torrance Lateral Channel are Indicator Bacteria, Lead, and Copper. None of the other water channels within the Project Study Area are included in the 303(d) list. The receiving waterbodies are within the jurisdiction of the Los Angeles RWQCB, and the SWRCB has outlined the TMDLs for the Dominguez Channel Watershed Boundary (see Table 2.3.2-1).

Table 2.3.2-1: Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants Total Maximum Daily Loads

Water Body	Pollutants	Effective Date	LA RWQCB Resolution Number	Categorical Implementation Requirements
Dominguez Channel Watershed Boundary	Toxic pollutants (dichlorodiphenyltrichloroethane [DDT], polycyclic aromatic hydrocarbons [PAH], total polychlorinated biphenyls [PCB], metals [Cu, Pb, Zn])	03/23/2012	R11-008	Targeted pollutants are to be monitored in the water column in the channel and harbors as well as the sediment in the harbors. The TMDL requires the dischargers of the Los Angeles River and the San Gabriel River to monitor water quality at the mouth of each river. Caltrans shall implement control measures and/or treatment BMPs to prevent the discharge of sediments that may contain toxic pollutants as listed in the TMDL. Possible treatment options include the interception and infiltration of runoff, which will allow water to percolate into soil.

Source: (GPA Consulting 2025)

Two water channels in the Project Study Area, including Dominguez Channel and Torrance Lateral Channel, are listed as impaired in the CWA Section 303(d) list, as provided by the 2022/2024 California Integrated Report (SWRCB 2024). Dominguez Channel is listed as impaired for toxic organics, pesticides, metals, and other causes.

Torrance Lateral Channel is listed as impaired for copper, lead, and indicator bacteria. None of the other water channels within the Project Study Area are identified on the CWA 303(d) list.

2.3.2.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under Alternative 1, the No-Build Alternative, the proposed Project along I-405 between Wilmington Avenue and Main Street would not be implemented. Therefore, no direct or indirect short-term impacts would occur under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Proposed activities within Dominguez Channel would require the following permits:

- NPDES CGP (SWRCB)
- CWA Section 401 Water Quality Certification (Los Angeles RWQCB)
- Waste Discharge Requirements (Los Angeles RWQCB)
- CWA Section 404 Pre-Construction Notification Nationwide Permit No. 14 Authorization (USACE)
- California Fish and Game Code (CFGC) Section 1602 Streambed Alteration Agreement (CDFW)
- Los Angeles County Flood Control District Floodplain Encroachment Permit

Alternative 2 would be required to comply with the NPDES CGP because the disturbed soil area (DSA) would be greater than 1.0 acre (Project Feature **PF-WQ-3**, see Section 1.4., *Project Alternatives*). Because Alternative 2 requires work within the Dominguez Channel, a CWA Section 404 Nationwide Permit, CWA Section 401 Water Quality Certification, and CFGC Section 1602 Streambed Alteration Agreement would be required. Waste Discharge Requirements would be required as well because the Project would discharge pollutants into surface water. The Los Angeles County Flood Control District Floodplain Encroachment Permit is required prior to work being conducted within the Dominguez Channel. The permits would be obtained in the PS&E phase and would outline requirements to follow during construction that would minimize impacts on water quality.

Based on historic data, groundwater depth is anticipated to range from 25 to 35 feet bgs near Dominguez Channel Bridge (Geo-Advantec 2025). Any groundwater encountered during construction is anticipated to be minimal, and dewatering is not likely to be

necessary; therefore, a dewatering permit would not be required. If dewatering is found to be necessary during the PS&E phase, additional information will be provided.

Physical/Chemical Characteristics of the Aquatic Environment

Alternative 2 would require work in Dominguez Channel. Construction activities would include temporary modifications to Dominguez Channel, as well as the use of construction equipment on the banks, which would have the potential to degrade water quality. In addition, any excavated soil would be exposed, increasing potential for soil erosion.

Potential short-term impacts on the aquatic environment may include temporary increases in sediment, oil, grease, and chemical pollutants during construction activities, which have the potential to affect the chemical characteristics of the aquatic environment. Runoff associated with construction activities has the potential to degrade water quality. Alternative 2 would incorporate Project Feature **PF-WQ-1**, which includes BMPs focused on reducing the discharge of pollutants, and Project Features **PF-WQ-3** through **PF-WQ-5**, which would ensure compliance with the California Statewide Permit Coverage under the CGP, preparation of a SWPPP, and minimizing construction occurring in the rainy season, to the extent feasible. With the incorporation of Project Features **PF-WQ-1** and **PF-WQ-3** through **PF-WQ-5**, Alternative 2 would minimize temporary impacts from sediments and potential pollutants.

Implementation of Alternative 2 would comply with the CGP (Project Feature **PF-WQ-3**), which requires a risk assessment be conducted to determine the project RL (Project Feature **PF-WQ-13**). A Risk Level (RL) Assessment was conducted during the PA&ED phase of the proposed Project and determined the proposed Project is a RL 2 (HDR 2025). As an RL 2 project, Caltrans must comply with the requirements included in *Attachment D of the CGP* (SWRCB 2022). RL 2 dischargers are required to comply with effluent standards outlined in Attachment D of the CGP; comply with the narrative effluent standards listed in Attachment D; implement adequate site management of construction materials; implement measures to control non-stormwater discharge during construction; implement erosion and sediment control; implement run-on and runoff control; and ensure that all inspection, maintenance, repair, and sampling activities at the Project location are performed or supervised by a Qualified SWPPP Practitioner (QSP).

Construction of Alternative 2 would result in 30.98 acres of DSA. Construction of Alternative 2 has the potential to temporarily affect water quality in receiving waters through the transport of pollutants, erosion of soils, and increased soil disturbance. Potential water quality impacts as a result of construction activities, including transport, erosion, and disturbance of soil, would be minimized with the implementation of Project Feature **PF-WQ-1**, which would implement erosion control measures. Furthermore, Project Feature **PF-WQ-2** would ensure that existing slopes and cut and fill areas would only be disturbed when necessary, soils or formations that would be difficult to restabilize would be avoided, slopes would be rounded and shaped to reduce concentrated flow, and the construction schedule would minimize soil disturbing work

during the rainy season. Project Feature **PF-WQ-6** would require Alternative 2 to conduct a Rapid Stability Assessment because the project would result in a net new impervious surface area greater than 1.0 acre. Project Feature **PF-WQ-9** would ensure that slopes are rounded and shaped accordingly, and Project Feature **PF-WQ-11** would ensure that the preservation of existing vegetation would be maximized. In accordance with the CGP, a SWPPP would also be required prior to construction because the DSA would be more than 1.0 acre under Alternative 2. The SWPPP would develop and implement erosion and sediment control BMPs to minimize the risk of erosion.

During construction, temporary bridge supports may be needed within Dominguez Channel to widen the existing I-405 overcrossing above Dominguez Channel structures under Alternative 2; which may temporarily alter current and circulation patterns if water were to be present during construction. However, with implementation of Project Feature **PF-WQ-5**, which would limit construction of the I-405 overcrossing to the dry season, to the extent feasible, impacts on current and circulation patterns would be minimized. Therefore, no substantial indirect or direct short-term adverse impacts on the physical/chemical characteristics of the aquatic environment would occur under Alternative 2.

Biological Characteristics of the Aquatic Environment

Alternative 2 may have the potential to temporarily indirectly affect habitat for fish and other aquatic organisms from construction activities. To lessen disturbance to aquatic habitat during construction, the work area would be minimized to the extent feasible. Construction equipment would not be allowed in sensitive habitats, and all equipment maintenance, staging, and disposal of waste materials would be restricted to developed or designated non-sensitive upland habitat areas. Project Feature **PF-WQ-1**, which would implement BMPs to reduce the discharge of pollutants to the maximum extent practicable, would be incorporated. Construction of Alternative 2 is not expected to have an adverse effect on fish habitat in the Project Study Area.

Work within Dominguez Channel during construction of Alternative 2 has the potential to temporarily affect habitat for fish and other aquatic organisms for the construction of the I-405 overcrossing above Dominguez Channel. With implementation of Measures **NC-3** to **NC-5**, which would ensure that work areas are reduced to the maximum extent feasible; equipment staging and storage areas for vehicles, equipment, material, fuels, lubricants, and solvents are restricted to paved areas and would be a minimum of 50 feet from jurisdictional features; BMPs, such as silt fencing, fiber rolls, straw bales, or other measures, would be implemented to minimize dust, dirt, and construction debris from entering waterways, impacts on habitat for fish and other aquatic organisms within Dominguez Channel, Torrance Lateral Channel, and Channels A through E would be minimized. In addition, Measure **NC-7**, which would ensure that equipment refueling and maintenance would be conducted in a staging area away from waterways, and Measure **NC-8**, which would ensure that stationary equipment, such as motors, pumps, generators, compressors, and welders located within 100 feet of the jurisdictional features, would be positioned over drip-pans, including when in operation. Therefore, no

substantial indirect or direct short-term adverse impacts on the biological characteristics of the aquatic environment would occur under Alternative 2.

Human Use Characteristics of the Aquatic Environment

Existing beneficial surface water uses include MUN, WARM, WILD, and RARE. During construction and operation of the Build Alternatives, minimal water would be required for construction activities. No recreational or commercial fisheries are located within the Project Study Area. No wildlife or waterfowl refuges of national, state, or local significance are within the Project Study Area, or within 0.5 mile of the Project Study Area. Dominguez Channel within the Project Study Area does not allow public access and would not result in a change to public use of Dominguez Channel.

During construction of Alternative 2, construction equipment and activities would be visible in and around the aquatic ecosystems of the Project Study Area. However, these impacts would be temporary, and the aesthetic quality of the aquatic ecosystems would return to similar conditions following construction. Therefore, no substantial adverse temporary impacts to the human use characteristics of the aquatic environment would occur under Alternative 2.

Alternative 3 – TSM/TDM Complete Streets Improvements

Alternative 3 would not require a CWA Section 404 Pre-Construction Notification Nationwide Permit No. 14, CWA Section 401 Water Quality Certification, Waste Discharge Requirement, CFGC Section 1602 Streambed Alteration Agreement, or LACFCD Floodplain Encroachment Permit because no work would be conducted in any of the waterways. Alternative 3 would be required to comply with the NPDES CGP Permit because the DSA would be greater than 1.0 acre (Project Feature **PF-WQ-3**). Alternative 3 would also comply with the SWRCB Waste Discharge Requirements because it would discharge pollutants into surface waters.

Physical/Chemical Characteristics of the Aquatic Environment

Under Alternative 3, a range of pollutants, such as trash, gasoline, or crude oils spilled from the construction sites, has the potential to affect the chemical characteristics of the aquatic environment. Runoff associated with construction activities has the potential to degrade water quality. Alternative 3 would incorporate Project Feature **PF-WQ-1** which includes BMPs focused on reducing the discharge of pollutants, and Project Features **PF-WQ-3** through **PF-WQ-5**, which would ensure compliance with the California Statewide Permit Coverage under the CGP, preparation of a SWPPP, and minimizing construction occurring in the rainy season, to the extent feasible. With the incorporation of Project Features **PF-WQ-1**, and **PF-WQ-3** through **PF-WQ-5**, Alternative 3 would minimize temporary impacts from sediments and potential pollutants.

Implementation of Alternative 3, like Alternative 2, would comply with the CGP (Project Feature **PF-WQ-4**), and is classified as a RL 2 project, which must comply with the requirements included in Attachment D of the CGP (SWRCB 2022) (Project Feature **PF-**

WQ-13). Alternative 3 would be required to follow the same RL 2 requirements as discussed under Alternative 2.

Construction of Alternative 3 would result in 12.70 acres of DSA. Similar to Alternative 2, construction of Alternative 3 has the potential to affect water quality in receiving waters through the transport of pollutants, erosion of soils, and increased soil disturbance. Alternative 3 would not include the I-405 overcrossing widening, and construction activities would be limited to the roadway and adjacent parcels. Work would not be conducted within Dominguez Channel. However, construction activities would include soil disturbance activities which could increase the potential for soil erosion. Potential WQ impacts as a result of construction activities, including transport, erosion, and disturbance of soil, would be minimized with the implementation of Project Feature **PF-WQ-1**, which would implement erosion control measures. Furthermore, Project Feature **PF-WQ-2** would ensure that existing slopes and cut and fill areas would only be disturbed when necessary, soils or formations that would be difficult to restabilize would be avoided, slopes would be rounded and shaped to reduce concentrated flow, and the construction schedule would minimize soil disturbing work during the rainy season. Project Feature **PF-WQ-6** would require Alternative 3 to conduct a Rapid Stability Assessment because the Project would result in a net new impervious surface area greater than 1 acre. Project Feature **PF-WQ-9** would ensure that slopes are rounded and shaped accordingly, and Project Feature **PF-WQ-11** would ensure that the preservation of existing vegetation would be maximized. An SWPPP would also be required prior to construction because the DSA would be more than 1 acre under Alternative 3. The SWPPP would include erosion and sediment control BMPs to reduce the risk of erosion. Therefore, no substantial indirect or direct short-term adverse impacts on the physical/chemical characteristics of the aquatic environment would occur under Alternative 3.

Biological Characteristics of the Aquatic Environment

Alternative 3 would have similar indirect impacts to those of Alternative 2. To lessen disturbance to aquatic habitat during construction, the work area would be minimized to the extent feasible. Construction equipment would not be allowed in sensitive habitats, and all equipment maintenance, staging, and disposal of waste materials would be restricted to developed or designated non-sensitive upland habitat areas. Project Feature **PF-WQ-1**, which would implement BMPs to reduce the discharge of pollutants to the maximum extent practicable, would minimize impacts on the biological characteristics of the aquatic environment. Construction of Alternative 3 is not expected to have an adverse effect on fish habitat in the Project Study Area.

Under Alternative 3, work within Dominguez Channel would not be required because construction of the I-405 overcrossing would not occur. With implementation of Measures **NC-3** to **NC-5**, which would ensure that work areas are reduced to the maximum extent feasible; equipment staging and storage areas for vehicles, equipment, material, fuels, lubricants, and solvents are restricted to paved areas and would be a minimum of 50 feet from jurisdictional features; BMPs such as silt fencing, fiber rolls, straw bales, or other measures would be implemented to minimize dust, dirt and

construction debris from entering waterways; impacts on habitat for fish and other aquatic organisms within Dominguez Channel, Torrance Lateral Channel, and Channels A through E would be minimized. In addition, Measure **NC-7**, which would ensure that equipment refueling and maintenance would be conducted in a staging area away from waterways, and Measure **NC-8**, which would ensure that stationary equipment, such as motors, pumps, generators, compressors, and welders located within 100 feet of the jurisdictional features, would be positioned over drip-pans, including when in operation. Therefore, no substantial indirect or direct short-term adverse impacts on the biological characteristics of the aquatic environment would occur under Alternative 3.

Human Use Characteristics of the Aquatic Environment

Existing beneficial surface water uses would be the same as Alternative 2. As discussed under Alternative 2, no recreational or commercial fisheries, or wildlife or waterfowl refuges are located within 0.5 mile of the Project Study Area.

Alternative 3 would result in construction equipment and activities being visible around, but not within, the aquatic ecosystem. However, these impacts would be temporary, and the aesthetic quality of the aquatic ecosystems would return to similar conditions following construction. Therefore, no substantial adverse temporary impacts to the human use characteristics of the aquatic environment would occur under Alternative 3.

Operational Impacts

Alternative 1 – No Build

Under Alternative 1, the No-Build Alternative, the proposed Project along I-405 between Wilmington Avenue and Main Street would not be implemented. Therefore, no long-term direct or indirect impacts would occur under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Physical/Chemical Characteristics of the Aquatic Environment

Under Alternative 2, the proposed Project would result in an increase of 7.43 acres of net new impervious surface area, as well as 9.05 acres of replaced impervious surface area. The increase in impervious surface area under Alternative 2 could result in a slight increase in stormwater runoff into Dominguez Channel, Torrance Lateral Channel, and Channels A through E.

An increase in impervious surface area could increase the volume and velocity of stormwater discharge, as well as the amount of pollutants in the receiving waterways. As part of the TMDL requirements, Caltrans shall implement Design Pollution Prevention (DPP) BMPs and/or treatment BMPs to prevent the discharge of sediments that may contain toxic pollutants (Project Features **PF-WQ-7** and **PF-WQ-12**). The existing drainage system would be updated within the Project Study Area to accommodate the proposed Project under Alternative 2. Improvements to the drainage

system within the Project Study Area include new storm drains and inlets, relocation and modification of existing facilities, biofiltration swales, media filters, Design Pollution Prevention Infiltration Areas (DPPIA), and extension of existing crossing culverts. In addition, Alternative 2 is required to consider treatment BMPs because the proposed Project involves major reconstruction with direct discharges to surface water bodies and creates more than 1 acre of new impervious surface area. Project Features **PF-WQ-10** and **PF-WQ-12** would implement proposed treatment BMPs and include four DPPIAs, three bioswales, and a media filter to manage stormwater and pollutant runoff in the Project Study Area. Potential BMP locations are shown in Figure 1.4-2 through 1.4-5 in Chapter 1, *Proposed Project*. The post construction treatment area would total 18.01 acres. The updated drainage system would support the increase in runoff and any overflow that would be released into Dominguez Channel, Torrance Lateral Channel, or Channels A through E. Therefore, no substantial indirect or direct long-term adverse impacts on the physical/chemical characteristics of the aquatic environment would occur under Alternative 2.

Biological Characteristics of the Aquatic Environment

Under Alternative 2, the new cast-in-drilled-hole (CIDH) piles would result in a small decrease in aquatic habitat within the Project Study Area. However, the permanent impact and reduction in area would not result in a substantial loss of wildlife habitat (see Section 2.4, Biological Environment). Long-term operation of I-405 would not affect fish or wildlife passage, wildlife habitat, habitat essential for special-status species, or introduce invasive species; therefore, no substantial adverse permanent impacts on the biological characteristics of the aquatic environment would occur under Alternative 2.

During the operation of Alternative 2, traffic safety and operations are expected to improve as a result of improvements to roadway capacity and freeway access from arterial roads. Alternative 2 would include improvements to address nonstandard features and design, the addition of auxiliary lanes, and the widening of the I-405 overcrossing above Dominguez Channel. These improvements would reduce congestion and improve access to Dominguez Channel Trail. Therefore, no substantial indirect or direct long-term adverse impacts on the human use characteristics of the aquatic environment would occur under Alternative 2.

Alternative 3 – TSM/TDM Complete Streets Improvements

Physical/Chemical Characteristics of the Aquatic Environment

Under Alternative 3, the proposed Project would result in an increase of 5.33 acres of net new impervious surface area and 3.30 acres of replaced impervious surface area. The increase in impervious surface area under Alternative 3 could result in a slight increase in stormwater runoff into Dominguez Channel, Torrance Lateral Channel, and Channels A through E. Potential BMP areas identified in Alternative 2 could be used should Alternative 3 be selected as the preferred alternative.

As discussed under Alternative 2, Alternative 3 would implement the same stormwater control measures and treatment BMPs as Alternative 2 to address the potential increase in stormwater runoff and related potential pollutants. Therefore, no substantial indirect or direct long-term adverse impacts on the physical/chemical characteristics of the aquatic environment would occur under Alternative 3.

Biological Characteristics of the Aquatic Environment

Under Alternative 3, no work would be conducted within Dominguez Channel or result in any changes in the aquatic habitat within the Project Study Area. Long-term operation of I-405 would not affect fish or wildlife passage, wildlife habitat, habitat essential for special-status species, or introduce invasive species; therefore, no substantial indirect or direct long-term adverse impacts on the biological characteristics of the aquatic environment would occur under Alternative 3.

Human Use Characteristics of the Aquatic Environment

During the operation of Alternative 3, traffic safety and operations are expected to improve as a result of Complete Street elements and TSM/TDM strategies. These improvements would improve safety and access to Dominguez Channel Trail. Therefore, no substantial adverse permanent impacts to the human use characteristics of the aquatic environment would occur under Alternative 3.

2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures

Measures **NC-3**, **NC-4**, **NC-5**, **NC-7**, and **NC-8** from Section 2.4.1, *Natural Communities*, are proposed.

2.3.3 Geology/Soils/Seismic/Topography

2.3.3.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under CEQA.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Structures are designed using the Caltrans' Seismic Design Criteria. The Seismic Design Criteria provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level, and which methods are used for estimating the seismic demands and structural capabilities.

2.3.3.2 Affected Environment

This section is based on the proposed Project's *Preliminary Geotechnical Design Report* (PGDR; Geo-Advantec, Inc. 2025), which was completed in February 2025. The RSA for geological resources is the Project Study Area, which represents the area where there could be direct ground and vegetation disturbance.

Topography

The Project Study Area is located within the Los Angeles Basin, which is bounded on the north by the Santa Monica and San Gabriel Mountains, on the east and southeast by the Santa Ana Mountains and the San Joaquin Hills, and on the west and south by the Pacific Ocean. The Los Angeles Basin represents a down-warped block of basement rock overlain by approximately 31,000 feet of sediment. The terrain within the Project Study Area is relatively flat, with an ascending gradient from northwest to southeast and embankments along I-405. The ground surface elevation within the Project Study Area ranges from an approximate elevation of 15 to 35 feet, with most of the Project Study Area ranging from approximately 20 to 25 feet, except near the 213th Street Undercrossing, which has an approximate elevation of 15 feet.

Regional Geology

The Los Angeles Basin is part of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges extend north to the San Gabriel Mountains and south into Mexico to the tip of Baja California. The Peninsular Ranges Province is characterized by alluviated basins, elevated erosion surfaces, and northwest-trending mountain ranges bounded by northwest-trending faults.

The Project Study Area is within the Long Beach Quadrangle (Saucedo, G.J., et al. 2016). The map shows that the Project Study Area consists of unconsolidated to slightly consolidated young alluvial fan deposits (*Qyf*) and slightly to moderately consolidated

old alluvium (*Qoa*) (see Figure 2.3.3-1). The young alluvial fan deposits are more prominent between Wilmington Avenue and Avalon Boulevard.

Soil Conditions

Subsurface soils within the Project Study Area generally consist of artificial fill, which is composed primarily of silty sand, and alluvium, which consists of clay and silt in the upper layers and sand at deeper depths. The soils within the Project Study Area are generally expected to be non-expansive or exhibit low to medium expansion potential due to the presence of both cohesive and cohesionless soil. Samples of subgrade soils would be collected during final design to test their expansion potential.

Oil and Gas Resources

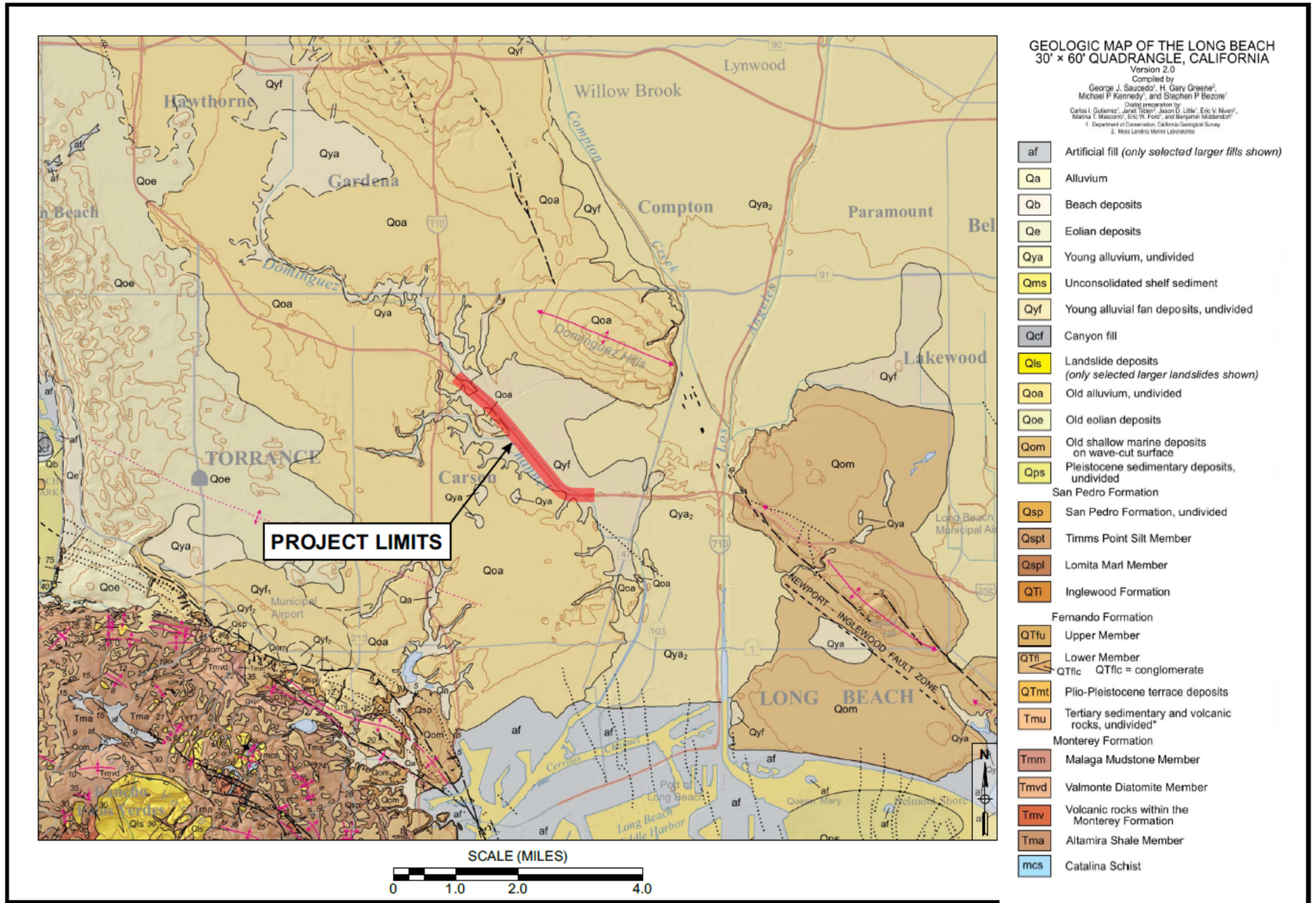
Oil and gas resources can be a concern from a geologic standpoint because of the potential for land subsidence to occur in areas where extraction of these resources occurs. The Project Study Area is located between the Dominguez and Wilmington oil fields but is not located in an oil/gas field (California Geologic Energy Management Division n.d). There are numerous idle and plugged oil wells in the immediate vicinity of the Project Study Area along both sides of I-405; however, there are no known oil wells within the Project Study Area.

Groundwater Conditions

The historically highest groundwater depths in the Project Study Area range from 10 to 20 feet bgs (Geo-Advantec, Inc. 2025). Groundwater was encountered at depths ranging from 0.7 to 70.0 feet bgs during geotechnical test borings for the Project.

Seismicity

The Project Study Area is located within a seismically active region as a result of being located near the active margin between the North American and Pacific tectonic plates. The principal source of seismic activity is movement along the northwest-trending regional faults, such as the San Andreas, San Jacinto, Newport-Inglewood, and Whittier-Elsinore fault zones Figure 2.3.3-2. Table 2.3.3-1 tabulates the nearest faults, their corresponding maximum magnitude, and their distances from the approximate center of the Project Study Area.



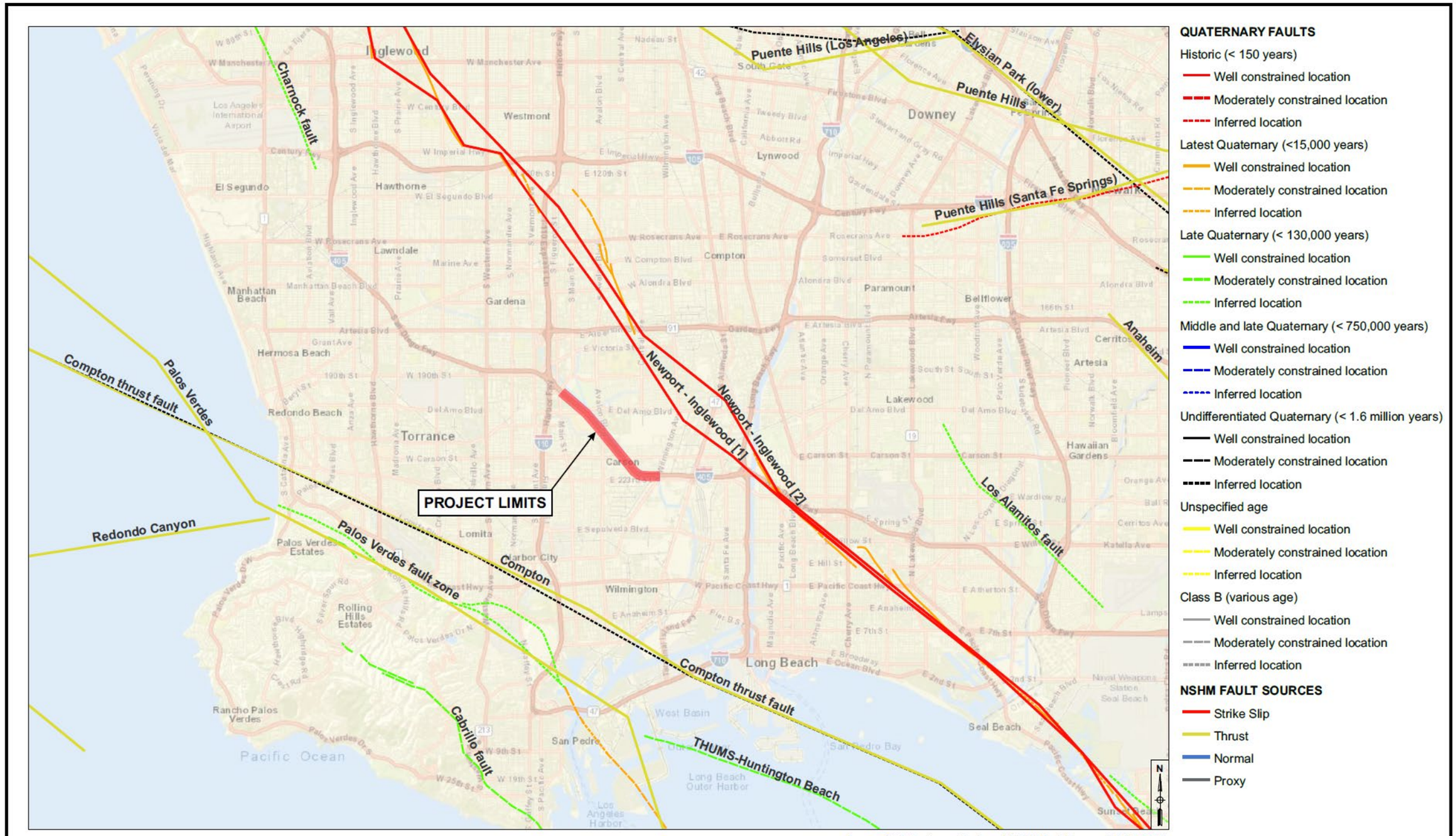
GEOLOGIC MAP OF THE LONG BEACH
30' × 60' QUADRANGLE, CALIFORNIA
Version 2.0

Compiled by
George J. Saucedo[1], H. Gary Greene[2],
Michael P. Kennedy[1], and Stephen P. Bezore[1]
Digital preparation by
Carlos I. Gutierrez[1], Janet Tinker[1], Jason D. Little[1], Eric V. Niven[1],
Marina T. Mascorro[1], Eric N. Ford[1], and Benjamin Middendorf[1]
1. Department of Conservation, California Geological Survey
2. Moss Landing Marine Laboratories

af	Artificial fill *(only selected larger fills shown)*
Qa	Alluvium
Qb	Beach deposits
Qe	Eolian deposits
Qya	Young alluvium, undivided
Qms	Unconsolidated shelf sediment
Qyf	Young alluvial fan deposits, undivided
Qcf	Canyon fill
Qls	Landslide deposits *(only selected larger landslides shown)*
Qoa	Old alluvium, undivided
Qoe	Old eolian deposits
Qom	Old shallow marine deposits on wave-cut surface
Qps	Pleistocene sedimentary deposits, undivided
	San Pedro Formation
Qsp	San Pedro Formation, undivided
Qspt	Timms Point Silt Member
Qspl	Lomita Marl Member
QTi	Inglewood Formation
	Fernando Formation
QTfu	Upper Member
QTfl	Lower Member
QTflc	QTflc = conglomerate
QTmt	Plio-Pleistocene terrace deposits
Tmu	Tertiary sedimentary and volcanic rocks, undivided*
	Monterey Formation
Tmm	Malaga Mudstone Member
Tmvd	Valmonte Diatomite Member
Tmv	Volcanic rocks within the Monterey Formation
Tma	Altamira Shale Member
mcs	Catalina Schist

Geo-Advantec, Inc.		GEOLOGIC MAP	FIGURE 3
PROJECT NO.	23-1126	I-405 from Wilmington Avenue to Main Street Improvements Project PA&ED	
DATE	February 2025		

Figure 2.3.3-1: Geologic Map



Source: *U.S. Quaternary Faults and NSHM Fault Sources (USGS, 2023).*

Geo-Advantec, Inc.		FAULT ACTIVITY MAP	FIGURE
PROJECT NO.	23-1126	I-405 from Wilmington Avenue to Main Street Improvements Project PA&ED	6
DATE	February 2025		

Figure 2.3.3-2: Fault Activity Map

Table 2.3.3-1: Faults Near the Project Study Area

Fault Name	Maximum Magnitude	Distance (miles)
Newport-Inglewood	7.2	1.7
Compton	7.5	3.7
Palos Verdes	7.4	5.1
Puente Hills (Santa Fe Springs)	6.6	8.6
Puente Hills (Los Angeles)	7.0	8.9

Source: (Geo-Advantec, Inc. 2025)

The Project Study Area is not located within an Alquist-Priolo Earthquake Fault Zone or within 1,000 feet of any unzoned Holocene or younger-aged fault (see Figure 2.3.3-3). The nearest Alquist-Priolo Earthquake Fault Zones are two Newport-Inglewood Fault Zones located approximately 2 miles north and east of the Project Study Area.

Liquefaction

Liquefaction may occur when saturated, loose to medium dense, cohesionless soils are densified by ground vibrations. Most of the Project Study Area is located within a mapped liquefaction zone (California Geologic Survey [CGS] 2021) (Figure 2.3.3-3). Lateral spreading occurs when the underlying soils are liquefied and the ground displaces laterally on gently sloping topography, such as a riverbank. Although the Project Study Area is susceptible to liquefaction, due to the relatively flat topography and deep depths of liquefiable layers, lateral spreading is not expected within the Project Study Area.

Landslides

The topography of the site and the adjacent areas is relatively flat. The Project Study Area is not located within a mapped landslide seismic hazard zone (CGS 2021). The existing embankments were presumably constructed following the Caltrans Standard Specifications and do not appear to exhibit any distress from settlement or stability problems. Therefore, landslides are not considered to be a potential hazard to the Project Study Area.

Seiches and Tsunamis

Seiches are large waves generated in enclosed bodies of water as a response to ground shaking. The Project Study Area is not located near an enclosed body of water. Tsunamis are waves created in large bodies of water by fault displacement or strong ground movement. The Project Study Area is not located in a tsunami hazard area (CGS n.d.). Therefore, seiches and tsunamis are not potential hazards within the Project Study Area.

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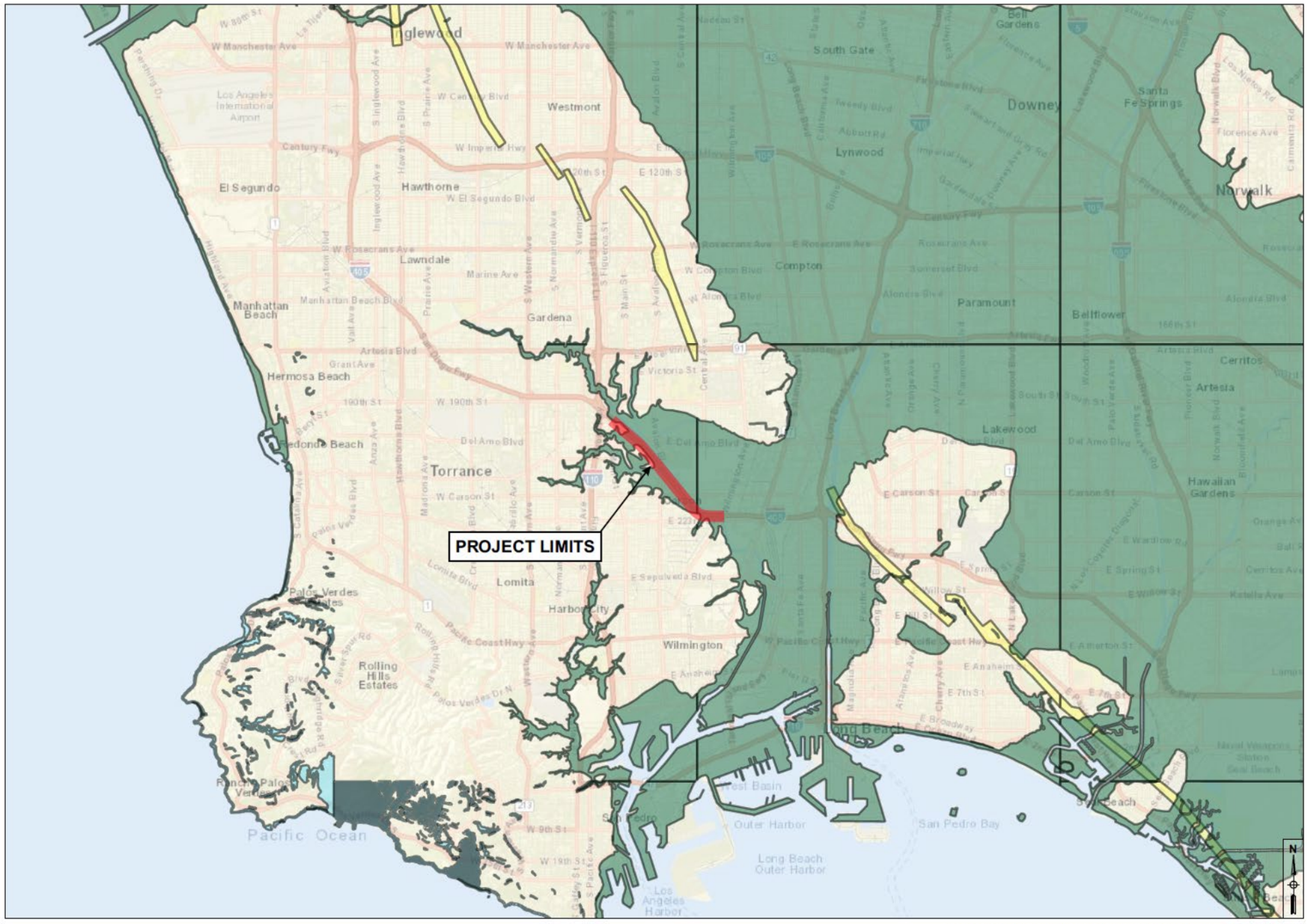

Source: *Earthquake Zones of Required Investigation - EQZApp (CGS).*

Geo-Advantec, Inc.		SEISMIC HAZARD ZONES MAP	FIGURE
PROJECT NO.	23-1126	I-405 from Wilmington Avenue to Main Street Improvements Project PA&ED	7
DATE	February 2025		

Figure 2.3.3-3: Seismic Hazard Zones Map

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Volcanic Hazards

There are no active, potentially active, or inactive volcanoes in Los Angeles County. Therefore, potential volcanic hazards would not occur within the Project Study Area.

Economical Resources/Mineral Hazards

There are no known economical resources/mineral resources within the Project Study Area (CGS 2018).

2.3.3.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, no construction activities would occur. As a result, geological resources would not be affected by ground disturbance activities. Therefore, no short-term direct or indirect impacts on geological resources would occur as a result of the proposed Project under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Under Alternative 2, construction activities would temporarily disturb soil and vegetation within the Project Study Area, primarily in trample zones around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts during construction would include soil compaction and increased potential of soil erosion due to soil exposure. During a storm event, soil erosion could occur at an accelerated rate. The proposed Project under Alternative 2 would be designed to minimize slope failure, settlement, and erosion. Standard measures would be incorporated that require adherence to the requirements of the Construction General Permit, which would include incorporation of erosion and sediment control Best Management Practices (BMP) pursuant to a Stormwater Pollution Prevention Plan (SWPPP; see Project Features **PF-WQ-1** through **PF-WQ-13** in Section 1.4, *Project Alternatives*). Typical measures that could be incorporated include the application of soil stabilizers, such as soil binders, rock slope protection, velocity dissipation devices, and flared end sections for culverts.

Construction activities associated with Alternative 2 could be affected by ground motion, liquefaction, and possibly ground deformation if an earthquake event were to occur during construction. However, incorporation of safe construction practices and compliance with Caltrans and California Division of Occupational Safety and Health Administration (Cal-OSHA) requirements would reduce potential impacts of these conditions.

Based on the discussion above, with the incorporation of Project Features **PF-WQ-1** through **PF-WQ-13**, no adverse direct or indirect short-term impacts would occur on geological resources as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Similar to the impacts discussed under Alternative 2, Alternative 3 would temporarily disturb soil and vegetation within the Project Study Area during construction, and temporary impacts during construction would include soil compaction and increased potential of soil erosion due to soil exposure. During a storm event, soil erosion could occur at an accelerated rate. Similar to Alternative 2, the proposed Project under Alternative 3 would be designed to minimize slope failure, settlement, and erosion by the incorporation of standard measures requiring adherence to the requirements of the Construction General Permit, which would include incorporation of erosion and sediment control BMP pursuant to a SWPPP; see Project Features **PF-WQ-1** through **PF-WQ-13** in Section 1.4, *Project Alternatives*.

Similar to Alternative 2, construction activities associated with Alternative 3 could be affected by ground motion, liquefaction, and possibly ground deformation if an earthquake event were to occur during construction. However, with the incorporation of safe construction practices and compliance with Caltrans and Cal-OSHA requirements, potential impacts of these conditions would be minimized.

Based on the discussion above, with the incorporation of Project Features **PF-WQ-1** through **PF-WQ-13**, no adverse direct or indirect short-term impacts would occur on geological resources as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

The No-Build Alternative would maintain the current configuration of I-405, and the proposed Complete Streets and TSM/TDM elements would not be implemented. Therefore, geological resources would not be impacted. Therefore, no long-term direct or indirect impacts on geological resources would occur as a result of the proposed Project under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

The Project Study Area is located within a seismic area and known liquefaction zone. As detailed in Measure **GEO-1**, site-specific geotechnical investigations would be conducted to evaluate soil and groundwater conditions to support the final design. A Geotechnical Design Report would be prepared to document the findings of the surface investigations. The report would include all appropriate measures to reduce geological/seismic hazards, such as liquefaction potential, lateral spreading, seismic induced settlement, slope instability, expansive soils, and corrosive soils. The proposed Project would not impact natural landmarks or landforms. The proposed Project would be designed and constructed based on the recommendations from the geotechnical report and in accordance with applicable federal, State, and local seismic codes and Caltrans seismic design criteria for structures.

Historical corrosion data were reviewed in the PGDR (Geo-Advantec, Inc. 2025). Both corrosive and non-corrosive soil conditions are expected within the Project Study Area. As detailed in Measure **GEO-1**, the potential for soil corrosion effects on structures within the Project Study Area under Alternative 2 would be further investigated during final design. If recommended by the geotechnical investigation, final design would incorporate design features related to corrosive soils. Therefore, with the incorporation of Measure **GEO-1**, no adverse direct or indirect impacts to geologic resources would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Similar to the findings under Alternative 2, the Project Study Area is located within a seismic area and known liquefaction zone. However, with the incorporation of Measure **GEO-1**, site-specific geotechnical investigations would be conducted to evaluate soil and groundwater conditions to support the final design. Therefore, with the incorporation of Measure **GEO-1**, no adverse direct or indirect impacts to geologic resources would occur as a result of the proposed Project under Alternative 3.

2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measure is proposed:

Measure GEO-1 Prior to completion of the Plans, Specifications, and Estimates (PS&E) phase, California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that a professional geologist or professional engineer prepare a final design-level geotechnical report for the Project. This report will document soil-related constraints and hazards, such as slope instability, settlement liquefaction, or related secondary seismic impacts, which may be present. The report will also include:

- Evaluation of expansive and potentially corrosive soils and recommendations regarding construction procedures and/or design criteria to reduce the effect of these soils on development of the Project,
- Identification of potential liquefiable areas within the Project Study Area,
- Demonstration that the design of all proposed retaining walls and sound walls are geotechnically suitable for soils within the Project Study Area
- Geotechnical recommendations for specific foundation design and earthwork construction.

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2.3.4 Paleontology

2.3.4.1 Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils.

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

54 USC 320301-320303 (Monuments, Ruins, Sites, and Objects of Antiquity) prohibits appropriating, excavating, injuring, or destroying any object of antiquity situated on federal land without the permission of the Secretary of the Department of Government having jurisdiction over the land. Fossils are considered “objects of antiquity” by the Bureau of Land Management, the National Park Service, the Forest Service, and other federal agencies.

23 USC 305 (Archeological and Paleontological Salvage) authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 54 USC 320301-320303 above and state law.

Under California law, paleontological resources are protected by CEQA.

2.3.4.2 Affected Environment

This section is based on the *Paleontological Identification Report/Paleontological Evaluation Report* (Duke Cultural Resource Management, LLC [Duke CRM] 2025), which was completed in January 2025. The RSA for paleontological resources is the Project Study Area, which represents the area where there could be direct ground and vegetation disturbance.

The paleontological resources literature review was conducted using available references to identify sedimentary formations with paleontological resource sensitivity and fossil localities within the vicinity of the Project Study Area. This included a review of available geologic maps and literature and a formal locality search through Southern California museums. A field survey of the Project Study Area was conducted on May 30, 2024.

The Project Study Area sits in an eroded and faulted package of both marine and terrestrial sediments on the margin of the Southern California batholith. Los Angeles County, where the proposed Project is situated, is atop a thick sequence of terrestrial and marine sedimentary rocks. See Section 2.3.3, *Geology/Soils/Seismic/Topography*, for additional information about the regional geology.

Caltrans uses a tripartite scale to determine the paleontological sensitivity of a rock unit, which is provided in Table 2.3.4-1. This scale consists of high potential, low potential, and no potential.

Table 2.3.4-1: Caltrans Paleontology Sensitivity Scale

Caltrans Sensitivity	Description
High Potential	Rock units that, based on previous studies, contain or are likely to contain significant vertebrate, invertebrate, or plant fossils. These units include, but are not limited to, sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units. Fossiliferous deposits with extremely limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and ranked as highly sensitive. High sensitivity includes the potential for containing: (1) abundant vertebrate fossils; (2) a few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; (3) areas that may contain datable organic remains older than recent, including Neotoma (sp.) middens; or (4) areas that may contain unique new vertebrate deposits, traces, and/or trackways. Areas with a high potential for containing significant paleontological resources require monitoring and mitigation.
Low Potential	This category includes sedimentary rock units that: (1) are potentially fossiliferous but have not yielded significant fossils in the past; (2) have not yet yielded fossils but possess a potential for containing fossil remains; or (3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because vertebrates are generally rare and found in more localized stratum. Rock units designated as low potential generally do not require monitoring and mitigation. However, as excavation for construction gets underway, new and unanticipated paleontological resources might be encountered. If this occurs, a Construction Change Order must be prepared to have a qualified principal paleontologist evaluate the resource. If the resource is determined to be significant, monitoring and mitigation are required.
No Potential	Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing significant paleontological resources. For projects encountering only these types of rock units, paleontological resources can generally be eliminated as a concern when the Preliminary Environmental Assessment Report is prepared, and no further action taken.

Source: (Caltrans 2025)

Table 2.3.4-2 describes paleontological sensitivities within the Project Study Area. Geologic sediments underlying the Project Study Area have been mapped as terrestrial sediments dating from the late Pleistocene to the Holocene and consisting of unconsolidated sands and silts deposited by fluvial action, which originated from the mountains to the north of the Project Study Area.

Table 2.3.4-2: Paleontological Sensitivity of the Project Study Area

Geologic Formation	Map Symbol	Age	Proximity to Project Study Area	Paleontological Sensitivity
Recent artificial fill	*af*	Recent	Underlies Interstate 405	No
Quaternary young alluvial fan and valley deposits	*Qyf*	Holocene to late Pleistocene	Underlies portions of the Project Study Area's surface	Low to High
Quaternary young alluvial flood plain deposits	*Qya*	Holocene to late Pleistocene	Underlies portions of the Project Study Area's surface	Low to High
Quaternary old axial channel deposits	*Qoa*	Late to middle Pleistocene	Underlies portions of the Project Study Area's surface	High

Source: (Duke CRM 2025)
Notes: *af*=artificial fill; *Qyf*=Quaternary young alluvial fan and valley deposits; *Qya*=Quaternary young flood plain deposits; *Qoa*=Quaternary old axial channel deposits

Recent artificial fill (*af*): The I-405 corridor within the Project Study Area is elevated above the surrounding topography on approximately 10 feet of artificial fill. Much of the artificial fill, especially that underlying I-405, likely dates to the initial installation of I-405. The artificial fill is considered to have no paleontological sensitivity because these sediments have been previously dug up and processed and were artificially deposited.

Quaternary young alluvial fan and valley deposits (*Qyf*): This terrestrial geologic unit dates to the Holocene (11,700 kilo-annum [ka; 1,000 years] to present) and includes potentially some late Pleistocene (129,000–11,700 ka) sediments at depth. However, at an undetermined depth, the *Qyf* fan and valley deposits, as exposed at the surface, transition to highly paleontologically sensitive sediments dating to the late Pleistocene. These lower, and thus older, portions of the *Qyf* alluvial fan and valley deposits have high potential to contain paleontological resources. The *Qyf* consists of sands and silts in the area underlying the Project Study Area.

Quaternary young flood plain deposits (*Qya*): This terrestrial geologic unit dates to the Holocene (11,700 ka to present) and includes potentially some late Pleistocene (129,000–11,700 ka) sediments at depth. Like the *Qyf*, the *Qya* deposits transition to highly paleontologically sensitive sediments dating to the Pleistocene at unknown depths and have the potential to contain paleontological resources. The *Qya* is present at the surface at the northwestern terminus of the Project Study Area, near the Main Street overpass. The *Qya* sediments consist of poorly sorted and poorly consolidated clay and silt with loose, dense sand.

Quaternary older axial channel deposits (*Qoa*): This geologic unit, also of terrestrial origin, dates to the late Pleistocene and includes potentially middle Pleistocene elements. It was deposited in a stream-terrace environment during

the Pleistocene and thus has high potential to contain paleontological resources. It has been mapped in the central and northwestern portions of the Project Study Area. This unit consists of moderately to well-consolidated gravel, sand, silt, and clay.

A review of paleontological literature was conducted for the proposed Project (Duke CRM 2025). The literature review consulted peer-reviewed journals and published geologic maps. The review of paleontological literature and the online search of paleontology locality records in the University of California Museum of Paleontology did not reveal notable paleontological resources in the Project Study Area or its immediate vicinity. The paleontological records search at the Natural History Museum of Los Angeles County (NHMLAC) did identify two localities within 1 mile of the Project Study Area—Locality Prefix Vertebrate Paleontology (LACM VP) 4129 and LACM VP 3319. Elephant family (*Proboscidea*) and camel family (*Camelidae*) were identified at LACM VP 4129, and Mammoth (*Mammuthus*) were identified at LACM VP 3319 within 5 feet bgs. These localities have sediments similar to those underlying the Project Study Area, but at considerable depth, 24 and 30 feet bgs, respectively.

2.3.4.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, no construction activities would occur. As a result, paleontological resources would not be affected. Therefore, no short-term direct or indirect impacts on paleontological resources would occur as a result of the proposed Project under the No-Build Alternative 1.

Alternative 2 – Auxiliary Lanes and Complete Streets

Under Alternative 2, proposed excavations may impact sedimentary geologic formations with varying paleontological sensitivity: the Quaternary younger alluvial fan and valley deposits (*Qa*), which may have deeper Pleistocene portions unlikely to be impacted by the proposed Project, and two exposures of Quaternary older axial channel deposits (*Qoa*) in the middle and northwestern portions of the Project area.

Under Alternative 2, there is potential to impact paleontologically sensitive geologic units at or near the surface during construction. In accordance with Caltrans Standard Specification 14-7.03, contactors would be required to stop work within a 60-foot radius of discovery if paleontological resources are encountered during construction. Further, a Paleontological Mitigation Plan, summarized in Measure **PAL-1**, would be prepared by a qualified principal paleontologist prior to the construction phase to protect potential paleontological resources. Boring and drilling operations do not require monitoring, because the process damages or destroys the paleontological resources along with the original geologic contexts in which they were preserved. Excavations for the tie-back wall are anticipated to be 15 feet bgs, impacting paleontologically sensitive sediments (Qoa) dating to the Pleistocene Epoch. Complete Streets elements would not require monitoring because the depth of anticipated ground disturbance (up to 3 feet bgs) is not

deep enough to potentially impact paleontological resources. Therefore, with the incorporation of Measure **PAL-1**, no short-term direct or indirect impacts on paleontological resources would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Improvements under Alternative 3 would be limited to the Complete Streets elements and Transportation Systems Management (TSM) and Transportation Demand Management (TDM) strategies also identified under Alternative 2. Ground disturbance in these areas would be limited to 3 feet bgs; and thus, would not impact paleontologically sensitive soils within the Project Study Area. However, similar to Alternative 2, Alternative 3 would still include tie-back walls along I-405, which would require ground disturbance of up to 15 feet bgs. Thus, a Paleontological Mitigation Plan (PMP) would need to be prepared pursuant to Measure **PAL-1**. Therefore, with the incorporation of Measure **PAL-1**, no adverse short-term direct or indirect impacts on paleontological resources would occur as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No Build

Under the No-Build Alternative, no construction activities would occur. As a result, paleontological resources would not be affected. Therefore, no long-term direct or indirect impacts on paleontological resources would occur as a result of the proposed Project under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

No ground disturbance activities are planned after completion of construction. Therefore, no long-term direct or indirect impacts on paleontological resources would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Similar to Alternative 2, no ground disturbance activities are planned after completion of construction under Alternative 3. Therefore, no long-term direct or indirect impacts on paleontological resources would occur as a result of the proposed Project under Alternative 3.

2.3.4.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measure is proposed:

Measure PAL-1 During the Plans, Specifications, and Estimates (PS&E) Phase, the Los Angeles County Metropolitan Transportation Authority's

Resident Engineer or designated contractor will ensure that a Paleontological Mitigation Plan (PMP) is prepared for the Project.

The PMP will address potential impacts on paleontological sensitive geologic units during construction activities. The PMP will be prepared by a qualified principal paleontologist and submitted for review sufficiently in advance of the anticipated start-work date (Caltrans 2025). According to the Caltrans *Standard Environmental Reference* (SER), Volume 1, Chapter 8, a PMP shall at minimum include:

- general fieldwork and laboratory methods proposed
- curation requirements
- report format and content
- report distribution
- proposed staff and their qualifications

The implementation of mitigation measures should be conducted under the direction of a qualified principal paleontologist. Should impacts to paleontological resources be unavoidable, mitigation measures may include:

- recovery of a sample of fossiliferous material prior to construction and/or
- monitoring of construction and halting work, to recover important fossils, and
- cleaning, identifying, and cataloging of fossil specimens collected for curation and research purposes.

2.3.5 Hazardous Waste/Materials

2.3.5.1 Regulatory Setting

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 and the Resource Conservation and Recovery Act (RCRA) of 1976. The purpose of CERCLA, often referred to as "Superfund," is to identify and cleanup abandoned contaminated sites so that public health and welfare are not compromised. RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act of 1992
- CWA
- Federal Clean Air Act (FCAA)
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act
- EO 12088, *Federal Compliance with Pollution Control Standards*

Section 121(d) of CERCLA requires that remedial action plans include consideration of more stringent state environmental "Applicable or Relevant and Appropriate Requirements." The 1990 National Oil and Hazardous Substances Pollution Contingency Plan also requires compliance with Applicable or Relevant and Appropriate Requirements during remedial actions and during removal actions to the extent practicable. As a result, state laws pertaining to hazardous waste management and cleanup of contamination are also pertinent.

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement the RCRA in the state. The Porter-Cologne Water Quality Control Act restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

2.3.5.2 Affected Environment

This section is based on the proposed Project's Initial Site Assessment (ISA; Kroner Environmental Services, Inc. 2024), which was completed in December 2024. The hazardous waste/materials study area consists of the Project Study Area.

The ISA was conducted to identify potential and known contaminant sources or recognized environmental conditions (REC), historical RECs (HREC), and controlled RECs (CREC) in the study area. The ISA was prepared in general accordance with the American Society for Testing and Materials (ASTM) International, Inc., *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13), and Caltrans' ISA procedures.

The following tasks were conducted as part of the ISA:

- *Environmental Database Review:* An environmental database search was conducted using Environmental Data Resources, Inc. (EDR) to gather government database records dated December 10, 2024. The search consisted of reviewing existing federal, state, local, tribal, and EDR proprietary environmental databases. The EDR search radius consisted of the Project Study Area and all properties up to 1.0 mile from the Project Study Area.

- *Historical Land Use Records Review:* Historical aerial photographs, topographic maps, and Sanborn fire insurance maps were reviewed.

- *Agency Records Review:* An agency records review was conducted for potential sites of concern that could have an impact on the proposed Project. Records were requested from the following agencies and were reviewed: California RWQCB – Los Angeles Region, Caltrans, and Los Angeles County Fire Department. Available records on the California Department of Toxic Substances Control (DTSC) ENVIROSTOR and California Department of Conservation, Geologic Energy Management Division (CalGEM) Wellfinder databases were also reviewed.

- *Site Reconnaissance:* On July 15, 2024, a site visit of properties within and adjoining the Project Study Area was conducted to document current land uses and observe for any indication of potential contamination issues or releases that could have an impact on the proposed Project. The site visit was limited to the exterior portions of properties and was observed from State ROW.

- *Interviews:* A telephone interview with Mr. Michael Conkle, Professional Geologist of Caltrans District 7, was conducted to obtain information on the past history of the Project Study Area. In addition, during Scoping, DTSC recommended further coordination in the event that the proposed Project may impact any areas that fall under DTSC oversight (see Appendix M, *Scoping Outreach Summary Report*). Mr. Nicholas Ta, a DTSC case manager for a State-

lead cleanup effort of a portion of the former BKK landfill, was contacted by email. As of the date of the ISA, no response has been received.

Sites of Concern

The EDR report identified 1,114 individual sites with environmental records in various databases within the search area. Accordingly, the sites that might present concerns for the proposed Project were sorted into the following general categories:

- Individual large sites with long histories of spills and releases of hazardous materials (see Figure 2.3.5-1);
- Waste to the environment, and groups of smaller sites of a similar nature that are spread out within areas that are close enough to the ROW to represent a potential for migrating contamination to have reached the ROW.

Examples of the latter group include small historical waste dumps, current and former leaking underground storage tank (LUST) sites, and current and former dry-cleaning establishments. Table 2.3.5-1 summarizes major individual sites and groups of sites that pose potential environmental concerns for the proposed Project.

Table 2.3.5-1: Summary of Findings of Adjoining and Nearby Sites and Groups

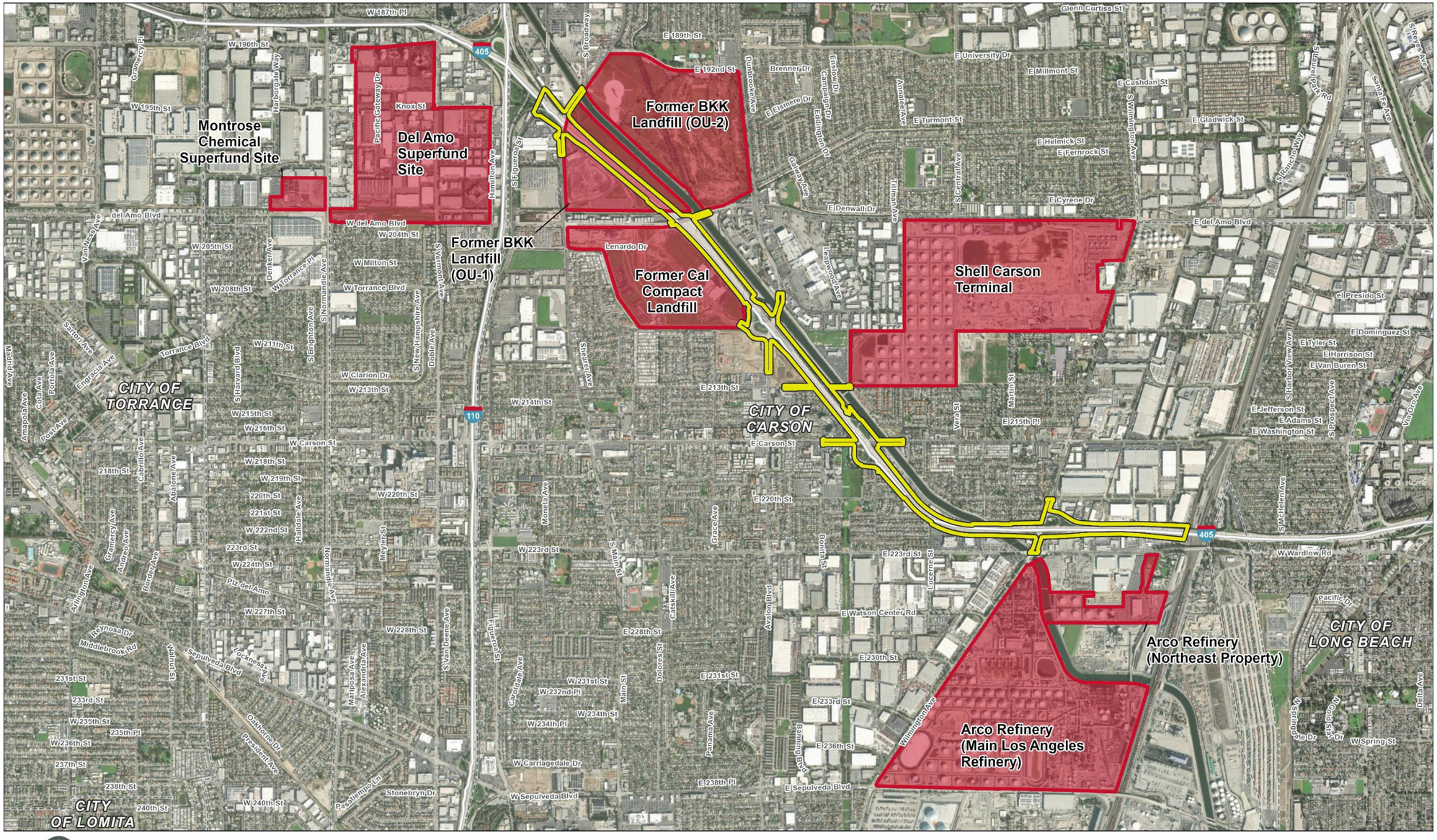
Site or Site Group	Site Information	Potential Concern(s)
Former BKK Landfill	The former BKK landfill occupies much of the areas both east and west of the State ROW in the northerly portion of the Project Study Area. This site is a former industrial waste dump. I-405 was constructed across a portion of the dump property between 1960 and 1962. There is a potential for historical industrial waste and associated soil, soil vapor, groundwater contamination, and migrating landfill gas to be located below the State ROW and present in planned excavation areas. The landfill gas is principally composed of methane, which has been generally historically controlled at the former BKK landfill. However, the potential remains for significant methane concentrations to be encountered locally in excavations on both sides of the State ROW.	Soil, soil vapor, and groundwater contamination in excavations. Methane gas in ambient air in excavations
Former Cal Compact Landfill	The former Cal Compact Landfill abuts the SB side of the State ROW on the south side of Del Amo Boulevard. This site is a former municipal and industrial waste dump. This site could be underlain by industrial waste and/or legacy soil, soil vapor, groundwater contamination, and migrating landfill gas. Soil, soil vapor, and groundwater contamination could be encountered during excavations. Methane gas could be released into ambient air during excavations.	Soil, soil vapor and groundwater contamination in excavations. Methane gas in ambient air in excavations

Site or Site Group	Site Information	Potential Concern(s)
Dominguez Channel	The Dominguez Channel parallels NB I-405 and crosses under I-405 just west of Wilmington Avenue. This channel reportedly received industrial waste discharges of all kinds during the early and middle portions of the Twentieth Century. This channel and its surrounding areas could now be underlain by legacy soil, soil vapor, and groundwater contamination. Soil, soil vapor, and groundwater contamination could be encountered during excavations.	Soil, soil vapor and groundwater contamination in excavations. Concern regarding planned partial permanent acquisitions and TCE.
Other historical waste dumps and landfills	Records indicate that many smaller waste dumps historically existed near the State ROW. As a group, these sites suggest a potential for migration of soil vapor and groundwater contaminants toward the ROW.	Soil vapor and groundwater contamination in excavations.
Del Amo Superfund Site	Former federal government-owned complex that manufactured synthetic rubber and related products for the World War II War effort. Now includes a CERCLA groundwater remedy operable unit in conjunction with the neighboring Montrose Chemical Superfund Site. A buried large-diameter liquid waste pipeline ran from the site east across the current State ROW and emptied into the Dominguez Channel. There is a potential for legacy soil vapor and groundwater contamination to have impacted the ROW.	Soil vapor and groundwater contamination in excavations.
Montrose Chemical Superfund Site	Former DDT manufacturing facility. Once the country's largest manufacturer of the pesticide DDT, this closed and dismantled facility is now undergoing cleanup under CERCLA as a Superfund site. It shares a joint CERCLA groundwater remedy operable unit with the neighboring Del Amo Superfund Site. Legacy groundwater contamination may have migrated toward the ROW in the past.	Groundwater contamination in excavations.
Shell Carson Terminal	The Shell Carson Terminal is the westerly portion of the former Shell Dominguez facility, a very large historical petrochemical refining complex dating back to the 1920s. The refinery complex is now decommissioned, but the terminal remains one of the largest suppliers of refined petroleum products in Southern California. The terminal complex is located a short distance from the State ROW on the east side of the Dominguez Channel and has had a history of spills and releases. It now has an ongoing containment system to capture floating LNAPL in the underlying groundwater. Despite the ongoing remediation, the potential exists for legacy groundwater and soil vapor contamination to have impacted the ROW.	Soil vapor and groundwater contamination in excavations.

Site or Site Group	Site Information	Potential Concern(s)
ARCO Tesoro Refinery	ARCO Products Company operates three refinery facilities in the City of Carson, of which two are close to the Project Study Area. Multiple wells have been installed to monitor groundwater quality. Environmental assessment and site investigation are conducted to evaluate groundwater contamination level. Analytical results indicate both dissolved phase and free phase hydrocarbon product and VOCs are detected in monitoring wells adjacent to the north perimeter. Even though LNAPL recovery/groundwater remediation activity has been carried out for years, the potential exists for legacy groundwater contamination to have impacted the ROW.	Groundwater contamination in excavations.
Buried Pipelines	The area surrounding the Project Study Area is characterized by a dense concentration of petrochemical refineries and petroleum product consuming industries. Therefore, the area has an abundance of buried product pipelines. These include active and abandoned product pipelines and abandoned liquid waste pipelines. Many of these cross the State ROW at known and unknown locations. The possible presence of buried pipelines poses a potential hazard to construction as well as a potential for undocumented legacy soil, soil vapor, and groundwater contamination.	Physical hazard if present in excavations, and potential for soil, soil vapor and groundwater contamination in excavations.
LUST sites	The EDR records search identified 78 LUST sites within the ASTM search distance. Of these, 14 are close enough to the ROW to be considered associated with the “target property.” Forty additional LUST sites are within 1/8th mile of the ROW. An additional 21 UST sites and 51 historical UST sites are within 1/8th mile of the ROW. There is a potential for legacy soil vapor and groundwater contamination to have impacted the ROW.	Soil vapor and groundwater contamination in excavations.
Dry cleaner sites	The EDR records search identified 8 dry cleaners within 1/8 mile of the ROW and another 14 within 0.25 mile. An additional two historical dry cleaners were identified within 1/8 mile. Dry cleaning establishments commonly have VOC contamination (mainly PCE and degradation products) in soil, soil vapor, and groundwater. PCE is highly mobile in soil vapor and groundwater; thus, a potential exists for impacts on the ROW from these sources.	Soil vapor and groundwater contamination in excavations.

Site or Site Group	Site Information	Potential Concern(s)
Miscellaneous manufacturing and other industrial sites	Within the ASTM search distances outside the Project Study Area there are many current and former small industrial sites that used various hazardous materials or generated hazardous waste in their processes. This group of facilities is a potential concern because some located relatively close to the Project Study Area may have undiscovered chemical spills and releases of mobile chemicals that could potentially affect Project construction.	Soil vapor and groundwater contamination in excavations.
Pole-mounted electrical transformers	Pole-mounted transformers may have historically used transformer oil that contained PCB, a toxic substance. Although all utilities have replaced the oil with non-PCB oil, it is possible that previous spills or leaks may have impacted soil in the vicinity of these locations. A total of nine pole-mounted transformer locations were found in relatively close proximity to the ROW.	Soil contamination (PCBs) in areas of soil disturbance

Source: (Kroner Environmental Services, Inc. 2024)
Notes:
ASTM=American Society for Testing and Materials; CERCLA=Comprehensive Environmental Response; Compensation and Liability Act; Dichlorodiphenyltrichloroethane=DDT; EDR=Environmental Database Review; I-405=Interstate 405; LNAPL=light non-aqueous phase hydrocarbons; LUST=Leaking underground storage tank; NB=northbound; PCB=polychlorinated biphenyls; PCE=perchloroethylene; ROW=right-of-way; SB=southbound; TCE=temporary construction easement; UST=underground storage tank; VOC=volatile organic compound



Source: (Kroner Environmental Services, Inc. 2024)

Figure 2.3.5-1: Location of Major Individual Sites in the Vicinity of the Project Study Area

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Other Conditions of Concern

Aerially Deposited Lead

Due to historic use of lead in gasoline, lead may exist in soils near heavily traveled roadways. This specific type of lead is referred to as aerially deposited lead (ADL). The presence of ADL in soils does not necessarily pose a threat in its current state. However, it is considered to have the potential to impact the environment and workers on-site during construction activities and may also affect disposal methods if the soils cannot be reused and must instead be moved off site.

Treated Wood Waste

Wooden utility poles, road signs, piles, and railroad ties, as well as wood used to support metal beam guardrails, may contain preserving chemicals that protect against insects and fungal decay. These chemicals, which may be hazardous, include, but are not limited to, creosote and pentachlorophenol, as well as treatment compounds, such as copper azole, alkaline copper quaternary, chromated copper arsenate, and other associated compounds. Soil surrounding treated wood may also contain creosote and pentachlorophenol at elevated levels.

Asbestos-Containing Material

Asbestos was commonly used in many building materials prior to 1978 and may have been used up until the early 1980s. Asbestos-containing materials (ACM) include fireproofing, acoustic ceiling material, transite pipe, roofing materials, thermal insulation, support piers, expansion joint material in bridges, asphalt, concrete, and other building materials. It is of primary concern when it is friable (i.e., material that can be easily crumbled). During demolition, if not properly identified and mitigated, asbestos fibers could become airborne. There is a potential for ACM to be present in buildings and structures located within the Project Study Area.

Lead-Based Paint

Regulatory actions restricted the amount of lead in paints and primers manufactured after January 1, 1978, and limited the uses of paints in areas where consumers would have direct access to painted surfaces in nonindustrial facilities. Prior to 1978, lead-based paint (LBP) may have been used in construction or maintenance of building and road structures, including bridges. There is a potential for LBP to be present in building structures located within the Project Study Area.

Thermoplastic Striping

Historically, chrome yellow (containing lead chromate) was used as the primary yellow pigment in traffic lane paint and thermoplastic striping. Lead chromate varied from approximately 3.5 percent by weight in yellow waterborne paint to 25 percent by weight in yellow epoxy. In California, lead chromate traffic striping was phased out in waterborne traffic paint between 1997 and 2000 and in thermoplastic striping by 2004.

The concentrations of lead chromate in the thermoplastic striping applied to roadways could classify waste as hazardous. Given the recent phase-out of lead chromate containing thermoplastic striping, it is generally assumed that existing yellow thermoplastic striping associated with roadway markings within a given Caltrans construction project area contains lead and chromium, unless it has been demonstrated that lead or chromium is not present (e.g., analytical data or definitive identification of the striping's source material).

Naturally Occurring Asbestos

No geologic features normally associated with naturally occurring asbestos (i.e., serpentine rock or ultramafic rock near fault zones) are present in or near the Project Study Area.

2.3.5.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, no construction activities would occur. Therefore, no short-term direct or indirect impacts on hazardous waste or materials would occur as a result of the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

During construction, Alternative 2 would require the use of hazardous materials (e.g., solvents, paints, oils, fuels) and would also generate hazardous waste (e.g., removal or modification of structures). Solid waste would be handled in accordance with Caltrans Standard Specification 14-10. The handling, storing, and disposal of hazardous waste and materials would be conducted in accordance with Caltrans Standard Special Provision 14-11.03, Hazardous Waste Management.

As described further below, the ISA identified four RECs and numerous other environmental conditions associated with the acquisition of ROW and the transportation corridor. The following sites were identified as RECs in the ISA (Kroner Environmental Services, Inc. 2024), which are described further in Table 2.3.5-1:

- Former BKK Landfill
- Former Cal Compact landfill
- Dominguez Channel
- Current and former buried hazardous material and liquid waste pipelines crossing the ROW at uncertain locations

In addition to the RECs discussed above, environmental conditions that do not rise to the level of RECs have also been identified in connection with sites both within the

Project Study Area and at various distances outside the Project Study Area. These conditions arise from the potential for contaminants to have migrated in soil vapor or groundwater to the Project Study Area. Under Alternative 2, these conditions and/or sites include the following:

- Historical hazardous material incidents within the Project Study Area
- Pole-mounted electrical transformer locations adjacent to the Project Study Area
- Other landfills and waste dumps
- The Del Amo and Montrose Superfund Site
- The Shell Carson Terminal
- Current and former LUST sites
- Current and former dry-cleaning facilities
- Miscellaneous manufacturing and other industrial sites

ADL from the historical use of leaded gasoline exists along roadways throughout California. There is the likely presence of soils with elevated concentrations of lead as a result of ADL on the state highway system ROW within the limits of the Project alternatives. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed under the July 1, 2016, ADL Agreement (Agreement) between Caltrans and the California DTSC. This Agreement allows such soils to be safely reused within the Project limits as long as all requirements of the Agreement are met (see Project Feature **PF-HW-1** in Section 1.4, *Project Alternatives*). The long history of I-405 going back to its early days as the San Diego Freeway suggest the likely presence of the following conditions that prompt further investigation or management under Caltrans SSPs:

- ADL within planned areas of soil disturbance
- Elevated arsenic and other chemicals in soil from the use of weed-killing agents
- Potential soil contamination in areas of historical hazardous materials incidents
- Potential groundwater contaminants in dewatering effluent
- ACM and LBP in and on structures that would require modification
- Lead in yellow striping and other pavement markings
- Hazardous chemicals in treated wood and wood wastes from removing existing guardrail supports, signposts, and utility poles

Pursuant to Measure **HAZ-1**, a site investigation (SI) would be conducted to investigate the presence of chemicals of concern in all areas of planned soil disturbance during the PS&E Phase. A SI Work Plan would be prepared and submitted to Caltrans District 7 for review and approval. The SI would consider the nature and known locations of historical spills and releases including, but not limited to, the following offsite sources:

- Del Amo Superfund and Montrose Chemical Superfund Sites
- Shell Carson Terminal
- ARCO Tesoro Refinery

The SI would include soil vapor sampling and testing in all planned confined excavation areas (e.g., retaining wall and bridge foundations and sampling) and testing for landfill gas constituents (methane, hydrogen sulfide, etc.) in all planned confined excavation areas in the vicinity of the former BKK and Cal Compact Landfills.

The SI would also include groundwater sampling and testing in all excavation areas deeper than approximately 20 feet below adjacent street grade and testing for polychlorinated biphenyls (PCB) in soil close to pole-mounted electrical transformers (Project Feature **PF-HW-3**). Measure **HAZ-2** would be implemented requiring ACM and LBP surveys for all structures that would be modified by the proposed Project under Alternative 2. Work on the Dominguez Channel Bridge and Avalon Boulevard Undercrossing would be conducted in accordance with Caltrans Standard Specification 14-11.13, which includes specifications related to disturbing existing paint systems on bridges, and Caltrans Standard Special Provision 14-11.16, which includes specifications for handling asbestos, pending the results of the ACM and LBP surveys. Pursuant to Measure **HAZ-3**, all existing pipelines that cross or come near the Project Study Area would be further identified and investigated for potential contamination and leakage. The SI could also be conducted with ADL investigations in all areas of planned soil disturbance (see Measure **HAZ-4**). Pending the results of the ADL investigations, soils would be handled in accordance with Caltrans Standard Special Provision 14-11.08. Yellow traffic striping and pavement markings would be handled in accordance with Caltrans Standard Specification 14-11.12. Per the soil reuse agreement, a Lead Compliance Plan would be prepared for worker safety. In addition, treated wood waste would be handled in accordance with Caltrans Standard Special Provision 14-11.14.

Alternative 2 would require the acquisition of ROW for widening the Dominguez Channel Bridge. There is a strong likelihood of legacy contamination in channel sediment and in soil, soil vapor, and groundwater that may have migrated beneath the ROW. Given these factors, the Project risk associated with the acquisition parcels under Alternative 2 is judged to be “high” according to Chapter 10 of Caltrans Standard Environmental Reference. In accordance with Measure **HAZ-5**, all acquisitions would be investigated in accordance with Caltrans’ real estate acquisition requirements.

Based on the results of the SI, the construction contractor, in coordination with Caltrans District 7, would be required to identify additional protective measures prior to starting

construction to protect the environment and worker health and safety, which would include, at a minimum, the preparation of a Health and Safety Plan, Construction Contaminant Management Plan, and Construction Contingency Plan (Project Feature **PF-HW-5**). Should unanticipated asbestos or other hazardous substance be identified during construction, all work would stop in the area of discovery in accordance with Caltrans Standard Specification 14-11.02. Further, the proposed Project under Alternative 2 would avoid building over any plugged and abandoned oil or gas well where feasible (Project Feature **PF-HW-6**). With the incorporation of Measures **HAZ-1** through **HAZ-5**, no short-term direct or indirect adverse impacts related to hazardous waste and materials would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Similar to Alternative 2, Alternative 3 would require the use of hazardous materials and would also generate hazardous waste. The handling, storing, and disposal of hazardous waste and materials would be conducted in accordance with Caltrans Standard Special Provision 14-11.03, Hazardous Waste Management.

Alternative 3 would have the same RECs as Alternative 2. In addition, the likely presence of the following would require further investigation or management under Caltrans SSPs:

- ADL within planned areas of soil disturbance.
- Elevated arsenic and other chemicals in soil from the use of weed-killing agents.
- Potential soil contamination in areas of historical hazardous materials incidents
- Potential groundwater contaminants in dewatering effluent
- Lead in yellow striping and other pavement markings within City ROW.
- Hazardous chemicals in treated wood and wood wastes from removing existing guardrail supports, signposts, and utility poles.

As with Alternative 2, Project Features **PF-HW-1** through **PF-HW-6** would be implemented. An SI would also be conducted to investigate the presence of chemicals of concern in all areas of planned soil disturbance during the PS&E Phase (see Measure **HAZ-1**). An SI Work Plan would be prepared and submitted to Caltrans for review and approval prior to conducting the investigations. The SI Work Plan would consider the nature and known locations of historical spills and releases. The SI would include soil sampling and appropriate testing for metals, total petroleum hydrocarbons, volatile organic compounds (VOC), and semi-VOCs if soil disturbance is planned in areas of historical hazmat incidents. Pursuant to Measure **HAZ-3**, all existing pipelines that cross or come near to the Project Study Area would be further identified and investigated for potential contamination and leakage. The SI could also be conducted

with ADL investigations in all areas of planned soil disturbance (see Measure **HAZ-4**). Per the soil reuse agreement, a Lead Compliance Plan is required for worker safety.

No permanent acquisitions would be required under Alternative 3. Therefore, Measure **HAZ-5** would not be implemented and ACM and LBP surveys pursuant to Measure **HAZ-2** are not required. With the incorporation of Measure **HAZ-1,** Measure **HAZ-3,** and Measure **HAZ-4**, short-term direct or indirect adverse impacts related to hazardous waste and materials would not occur as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

The No-Build Alternative would maintain the current configuration of I-405, and the proposed Complete Streets and TSM/TDM elements would not be implemented. As a result, hazardous waste and materials would not be impacted. Routine maintenance activities would continue to follow applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous materials and waste. Therefore, no long-term direct or indirect impacts on hazardous waste or materials would occur as a result of the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would add auxiliary lanes on I-405 and implement TSM/TDM and Complete Streets elements. Routine maintenance activities would continue to follow applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous materials. Therefore, no long-term direct or indirect adverse impacts would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Alternative 3 would implement TSM/TDM and Complete Streets elements. Similar to Alternative 2, routine maintenance activities would continue to follow applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous materials. Therefore, no long-term direct or indirect adverse impacts would occur as a result of the proposed Project under Alternative 3.

2.3.5.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are proposed:

Measure HAZ-1 During the Plans, Specifications, and Estimates (PS&E) Phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that a Site Investigation (SI) will be completed for soil and groundwater that will be disturbed by the Project. The SI will assess the presence of landfill gas constituents (methane, hydrogen sulfide, etc.),

polychlorinated biphenyls, metals, petroleum hydrocarbons, volatile organic compounds (VOC), and semi-VOCs.

Measure HAZ-2 During the Plans, Specifications, and Estimate (PS&E) phase, prior to any demolition or disturbance activities, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that asbestos-containing material (ACM) and lead-based paint (LBP) surveys will be conducted for all structures that will be modified by the proposed Project under Alternative 2.

Measure HAZ-3 During the Plans, Specifications, and Estimate (PS&E) phase, prior to any demolition or disturbance activities, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will further evaluate and identify all existing pipelines that cross or come near to the Project Study Area.

Measure HAZ-4 During the Plans, Specifications, and Estimate (PS&E) phase, prior to any demolition or disturbance activities, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that aerially deposited lead (ADL) investigation be conducted in all areas of planned soil disturbance.

Measure HAZ-5 During the Plans, Specifications, and Estimate (PS&E) phase, prior to any demolition or disturbance activities, the Los Angeles County Metropolitan Transportation Authority's (Metro) Design Engineer, or designated contractor, will ensure that site investigations (SI) are conducted for property acquisition parcels in accordance with California Department of Transportation (Caltrans) real estate acquisition requirements.

The notice for the Draft EIR/EA will disclose that the proposed Project is located on and/or within the immediate vicinity of a site enumerated under Section 65962.5 of the Government Code ("Cortese" list) per CEQA Guidelines Section 15087. The notice will also include the information in the Hazardous Waste and Substances Statement required under subsection (f) of Section 65962.5.

For Alternative 2, it is estimated that site investigations would cost approximately $1.97 million and take up to 12 months to complete during PS&E. Pending the results of future investigations, abatement is estimated to cost approximately $6.2 million and could potentially add 3 to 4 months to the Project schedule.

Alternative 2 includes the acquisition of private property. It is understood that if an SI identifies site contamination; additional avoidance, minimization, and/or abatement measures would be determined at that time and property owners would be legally responsible for the cleanup of contamination on their private properties. If an SI determines that contamination is present that cannot be abated, measures to avoid the

acquisition or temporary or permanent easement of the property may be implemented to avoid encountering the area of contamination during construction or maintenance activities. If acquisition limits cannot be adjusted, minimization measures may include indemnification, reduction in price, or acquisition as highway easement instead of in fee.

Acquisition of contaminated property must comply with all applicable Caltrans directives, including the Caltrans Project Delivery Directive PD-02-R1. If contamination is present when property is to be transferred to Caltrans, the impact of this contamination must be evaluated, and the transfer may be contingent upon acceptance of liability by the Caltrans Chief Engineer. Property containing or potentially containing contamination will only be acquired or accepted if the benefits and risks are documented, available risk reduction mechanisms are employed, and a policy exception is approved by Caltrans management using criteria established by the Caltrans Chief Engineer.

For Alternative 3, it is estimated that site investigations would cost approximately $0.40 million and take up to 6 months to complete during PS&E. Pending the results of future investigations, abatement is estimated to cost approximately $2.1 million and could potentially add 2 to 3 months to the Project schedule.

2.3.6 Air Quality

2.3.6.1 Regulatory Setting

The FCAA, as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by the USEPA and the California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). The NAAQS and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under NEPA. In addition to this environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

Conformity

The conformity requirement is based on the FCAA Section 176(c), which prohibits the USDOT and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to State Implementation Plan for attaining the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS. In California this includes carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and particulate matter (PM_{10} and $PM_{2.5}$). Regional conformity is based on emission analysis of RTP and FTIP that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the State Implementation Plan (SIP) are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), FHWA, and Federal Transit Administration make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained.

Project-level conformity is achieved by demonstrating that:

- The project comes from a conforming RTP and FTIP.

- The project has a design concept and scope that has not changed significantly from those in the RTP and Transportation Improvement Program. "Design concept" means the type of facility that is proposed, such as a freeway or arterial highway. "Design scope" refers to those aspects of the project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the project.

- Project analyses have used the latest planning assumptions and USEPA-approved emissions models.

- In particulate matter areas, the project complies with any control measures in the SIP.

Additional analyses (known as hot-spot analyses) may be required for projects located in CO and particulate matter nonattainment or maintenance areas to examine localized air quality impacts.

2.3.6.2 Affected Environment

This section is based on the proposed Project's *Air Quality Report* (HDR 2026), which was completed in February 2026.

The proposed Project is located within the South Coast Air Basin (SCAB or Basin), which is a 6,600-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The South Coast Air Quality Management District (SCAQMD) administers the Basin, which includes Orange County; the non-desert parts of Los Angeles, Riverside, and San Bernardino Counties; and the San Gorgonio Pass area of Riverside County.

Climate, Meteorology, and Topography

Meteorology (weather) and terrain can influence air quality. Certain weather parameters are highly correlated to air quality, including temperature, the amount of sunlight, and the type of winds at the surface and above the surface.

The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of its perimeter. During the spring and early summer, pollution is typically blown out of the Basin through mountain passes or lifted by warm, vertical currents adjacent to mountain slopes. The vertical dispersion of air pollutants in the Basin is limited by temperature inversions in the atmosphere close to Earth's surface. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days with no inversion or high wind speeds, ambient air pollutant concentrations are lowest. During periods with low inversions and low wind speeds, air pollutants become more concentrated in urbanized areas with pollution sources of great magnitude.

The Long Beach Airport climatological station, maintained by the National Oceanic and Atmospheric Administration, is located near the Project site and is representative of

meteorological conditions near the proposed Project. Figure 2.3.6-1 shows a wind rose illustrating the predominant wind patterns near the proposed Project. The climate of the Project area is generally Mediterranean in character, with cool winters (average 56 °Fahrenheit [F] in January) and warm, dry summers (average 73 °F in July). Temperature inversions are common, affecting localized pollutant concentrations in the winter and enhancing O_3 formation in the summer. Mountains ranging from 1,500 to more than 10,000 feet in altitude tend to trap pollutants in the region by limiting air flow. Annual average rainfall is 12 inches (at Long Beach airport), mainly falling during the winter months.

Criteria Pollutants and Attainment Status

The FCAA requires the USEPA to set NAAQS for six criteria air contaminants: O_3, particulate matter, CO, NO_2, lead (Pb), and sulfur dioxide (SO_2). It also permits states to adopt additional or more protective air quality standards if needed. California has set standards for certain pollutants. Table 2.3.6-1 documents the current air quality standards. Table 2.3.6-2 summarizes the sources and health effects of the six criteria pollutants and pollutants regulated in the state of California.

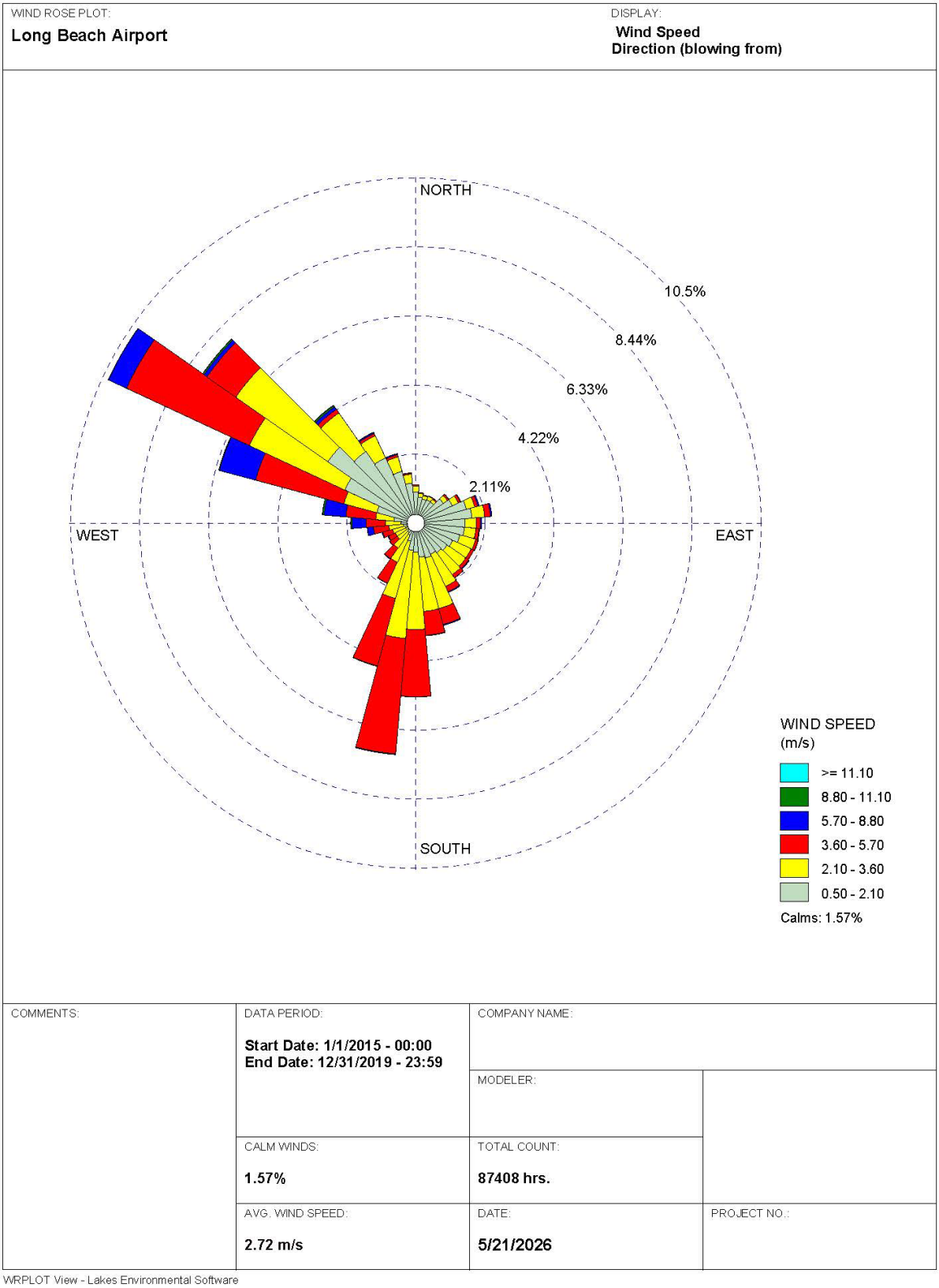


Figure 2.3.6-1: Predominant Wind Patterns Near the Project

Table 2.3.6-1: State and Federal Criteria Air Pollutant Standards and Status

Pollutant	Averaging Time	State Standard [2]	Federal Standard [3]	State Project Attainment Status	Federal Project Area Attainment Status
O_3 [4]	1 hour	0.09 ppm [5]	N/A	Nonattainment	N/A
O_3	8 hours	0.070 ppm	0.070 ppm (4th highest in 3 years)	Nonattainment	Nonattainment - Extreme
CO [6]	1 hour	20 ppm	35 ppm	Attainment	Attainment - Maintenance
CO	8 hours	9.0 ppm	9 ppm	Attainment	Attainment - Maintenance
CO	8 hours (Lake Tahoe)	6 ppm	N/A	Attainment	N/A
PM_{10} [7]	24 hours	50 µg/m³ [8]	150 µg/m³ (expected number of days above standard < or equal to 1)	Nonattainment	Attainment - Maintenance
PM_{10}	Annual	20 µg/m³	N/A	Nonattainment	N/A

[2] California standards for ozone (O_3), carbon monoxide (CO; except 8-hour Lake Tahoe), sulfur dioxide (SO_2; 1 and 24 hour), nitrogen dioxide (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 ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[3] Federal standards (other than O_3, particulate matter, 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 µg/m³ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the USEPA for further clarification and current national policies.

[4] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm. Transportation conformity applies in newly designated nonattainment areas for the 2015 national 8-hour O_3 primary and secondary standards on and after August 4, 2019 (see Transportation Conformity Guidance for 2015 Ozone NAAQS Nonattainment Areas).

[5] ppm = parts per million

[6] Transportation conformity requirements for CO no longer apply after June 1, 2018 for the following California Carbon Monoxide Maintenance Areas (see USEPA CO Maintenance Letter).

[7] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m³ to 12 µg/m³. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[8] µg/m³ = micrograms per cubic meter.

Pollutant	Averaging Time	State Standard [2]	Federal Standard [3]	State Project Attainment Status	Federal Project Area Attainment Status
$PM_{2.5}$ [9]	24 hours	N/A	35 µg/m^3 [7]	N/A	Nonattainment - Serious
$PM_{2.5}$	Annual	12 µg/m^3	9.0 µg/m^3	Nonattainment	Nonattainment - Serious
NO_2	1 hour	0.18 ppm	0.100 ppm [10]	Attainment	Attainment - Maintenance
NO_2	Annual	0.030 ppm	0.053 ppm	Attainment	Attainment - Maintenance
SO_2 [11]	1 hour	0.25 ppm	0.075 ppm (99th percentile over 3 years)	Attainment	Attainment - Unclassified
SO_2	3 hours	N/A	0.5 ppm [12]	N/A	Attainment - Unclassified
SO_2	24 hours	0.04 ppm	0.14 ppm (for certain areas)	Attainment	Attainment - Unclassified
SO_2	Annual	N/A	0.030 ppm (for certain areas)	N/A	Attainment - Unclassified
Lead (Pb) [13]	Monthly	1.5 µg/m^3	N/A	Attainment	N/A
Pb	Calendar Quarter	N/A	1.5 µg/m^3 (for certain areas)	N/A	N/A

[9] The 65 µg/m^3 $PM_{2.5}$ (24-hour) NAAQS was not revoked when the 35 µg/m^3 NAAQS was promulgated in 2006. The 15 µg/m^3 annual $PM_{2.5}$ standard was not revoked when the 12 µg/m^3 standard was promulgated in 2012. Therefore, for areas designated nonattainment or nonattainment/maintenance for the 1997 and or 2006 $PM_{2.5}$ NAAQS, conformity requirements still apply until the NAAQS are fully revoked.

[10] Final 1-hour NO_2 NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause redesignation to nonattainment in some areas after 2016.

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

[12] Secondary standard, the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.

[13] The California ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants (TACs). Diesel exhaust particulate matter is part of PM_{10} and, in larger proportion, $PM_{2.5}$. Both the California ARB and USEPA have identified lead (Pb) and various organic compounds that are precursors to O_3 and $PM_{2.5}$ as TACs. There are no exposure criteria for adverse health effect due to TACs, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.

Pollutant	Averaging Time	State Standard [2]	Federal Standard [3]	State Project Attainment Status	Federal Project Area Attainment Status
Pb	Rolling 3-month average	N/A	0.15 µg/m^3 [14]	N/A	N/A
Sulfates	24 hours	25 µg/m^3	N/A	Attainment	N/A
H_2S	1 hour	0.03 ppm	N/A	Unclassified	N/A
Visibility Reducing Particles [15]	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	N/A	Unclassified	N/A
Vinyl Chloride [13]	24 hours	0.01 ppm	N/A	Unclassified	N/A

Notes:
Adapted from the California ARB Air Quality Standards chart
Greenhouse Gases and Climate Change: Greenhouse gases do not have concentration standards for that purpose. Conformity requirements do not apply to greenhouse gases.

[14] Lead NAAQS are not considered in Transportation Conformity analysis.
[15] In 1989, the California ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Table 2.3.6-2: State and Federal Criteria Air Pollutant Effects and Sources

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Ozone (O_3)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic volatile organic compounds (VOC) may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (reactive organic gas [ROG] or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
Carbon Monoxide (CO)	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Respirable Particulate Matter (PM_{10})	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic and other aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.
Fine Particulate Matter ($PM_{2.5}$)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic and other aerosol and solid compounds are part of $PM_{2.5}$	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.
Nitrogen Dioxide (NO_2)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
Sulfur Dioxide (SO_2)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
Lead (Pb)	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Sulfates	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.
Hydrogen Sulfide (H_2S)	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.
Visibility Reducing Particles (VRP)	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the FCAA, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.
Vinyl Chloride	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes

CO=carbon monoxide; FCAA=Federal Clean Air Act; H_2S=hydrogen sulfides; NO_2=nitrogen dioxide; NOx =nitrogen oxides; O_3=ozone; Pb=lead; $PM_{2.5}$=fine particulate matter; PM_{10}=respirable particulate matter; ROG=reactive organic gas; sulfur dioxide=SO_2; SOx=sulfur oxides; VOC=volatile organic compounds; VRP= visibility reducing particles

State Implementation Plans

The FCAA requires areas not attaining the NAAQS to develop and implement an emission reduction strategy that will bring the area into attainment in a timely manner. The SCAQMD SIPs are developed within their Air Quality Management Plan (AQMP). The 2022 AQMP was adopted by the SCAQMD Governing Board on December 2, 2022 (SCAQMD, 2022). It incorporates the latest scientific and technological information and planning assumptions, including the 2020–2045 RTP/SCS and updated emission inventory methodologies for various source categories. The 2022 AQMP is focused on attaining the 2015 8-hour O_3 standard of 70 parts per million (ppm) and builds upon the emission reductions strategies stated in previous AQMPs, such as the 2016 AQMP, which focused on attaining the 1997 8-hour and 2008 8-hour O_3 standards, as well as $PM_{2.5}$ standards.

The 2015 8-hour O_3 standard is the most stringent standard to date, and an attainment date of 2037 has been established for the Basin. The 2022 AQMP focuses primarily on reducing nitrogen oxides (NOx) emissions as it is the key pollutant in controlling the formation of O_3. The 2022 AQMP states that NOx emissions would need to be reduced by 67 percent by 2037 to meet the standard. Emission reduction strategies to meet the standard will build upon already strict regulations for stationary and tailpipe sources and will also rely on adoption and implementation of zero emission technologies and low-NOx technologies.

Monitoring Stations

The nearest air quality monitoring station is SCAQMD's Long Beach-Signal Hill station, which is located 6.8 miles southeast of the Project Study Area. Figure 2.3.6-2 shows the Long Beach-Signal Hill monitoring station in relation to the Project Study Area. The Long Beach-Signal Hill station monitors for O_3, NO_2, CO, and particulate matter (PM_{10} and $PM_{2.5}$).

Sensitive Receptors

On the basis of research showing that the zone of greatest concern near roadways is within 500 feet (or 150 meters), sensitive receptors within that zone have been identified and are documented in Table 2.3.6-3. Given the length of the Project Study Area and its potential to influence receptors at greater distances, sensitive receptors within 2,000 feet are also listed. Figure 2.3.6-3 shows the locations of sensitive receptors relative to the Project Study Area, including Andrew Carnegie STEAM Academy, Victoria Golf Course, and residences, some with potential daycares. Residential receptors are identified by red shading in Figure 2.3.6-3.

Table 2.3.6-3: Sensitive Receptors Located within 500 Feet of the Project Study Area

Receptor	Description	Distance Between Receptors and Project (feet)
Residential Uses	Residence some with Home Daycare	50 to 2,000
Andrew Carnegie STEAM Academy	Middle School	550
Victoria Golf Course	Recreation Area	650

Source: (HDR 2026)

Assembly Bill 617

AB 617 communities are formally approved by the California ARB. These are communities that have been disproportionately impacted by air pollution. The Community Air Protection Program also identifies priority communities for each air district, referred to as Consistently Nominated Communities, which are based on recommendations submitted to California ARB. California ARB completed Blueprint 2.0 in 2023, which is California ARB's Statewide Strategy to reduce emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden (California ARB 2023). To date, only 19 communities have been selected to participate in the AB 617 program in California. The Project Study Area is within the Wilmington, Carson, West Long Beach community, which is an AB 617 Selected Community within the Community Emissions Reduction Program with a Community Air Monitoring Plan (California ARB n.d.).

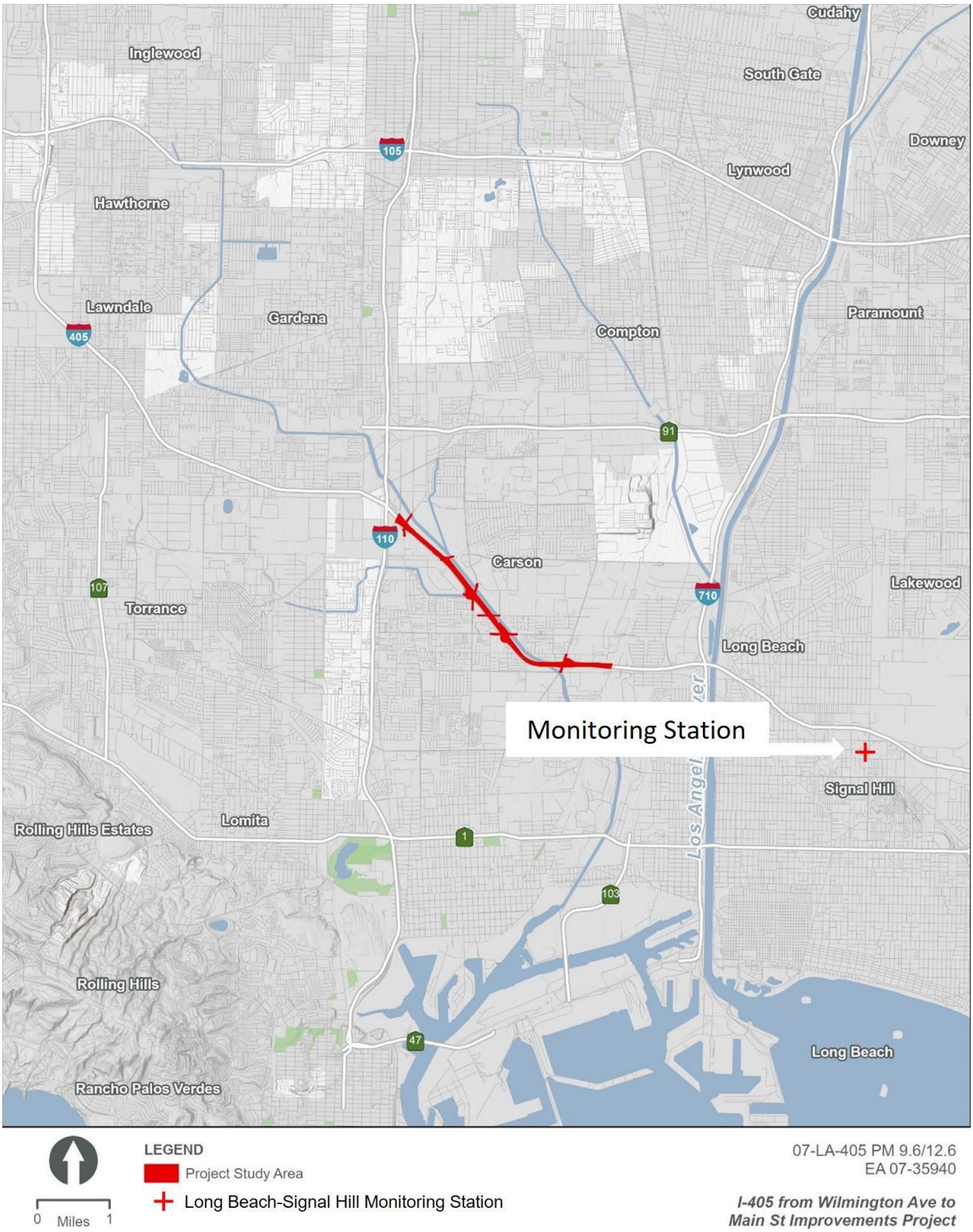
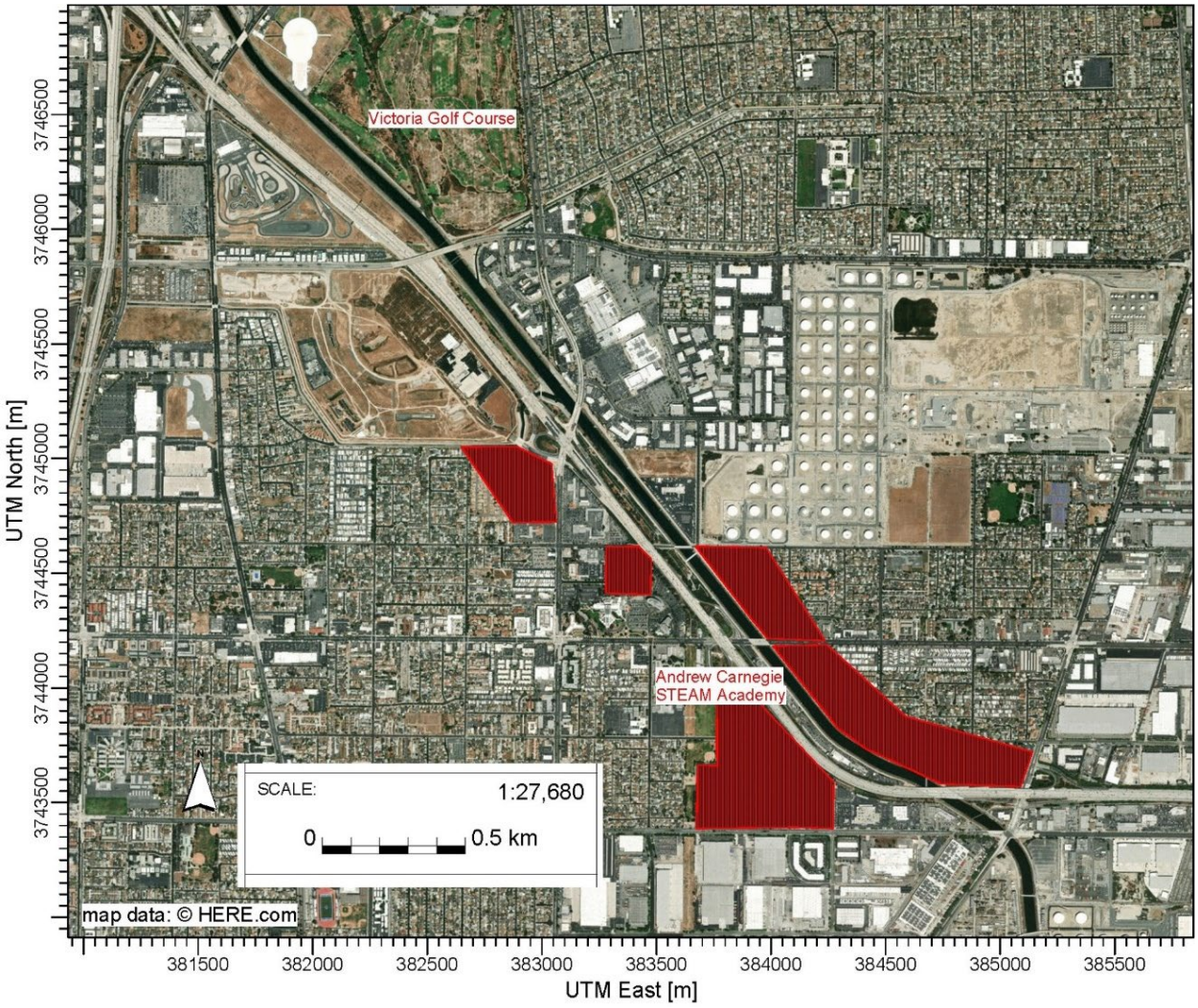


Figure 2.3.6-2: Map of Air Quality Monitoring Stations



Source: (HDR 2026)

Figure 2.3.6-3: Sensitive Receptors Located Near the Project Study Area

2.3.6.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

No improvements would occur under Alternative 1. Therefore, no direct or indirect impacts on air quality would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

The length of the Project construction period is anticipated to last up to approximately 2 years, with construction beginning around December 2028. Construction activities under Alternative 3 would be considerably less intensive than Alternative 2.

Construction Conformity

Construction activities will not last for more than 5 years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis (40 CFR 93.123[c][5]).

Short-Term Emissions

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Emissions from construction equipment also are expected and would include CO, NOx, VOC, directly emitted particulate matter (PM_{10} and $PM_{2.5}$), and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from nitrogen oxides and volatile organic compounds in the presence of sunlight and heat.

Site preparation and roadway construction typically involves clearing, cut-and-fill activities, grading, removing or improving existing roadways, building bridges, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. These activities could temporarily generate enough particulate matter and small amounts of CO, SO_2, NOx, and VOC to be of concern. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site could deposit mud on local streets, which could be an added source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Construction activities for large development projects are estimated by the USEPA to add 1.2 tons of fugitive dust per acre of soil disturbed per month of activity. If water or

other soil stabilizers are used to control dust, the emissions can be reduced by up to 50 percent. Caltrans' Standard Specifications (Section 14) on dust minimization require use of water or dust palliative compounds and would reduce potential fugitive dust emissions during construction.

In addition to dust-related PM_{10} emissions, heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate CO, SOx, NOx, VOC, and some soot particulate (PM_{10} and $PM_{2.5}$) in exhaust emissions. If construction activities were to increase traffic congestion in the area, carbon monoxide and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

SO_2 is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Under California law and California ARB regulations, off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel (not more than 15 ppm sulfur); therefore, SO_2-related issues due to diesel exhaust will be minimal.

Some phases of construction, particularly asphalt paving, may result in short-term odors in the immediate area of each paving site(s). Such odors would quickly disperse to below detectable levels as distance from the site(s) increases.

Most of the construction impacts on air quality are short-term in duration; and therefore, would not result in long-term adverse conditions. Implementation of the following standardized measures, some of which may also be required for other purposes such as stormwater pollution control, would reduce any air quality impacts resulting from construction activities:

- The construction contractor must comply with Caltrans' Standard Special Provision in Section 14 (Measure **AQ-1**).
    - Section 14 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
    - Section 14 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are described in Section 18.

- Water or dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions (Measure AQ-2). Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emissions or at the right of way line, depending on local regulations.

- Soil binder will be spread on any unpaved roads used for construction purposes, and on all Project construction parking areas (Measure PF-AQ-3).

- Trucks will be washed as they leave the right-of-way as necessary to control fugitive dust emissions and must be consistent with the requirements of Section 13 (Measure AQ-4).

- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114 (Measure AQ-5).

- A dust control supervisor will be identified to ensure compliance with all dust control measures, as required under SCAQMD Rule 403 requirements for a large operation, (Measure AQ-6).

- Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly (Measure AQ-7).

- Environmentally sensitive area-like areas or their equivalent will be established near sensitive air receptors. Within these areas, construction activities involving the extended idling of diesel equipment or vehicles will be prohibited, to the extent feasible (Measure AQ-8).

- Track-out reduction measures, such as gravel pads at Project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used (Measure AQ-9).

- All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust (particulate matter) during transportation (Measure AQ-10).

- Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to decrease particulate matter (Measure AQ-11).

- To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times (Measure AQ-12).

- Mulch will be installed or vegetation planted as soon as practical after grading to reduce windblown particulate in the area (Measure AQ-13).

Construction emissions were estimated for the Build Alternatives using the California Emission Estimator Model (CalEEMod). Project-specific scheduling, Project site, and sitework assumptions were used as inputs for CalEEMod. Based on the Project-specific user supplied data, CalEEMod developed construction equipment fleet assumptions. Table 2.3.6-4 compares the estimated peak daily construction-related emissions for

Alternative 2 to Alternative 3. The emissions presented are based on the best information available at the time when the calculations were performed.

Table 2.3.6-4: Unmitigated Short-term Construction Emissions Estimate

Construction Activity	ROG (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	CO (lbs/day)	NOx (lbs/day)
Alternative 2					
Land Clearing and Grubbing	0.48	0.59	0.23	5.54	3.72
Site Work	3.32	3.38	1.39	40.08	27.66
Road and Noise Barrier	0.84	0.65	0.30	13.29	6.99
Maximum daily	4.16	4.02	1.70	52.80	34.65
Alternative 2 Total	*0.57 ton*	*0.55 ton*	*0.23 ton*	*7.39 tons*	*4.78 tons*
Alternative 3					
Site Work	0.45	0.87	0.30	5.81	5.48
Road Construction	0.67	0.43	0.26	9.42	5.30
Maximum daily	0.67	0.87	0.30	9.42	5.48
Alternative 3 Total	*0.09 ton*	*0.10 ton*	*0.04 ton*	*1.29 tons*	*0.87 ton*

Source: (HDR 2026)

Note: Numbers may not sum exactly due to rounding. Max daily emissions are representative of the maximum daily emissions when phases are overlapping (not all phases overlap at the same time).

lbs=pounds; ROG = reactive organic gas; CO = carbon monoxide; PM_{10} = particulate matter 10 microns in diameter or less; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NOx = nitrogen oxides; CO_2= carbon dioxide

As the proposed Project is located within the Wilmington/Carson/Long Beach AB 617 Community, the California ARB recommends requiring Tier 4 diesel equipment during construction to reduce emissions according to its Community Air Protection Program Blueprint 2.0. With the implementation of Measure **AQ-15**, which requires offroad construction equipment to be outfitted with engines meeting Tier 4 emissions standards, both NOx and PM emissions during construction would be lowered as shown in Table 2.3.6-5. Therefore, with incorporation of Measures **AQ-1** through **AQ-13** and **AQ-15**, no adverse short-term direct or indirect impacts on air quality would occur as a result of the proposed Project under Alternative 2.

Table 2.3.6-5: Mitigated Short-term Construction Emissions Estimate

Construction Activity	ROG (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	CO (lbs/day)	NOx (lbs/day)
Alternative 2					
Land Clearing and Grubbing	0.15	0.44	0.10	5.50	1.59
Site Work	0.98	2.54	0.64	49.48	9.82
Road and Noise Barrier	0.29	0.46	0.13	13.98	2.17
Maximum daily	1.26	3.00	0.77	62.87	11.99
Alternative 2 Total	*0.18 ton*	*0.41 ton*	*0.11 ton*	*8.73 tons*	*1.66 tons*
Alternative 3					
Site Work	0.27	0.83	0.27	5.72	4.45
Road Construction	0.18	0.22	0.07	10.05	1.30
Maximum daily	0.27	0.83	0.27	10.05	4.45
Alternative 3 Total	*0.04 ton*	*0.08 ton*	*0.02 ton*	*1.34 tons*	*0.41 ton*

Source: (HDR 2026)

lbs=pounds; ROG = reactive organic gas; CO = carbon monoxide; PM_{10} = particulate matter 10 microns in diameter or less; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NOx = nitrogen oxides; CO_2= carbon dioxide

Asbestos

No geologic features that are normally associated with naturally occurring asbestos (i.e., serpentine rock or ultramafic rock near fault zones) are present in or near the Project area (U.S. Geological Survey and California Geological Survey 2011). Therefore, the impact from naturally occurring asbestos during Project construction would be minimal to none. However, asbestos was used in many building materials prior to 1978 and its use may have continued until the early 1980s. ACMs are found in fireproofing, acoustic ceiling material, transite pipe, roofing materials, thermal insulation, support piers, expansion joint material in bridges, asphalt, concrete, and other building materials. It is of primary concern when it is friable (i.e., material that can be easily crumbled). During demolition, if not properly identified and mitigated, asbestos fibers could become airborne.

The proposed Project improvements under Alternative 2 would require disturbance of existing bridge structures. Therefore, these structures would be sampled and analyzed for ACM content prior to any demolition or disturbance. ACM sampling and analysis will be conducted prior to any ground-disturbing activity and prior to the completion of the PS&E phase per Measure **HAZ-2** (see Section 2.3.5, *Hazardous Materials)*. Health and Safety Plans, Construction Contaminant Management Plans, and Construction Contingency Plans would be prepared based on the results of the site investigation surveys (Project Feature **PF-HW-5**). In addition, widening the Dominguez Channel bridge, under Alternative 2, could require a USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) notification pending the result of those

investigations (Measure **AQ-16**). Therefore, with incorporation of Measures **HAZ-2** and **AQ-16**, no adverse short-term direct or indirect impacts on air quality relates to asbestos disturbance would occur as a result of the proposed Project under Alternative 2.

Lead

Lead is normally not an air quality issue for transportation projects unless the project involves disturbance of soils containing high levels of ADL or painting or modification of structures with lead-based coatings. In these cases, construction impact analysis should describe monitoring and abatement requirements of Caltrans' Standard Specifications and Standard Special Provisions for ADL or for lead paint removal and sandblasting. The entirety of the proposed Project fits into this category. The entire proposed areas of disturbance have potential for ADL deposits and shall be subject to ADL management or soilbound lead management related to roadway shoulders and bridges during construction. ADL would be investigated prior to construction in accordance with Project Feature **PF-HW-1** and Measures **AQ-14** and **HAZ-4**. Soils could be reused within the Project Study Area subject to the findings of the site investigation.

LBP may also be present on the bridges and in other structures that would be disturbed. LBP can also be a hazard for construction workers if not properly abated. Alternative 2 would implement Measure **HAZ-2**, which would require LBP surveys to be conducted for all structures that would be modified by the proposed Project. Health and Safety Plans, Construction Contaminant Management Plans, and Construction Contingency Plans would be prepared based on the results of the site investigation surveys (Project Feature **PF-HW-5**). Therefore, with incorporation of Measures **HAZ-2**, **AQ-14**, and **HAZ-4**, no adverse short-term direct or indirect impacts on air quality related to lead disturbance would occur as a result of the proposed Project under Alternative 2.

<u>Alternative 3 – Transportation System Management/Transportation Demand Management</u>

The length of the Project construction period is anticipated to last up to approximately 15 months, with construction beginning around December 2028. Construction activities under Alternative 3 would be considerably less intensive than Alternative 2.

Construction Conformity

Construction activities will not last for more than 5 years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis (40 CFR 93.123[c][5]).

Short-Term Emissions

As discussed under Alternative 2, during construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Measures **AQ-1** through **AQ-13** would be implemented. As shown in Table 2.3.6-5, construction

emissions under Alternative 3 would be lower than those generated under Alternative 2, as Alternative 3 does not require auxiliary lane construction and involves reduced equipment use, shorter activity duration, and smaller disturbance areas. Measure **AQ-15** would also be implemented requiring the use of Tier 4 equipment. Therefore, with incorporation of Measure **AQ-1** through **AQ-13** and **AQ-15**, no direct or indirect adverse impacts due to short-term air quality emissions would occur as a result of the proposed Project under Alternative 2.

Asbestos

The proposed Project improvements under Alternative 3 would not require disturbance of existing bridge structures. Therefore, no short-term direct or indirect impacts on air quality related to asbestos disturbance would occur as a result of the proposed Project under Alternative 3.

Lead

The proposed Project improvements under Alternative 3 would not require disturbance of existing bridge structures. As discussed under Alternative 2, the proposed areas of disturbance have potential for ADL deposits and shall be subject to ADL management or soilbound lead management related to roadway shoulders and bridges during construction. Similar to Alternative 2, ADL would be investigated prior to construction in accordance with Project Feature **PF-HW-1** and Measures **AQ-14** and **HAZ-4** under Alternative 3. Therefore, with incorporation of Measures **HAZ-1**, **AQ-14**, and **HAZ-4**, no adverse short-term direct or indirect impacts on air quality related to lead disturbance would occur as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under Alternative 1, there would be no change to the existing setting or transportation facilities. Therefore, no direct or indirect impacts on air quality would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Regional Conformity

Caltrans is the lead agency for NEPA and CEQA. Metro is responsible for coordinating with SCAG. The proposed project is listed in the Connect SoCal 2024-2050 financially constrained RTP/SCS which was found to conform by SCAG on April 4, 2024, and FHWA and the Federal Transit Administration made a regional conformity determination finding on May 10, 2024 (SCAG 2024; FHWA 2024). The project is also included in SCAG financially constrained 2025 FTIP Amendment 25-03, pages 14-15. See Appendix F for copies of project listing. The SCAG 2025 FTIP Amendment 25-03 was determined to conform by FHWA and the Federal Transit Administration on March 18, 2025. The design concept and scope of the proposed project is not consistent with the project description in the 2024-2050 RTP/SCS, 2025 FTIP, and the “open to traffic”

assumptions of the SCAG's regional emissions analysis. The Project listing will be revised in the 2027 FTIP prior to completion of the Final EIR/EA.

Project-Level Conformity

Project-level conformity is achieved by demonstrating that a project comes from a conforming RTP and TIP and the project has a design concept and scope that has not changed significantly from those in the RTP and TIP. Additional analyses (known as hot-spot analyses) are required because the Project is located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts. Hot-spot analysis is not required for O_3 precursors (i.e., NOx and VOC).

Carbon Monoxide Analysis

The Caltrans/University of California, Davis *Carbon Monoxide Protocol* was developed for project-level conformity (hot-spot) analysis and approved for use by the USEPA in 1997. It provides qualitative and quantitative screening procedures as well as quantitative (modeling) analysis methods for assessing project-level CO impacts. The qualitative screening step is designed to avoid the use of detailed modeling for projects that clearly cannot cause a violation of the CO standards or worsen an existing violation. Although the *Carbon Monoxide Protocol* was designed to address federal standards, it has been recommended for use by several air pollution control districts in their CEQA analysis guidance documents and should also be valid for California standards because the key criterion (8-hour concentration) is similar (i.e., 9 parts per million for the federal standard and 9.0 parts per million for the state standard). Sections 3 and 4 of the protocol detail procedures to determine if a CO hot-spot analysis is required, supported by decision flowcharts.

The proposed Project is not exempt from all emission analysis or regional emissions analysis because it does not fit any of the exemption categories identified in 40 CFR 93.126 or project types under 40 CFR 931.27, respectively. The proposed Project under Alternative 2 would add auxiliary lanes to the existing I-405 freeway and make ancillary Complete Streets improvements. These improvements would not result in changes to the percentage of vehicles operating in cold-start mode because no new parking or other trip-generating land uses would be associated with the proposed Project, following construction. Alternative 2 would not result in a material change in Average Annual Daily Traffic (AADT) volumes on any I-405 segment. With the new auxiliary lanes evaluated under Alternative 2, the I-405 performance metrics would improve relative to the No-Build Alternative, including increased vehicle speeds with increased volumes and decreases in delays and travel times. The proposed Project was evaluated using the CO Protocol. Through this screening process, it was determined that the proposed Project, under Alternative 2, is not expected to result in a new violation or worsen the existing violation of either the NAAQS or CAAQS.

Particulate Matter Analysis

The Transportation Conformity Guidance requires a hot-spot analysis to be completed for a Project of Air Quality Concern (POAQC). The final rule in 40 CFR 93.123(b)(1) defines a POAQC as:

(i) New or expanded highway projects that have a significant number of or increase in diesel vehicles;

(ii) Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;

(iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;

(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and

(v) Projects in or affecting locations, areas, or categories of sites identified in the applicable $PM_{2.5}$ and PM_{10} implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The proposed Project under Alternative 2 would not result in construction of a new or expanded highway system that would have a significant number of or significant increase in diesel vehicles.

The proposed Project under Alternative 2 is not a new highway project. No material change in AADT volumes or truck volumes is anticipated to occur under Alternative 2 when compared to the No-Build condition. Therefore, the proposed Project would not result in a substantial increase in the number of diesel vehicles and would not be considered a POAQC. Travel speeds would improve under Alternative 2 when compared to the No-Build condition. As such, the proposed Project under Alternative 2 would not be considered a POAQC under this criterion. The Project would not include new bus facilities, rail terminals, or transfer points. In addition, the Project would not include expanded bus facilities, rail terminals, or transfer points.

Moreover, the Project would not be expected to introduce significant volumes of diesel truck traffic in the Project Study Area, which could result in localized PM hot-spots.

The discussion provided above indicates that the proposed Project under Alternative 2 would not be considered a POAQC, as defined by 40 CFR 93.123(b)(1). The proposed Project underwent interagency consultation through SCAG's interagency consultation process. The interagency consultation evaluated the proposed Project and concluded it is not considered to be a POAQC, as defined by 40 CFR 93.123(b)(1); therefore, a quantitative particulate matter hot-spot evaluation is not required. It is unlikely that the

proposed Project would create new air quality violations, worsen existing violations, or delay attainment of the NAAQS for particulate matter. The SCAG Transportation Conformity Working Group concurred with this determination in a meeting that occurred on August 26, 2025. Documentation of the interagency consultation is included in Appendix F. Comment is requested regarding the project-level conformity analysis prior to certification of the final environmental document.

Additional Environmental Analysis

Environmental documents need to consider more than just conformity analysis. The primary factors for determining whether a project has substantial air quality impacts under NEPA are the NAAQS. State standards, however, are important when determining impacts under CEQA. Long-term (operational) environmental analysis should include regional (indirect or cumulative) pollutant analysis (for O_3, especially); this may be based on the regional conformity analysis, if available, or a separate regional analysis if conformity requirements do not apply for O_3 in a particular area. Comparative criteria pollutant emissions analyses are recommended in all areas, not just nonattainment/maintenance areas, to ensure for NEPA and CEQA purposes that the Project would not create a violation that could put the area into nonattainment.

Operational emissions take into account long-term changes in emissions due to the Project (excluding the construction phase). The operational emissions analysis compares forecasted emissions for existing, No-Build, and Build Alternatives conditions.

Long-term air quality emissions are those associated with motor vehicles operating on the roadway network, predominantly those operating in the Project vicinity. Emissions of ROG, NOx, CO, PM_{10}, and $PM_{2.5}$ for Existing Year (2024), Opening Year (2030), and Design Year (2050) conditions with and without the Project were evaluated through modeling using California ARB's 2021 EMission FACtor model, version 1.0.2 (EMFAC 2021) and Project-specific vehicle activity data. USEPA approved EMFAC 2021 on November 15, 2022 (87 CFR 68483). Operational emissions were quantified using EMFAC 2021 to support the Project NEPA and CEQA documents. The EMFAC 2021 analysis is presented below.

Table 2.3.6-6 summarizes the modeled emissions by scenario and compares emissions under the Build Alternatives with emissions under the No-Build Alternative and the Existing Year (2024) condition. The traffic analysis predicted no material differences in VMT under Alternative 2 when compared to No-Build. As such, the emissions modeling analysis revealed no material differences in emissions among alternatives but revealed emissions reductions for all criteria pollutants for Opening Year (2030) when compared to the Existing Year (2024). This is in large part because vehicular emission rates are anticipated to lessen in future years because of continuing improvements in engine technology and the retirement of older, higher-emitting vehicles. NO_x and CO emissions would continue to decline in the Design Year (2050) compared to the Existing/Baseline Year (2024) condition, but PM emissions would remain similar or slightly increase because of forecasted truck VMT growth (despite a decrease in overall VMT).

Therefore, no long-term direct or indirect adverse impacts on air quality would occur as a result of the proposed Project under Alternative 2.

Table 2.3.6-6: Summary of Comparative Emissions Analysis (lbs/day)

Scenario/Analysis Year	CO (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	NOx (surrogate for NO_2) (lbs/day)
Existing/Baseline Year (2024)	33,781	1,045	385	5,827
Alternative 1 (No-Build) Opening Year (2030)	25,077	1,026	366	3,818
Alternative 2 Opening Year (2030)	25,077	1,026	366	3,818
Alternative 3 Opening Year (2030)	25,077	1,026	366	3,818
Alternative 1 (No-Build) Design Year (2050)	17,156	1,065	366	2,849
Alternative 2 Design Year (2050)	17,156	1,065	366	2,849
Alternative 3 Design Year (2050)	17,156	1,065	366	2,849

Source: Calculated using Project VMT and EMFAC2021 emissions factors (HDR 2026)
CO = carbon monoxide; PM_{10} = particulate matter 10 microns in diameter or less; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NOx = nitrogen oxide (surrogate for nitrogen dioxide); lbs = pounds

Mobile Source Air Toxics Analysis

The USEPA has assessed an expansive list in its latest rule on the Control of Hazardous Air Pollutants from mobile sources and identified a group of 93 compounds emitted from mobile sources that are listed in its Integrated Risk Information System. In addition, the USEPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from its 1999 National Air Toxics Assessment. For projects warranting Mobile Source Air Toxics (MSAT) analysis, these nine priority MSATs (Diesel Particulate Matter, 1,3 Butadiene, Benzene, Formaldehyde, Acrolein [2-propenal], Naphthalene, Acetaldehyde, Ethylbenzene, and Polycyclic Organic Matter) should be considered. While FHWA considers these the priority MSATs, the list is subject to change and may be adjusted in consideration of future USEPA rules.

FHWA identified three levels of analysis ("categories") for MSAT emissions (FHWA 2023):

> *Category 1: Projects with No Meaningful Potential MSAT Effects, or Exempt Projects.* Category 1 projects generally include those that qualify as a categorical exclusion under 23 CFR 771.117, qualify as exempt under the FCAA conformity rule under 40 CFR 93.126, and other projects with no meaningful impacts on traffic volumes or vehicle mix. No analysis is required for Category 1 projects.
>
> *Category 2: Projects with Low Potential MSAT Effects.* Category 2 projects are those that serve to improve highway, transit, or freight operations or movement

without adding substantial new capacity or creating a facility that is likely to substantially increase emissions. The large majority of projects fall into this category. A qualitative analysis is required for Category 2 projects.

Category 3: Projects with Higher Potential MSAT Effects. Category 3 projects include those that:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of Diesel Particulate Matter in a single location, involving a significant number of diesel vehicles for new projects or accommodating with a significant increase in the number of diesel vehicles for expansion projects; or

- Create new capacity or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000, or greater, by the design year;

  And also

- Proposed to be located in proximity to populated areas.

A quantitative analysis is required for Category 3 projects.

The purpose of the proposed Project is to relieve congestion and provide improved travel speeds along I-405 within the Project Study Area, support efficient goods movement through the I-405 corridor, and improve emergency vehicle access for the surrounding community. Moreover, the FHWA's guidance states that new auxiliary lane projects fall into the Projects with Low Potential MSAT Effects category; therefore, a qualitative analysis for the proposed Project is provided below.

The fleet mix under Alternative 2 would be the same as under the No-Build Alternative; therefore, the amount of MSATs emitted would be proportional to the VMT for each Alternative. Because VMT is not expected to increase under Alternative 2 when compared to the No-Build Alternative, higher levels of MSAT emissions are not expected from Alternative 2 compared to the No-Build Alternative. In addition, because the estimated VMT is the same for the No-Build Alternative and Alternative 2, there would be no appreciable difference in overall MSAT emissions. Also, regardless of the Build Alternative selected, emissions would likely be lower than present levels in the Design Year (2050) as a result of the USEPA's national controls programs that are projected to reduce annual MSAT emissions by over 76 percent from 2020 to 2060 (FHWA 2023). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

Under Alternative 2, there may be localized areas where VMT would increase and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. Any localized increase in MSAT emissions would likely be most pronounced adjacent to I-405. However, even if these increases do occur, they too would be substantially reduced in the future due to implementation of the USEPA's vehicle and fuel regulations. Relative to the existing condition, it is expected there would be reduced MSAT emissions in the immediate area of the Project due to the reduced VMT associated with more direct routing and due to the USEPA's MSAT reduction programs. Therefore, no long-term direct or indirect adverse impacts on air quality would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Alternative 3 would not materially change traffic volumes, travel demand, or fleet mix relative to the No-Build condition. As shown in the comparative emissions analysis, Alternative 3's Opening Year (2030) and Design Year (2050) emissions are identical to Alternative 2 and would be below the SCAQMD's thresholds of significance for all criteria pollutants. Therefore, Alternative 3 would not exceed either state or federal ambient air quality standards. Net operational emissions for NOx and CO under Alternative 3 in both the Opening Year and Design Year would be lower than Existing Year (2024) conditions due to continued turnover of the vehicle fleet and ongoing improvements in engine technology. PM emissions would remain similar or slightly increase because of forecasted truck VMT growth (despite a decrease in overall VMT).

Alternative 3 would not worsen LOS at intersections with significant diesel volumes, and would not include new bus or rail terminals, and was concurred as not a POAQC by the interagency consultation. The proposed Project satisfies the project level conformity requirement without an explicit hot-spot analysis. Screening under the Carbon Monoxide Protocol confirms that Alternative 3 would not result in a new or worsened CO violations. Similarly, the proposed Project does not meet the criteria for a POAQC under 40 CFR 93.123(b)(1); therefore, no localized PM hot-spot analysis is required.

With respect to MSATs, Alternative 3 falls under FHWA's "Projects with Low Potential MSAT Effects" category. Because VMT under Alternative 3 is not expected to increase relative to the No-Build condition, MSAT emissions would be proportional to VMT and would remain comparable to No-Build levels. Any localized changes in MSAT concentrations would be minor and are anticipated to decrease in the future due to federal vehicle and fuel regulations. In the Design Year (2050), Alternative 3 is expected to result in reduced MSAT emissions relative to the existing condition.

Therefore, no long-term direct or indirect adverse impacts on air quality would occur as a result of the proposed Project under Alternative 3.

2.3.6.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are proposed:

Measure AQ-1 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that the construction contractor complies with Caltrans' Standard Special Provisions in Section 14-9 (2024). Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

Measure AQ-2 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that water or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions.

Measure AQ-3 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that a soil binder will be spread on any unpaved roads used for construction purposes and on all proposed construction parking areas.

Measure AQ-4 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that trucks will be washed as they leave the right-of-way as necessary to control fugitive dust emissions.

Measure AQ-5 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations, Title 17, Section 93114.

Measure AQ-6 Prior to construction, the Los Angeles County Metropolitan Transportation Authority's (Metro) Resident Engineer, or designated contractor, will ensure that a dust control supervisor will be identified to ensure compliance with all dust control measures, as required under South Coast Air Quality Management District (SCAQMD) Rule 403 requirements for a large operation.

Measure AQ-7 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.

Measure AQ-8 During the Plans, Specifications, and Estimates (PS&E) phase, (Metro) Resident Engineer, or designated contractor, will ensure that environmentally sensitive areas will be established near sensitive air receptors. Within these areas, construction activities involving extended idling by diesel equipment or vehicles will be prohibited to the extent feasible.

Measure AQ-9 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that track-out reduction measures, such as gravel pads at proposed Project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.

Measure AQ-10 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that all transported loads of soils and wet materials will be covered before transport or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust during transportation.

Measure AQ-11 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that dust and mud deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce particulate matter emissions.

Measure AQ-12 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure, to the extent feasible, that construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

Measure AQ-13 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that mulch will be installed or vegetation planted as soon as practical after grading to reduce windblown particulate matter in the area.

Measure AQ-14 During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Resident Engineer, or designated contractor, will ensure unpaved soils adjacent to the existing roadway and all areas of planned soil disturbance be tested for aerially deposited lead (ADL) according to Caltrans ADL testing guidelines. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed in accordance with Caltrans Standard Specifications, Section 14-11.08 Material Containing Hazardous Waste

Measure AQ-15 During construction, the California Department of Transportation's (Caltrans) Resident Engineer or designated contractor, will ensure that the construction contractor complies with Caltrans project-specific non-Standard Special Provisions (nSSP) 5-1.33 and 7-1.02C, which require that offroad construction equipment be outfitted with engines meeting Tier 4 emissions standards and that all certification and maintenance documentation be provided prior to equipment use. In addition, Caltrans' Resident Engineer or designated contractor will ensure that the construction contractor complies with nSSP 14-9.05. nSSP 14-09.05 requires compliance with the South Coast Air Quality Management District (SCAQMD) rules and regulations as the Project is located within SCAQMD's jurisdiction. Implementation of these nSSPs would reduce emissions of ozone precursors and criteria pollutants (primarily particulate matter and nitrogen oxides) during construction activities.

Measure AQ-16 During the Plans, Specifications, and Estimates (PS&E) phase, the Los Angeles County Metropolitan Transportation Authority's (Metro) Resident Engineer, or designated contractor, will ensure that an asbestos containing materials (ACM) and lead based paint (LBP) survey will be conducted for any structure requiring modification or removal. Metro's Resident Engineer, or designated contractor, will ensure that the survey will be conducted in conformance with the USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR, SCAQMD Rule 1403, and in accordance with Caltrans SSP 14-11.13, Disturbance of Existing Paint Systems on Bridges, and Caltrans SSP 14-11.16, Asbestos-Containing Construction Materials in Bridges.

Measures **HAZ-2** and **HAZ-4** from Section 2.3.5, *Hazardous Waste/Materials*, are also proposed.

2.3.7 Noise

2.3.7.1 Regulatory Setting

NEPA and CEQA provide a broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

CEQA

CEQA requires a strict baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the NEPA/23 CFR 772 noise analysis; please see Section 3.7, *CEQA Environmental Checklist*, for further information on noise analysis under CEQA.

NEPA and 23 CFR 772

For highway transportation projects with FHWA involvement (and Caltrans, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include NAC that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table lists the NAC for use in the NEPA/23 CFR 772 analysis.

Table 2.3.7-1: Noise Abatement Criteria

Activity Category	Noise abatement criteria, Hourly A-Weighted Noise Level, Leq(h)	Description of activity category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Residential. (Includes undeveloped lands permitted for this activity category)
C	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings. (Includes undeveloped lands permitted for this activity category)
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No noise abatement criteria—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No noise abatement criteria—reporting only	Undeveloped lands that are not permitted.

The following figure lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

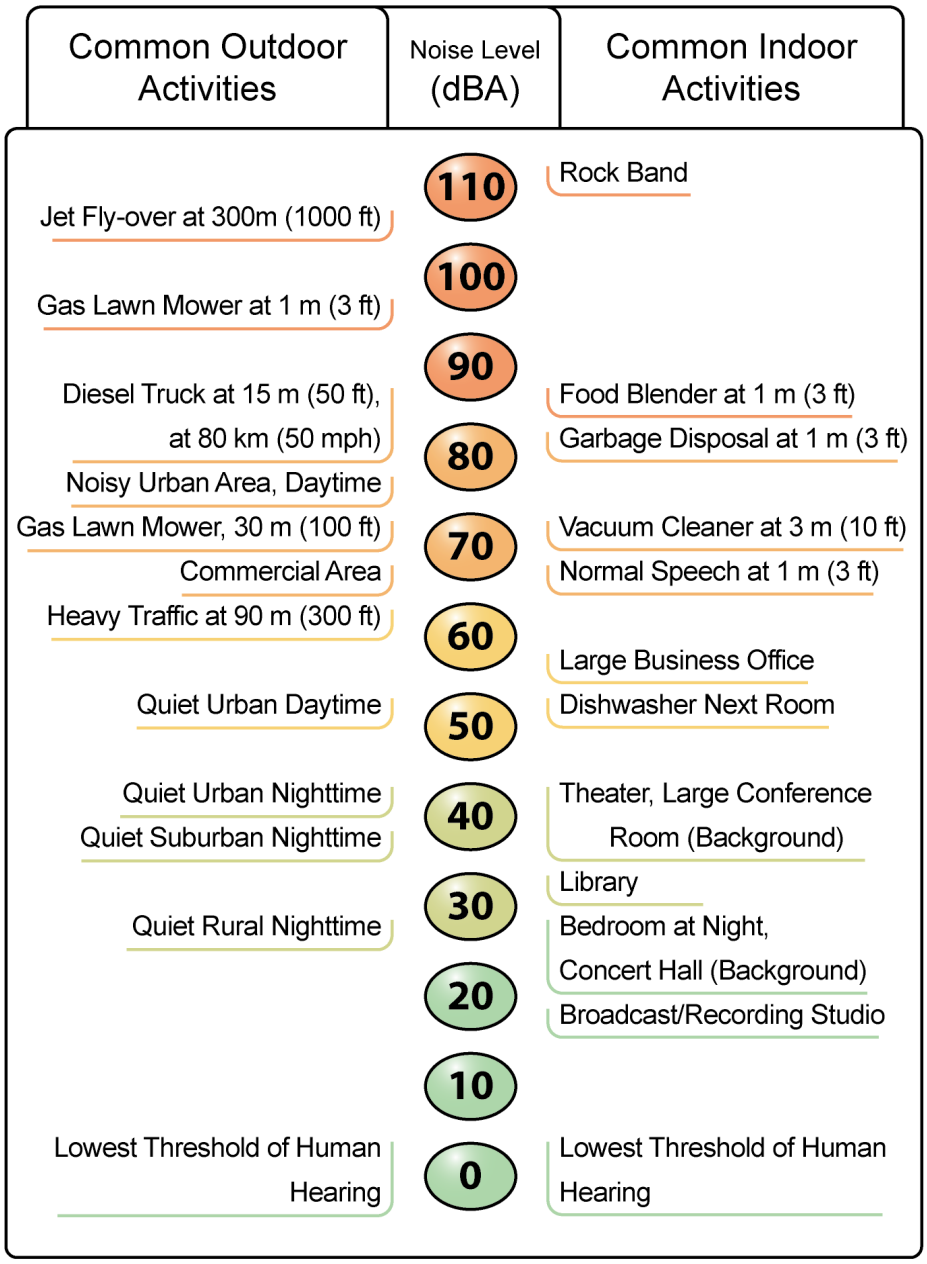


Figure 2.3.7-1: Noise Levels of Common Activities

According to Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects* (Caltrans 2020), a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more) or when the future noise level with the project approaches or exceeds the NAC. A noise level is considered to approach the NAC if it is within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be

reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the Project.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. Noise abatement must be predicted to reduce noise by at least 5 dB at an impacted receptor to be considered feasible from an acoustical perspective. It must also be possible to design and construct the noise abatement measure for it to be considered feasible. Factors that affect the design and constructability of noise abatement include, but are not limited to, safety, barrier height, topography, drainage, access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and maintenance of the abatement measure. The overall reasonableness of noise abatement is determined by the following three factors: 1) the noise reduction design goal of 7 dB at one or more impacted receptors; 2) the cost of noise abatement; and 3) the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

2.3.7.2 Affected Environment

The following discussion is based on the *Noise Study Report* (NSR; Ambient Air Quality and Noise Consulting, LLC 2026), which was completed in February 2026, and the *Noise Abatement Decision Report* (NADR; HDR Engineering, Inc. 2026), which was completed in April 2026.

Surrounding Land Uses and Sensitive Receptors

Land uses in the Project vicinity were identified through a field investigation. The following land uses were identified in the Noise RSA (see Table 2.3.7-1):

- Single- and multi-family residential (Activity Category B)
- Sport areas and parks (Activity Category C)
- Carnegie Middle School (Activity Category D)
- Hotels, restaurants, and offices (Activity Category E)
- Retail and industrial (Activity Category F)
- Undeveloped lands (Activity Category G).

To aid in the identification of land uses, the Noise RSA was divided into the following four sub-areas (see Figure 2.3.7-2):

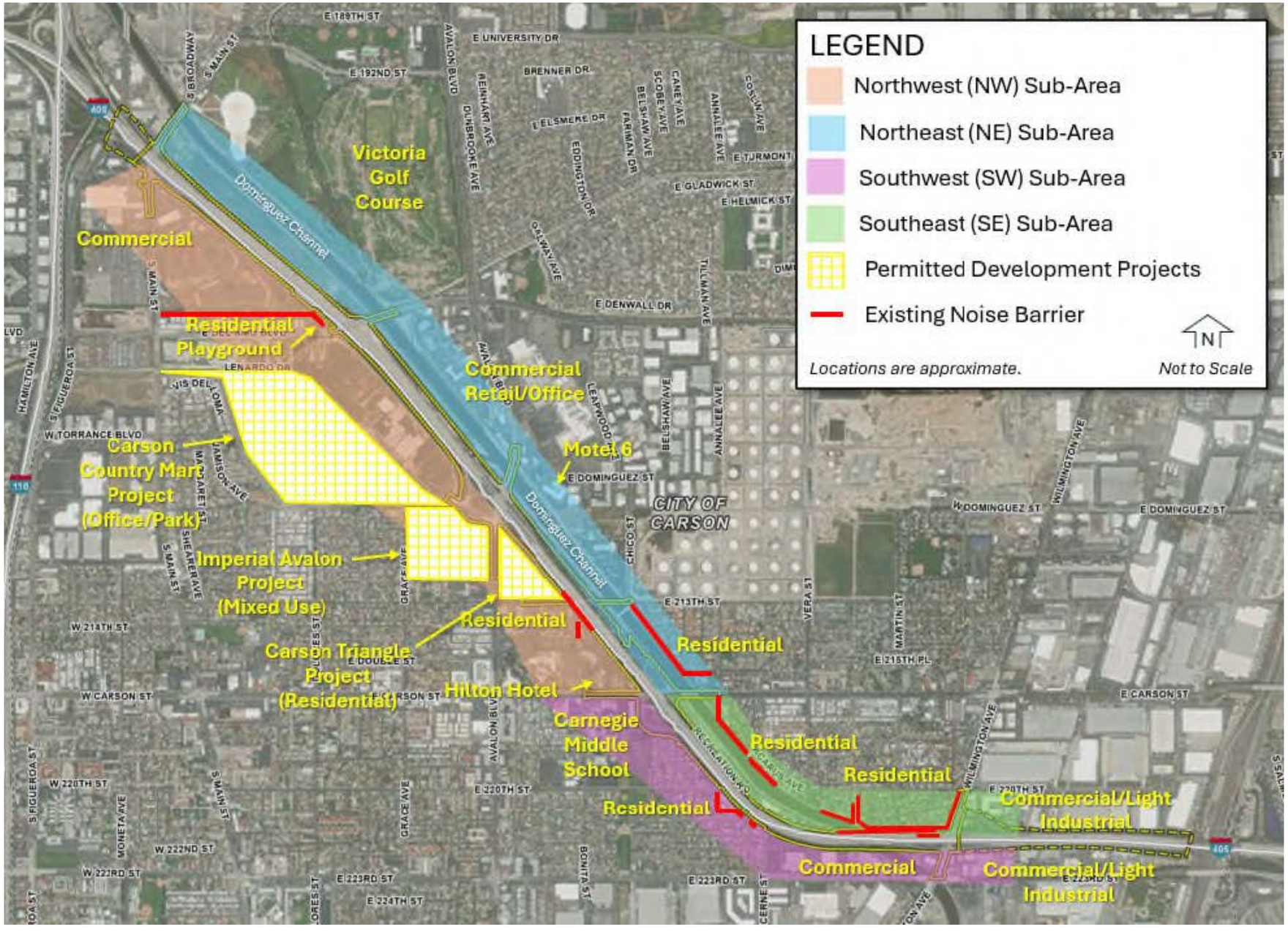


Figure 2.3.7-2: Existing Land Uses, Existing Noise Barriers, and Sub-Areas

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- **Northwest Sub-Area:** This area is located west of I-405 on the north side of Carson Street. This area includes single-family and multi-family residences (Activity Category B); a playground (Activity Category C); hotels, restaurants, and offices (Activity Category E); retail and industrial (Activity Category F); and undeveloped lands (Activity Category G). Three projects currently permitted for development are located in this area, identified as the Carson County Mart Project, Imperial Avalon Project, and the Carson Triangle Project. The Carson County Mart Project includes a mix of offices and restaurants (Activity Category E) and retail (Activity Category F). The Imperial Avalon Project and Carson Triangle Project include residential development (Activity Category B). Three existing noise barriers were identified in this area. An existing noise barrier is located along the northern and eastern property lines of existing multi-family residences located adjacent to and north of East Del Amo Boulevard, west of I-405. This existing noise barrier ranges in height from approximately 9 feet at the western end of the noise barrier to approximately 14 feet at the eastern end of the noise barrier. An existing noise barrier with a nominal height of 10 feet is located along SB I-405 between I-405 and single-family residences located south of East 213th Street and west of I-405. An existing noise barrier with an approximate height of 6 feet is located along the property line of residential land uses located west of I-405, which generally extends from East 214th Street southward to Bonita Street.

- **Northeast Sub-Area:** This area is located east of I-405 on the north side of Carson Street. This area includes single-family residences (Activity Category B); hotels, restaurants, and offices (Activity Category E); retail and industrial (Activity Category F); and undeveloped lands (Activity Category G). An existing noise barrier with a nominal height of 6 feet is located along the single-family residence's property line between I-405 and single-family residences located east of the Dominguez Channel.

- **Southwest Sub-Area:** This area is located west of I-405 on the south side of Carson Street. This area includes single-family (Activity Category B); schools (Activity Category D); a pet boarding facility and restaurant (Activity Category E); and retail and industrial uses (Activity Category F). Two existing noise barriers were identified in this area. An existing noise barrier with a nominal height of approximately 8 feet is generally located along the single-family residential property lines located adjacent to the Local 675 United Steelworkers building, west of East 220th Street, north of East Jay Street. An existing, approximately 6-foot-tall noise barrier is also located along East 220th Street, south of East Jan Street.

- **Southeast Sub-Area:** This area is located east of I-405 on the south side of Carson Street. This area includes single-family (Activity Category B); offices (Activity Category E); and retail and industrial (Activity Category F). Several existing noise barriers are located in this area. A noise barrier with a nominal height of 6 feet is located along the single-family residence's property lines between Wilmington Avenue and the single-family residences generally located

adjacent to and west of Wilmington Avenue. A noise barrier with a variable height of 6 to 12 feet is located along the single-family residence's property lines between I-405 and Wilmington Avenue onramp and adjacent single-family residences, which generally extends from Wilmington Avenue westward approximately 720 feet. This noise barrier ranges in height from approximately 12 feet near Wilmington Avenue to approximately 6 feet at the western end of the noise barrier. A noise barrier with a nominal height of 10 feet is located within NB I-405 ROW, which generally extends from the Wilmington Avenue overpass westward approximately 370 feet. A noise barrier with a nominal height of 10 feet is located within the NB I-405 and Wilmington Avenue on-ramp to approximately 1,705 feet west. An existing, approximately 6-foot-tall noise barrier is also located along the property line of commercial uses located south of the SB I-405 Wilmington Avenue on-ramp, adjacent to the Union Pacific Railroad, and east of Wilmington Avenue.

Existing Noise Environment

The primary source of noise in the Noise RSA includes traffic along I-405 and on local roadways, including Wilmington Avenue and Carson Street. Existing noise was determined based on short-term and long-term (24-hour) noise level measurements, which were selected to represent noise-sensitive land uses in the Noise RSA. The short-term and long-term monitoring locations are shown in Figure 2.3.7-3 through Figure 2.3.7-8.

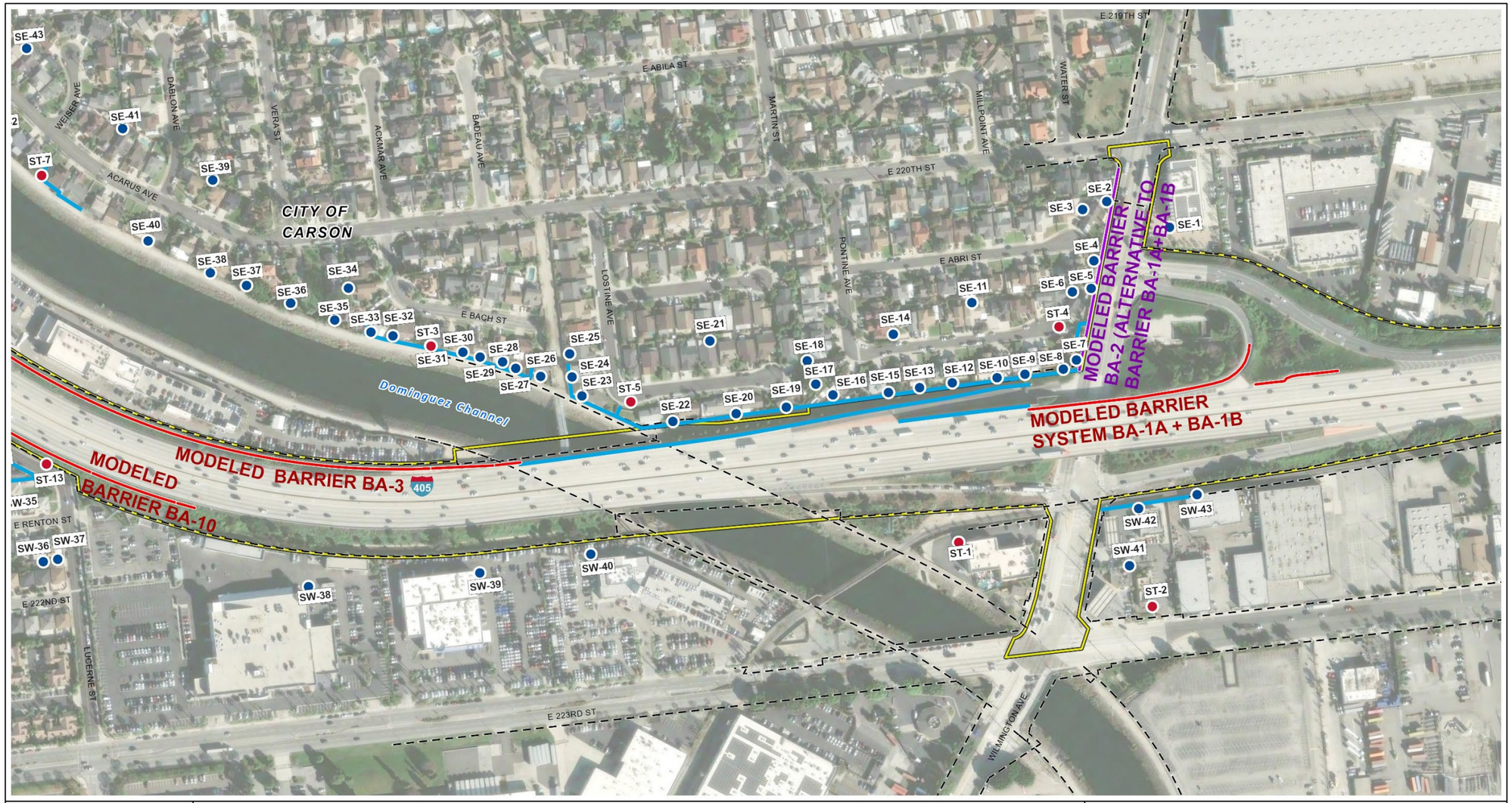
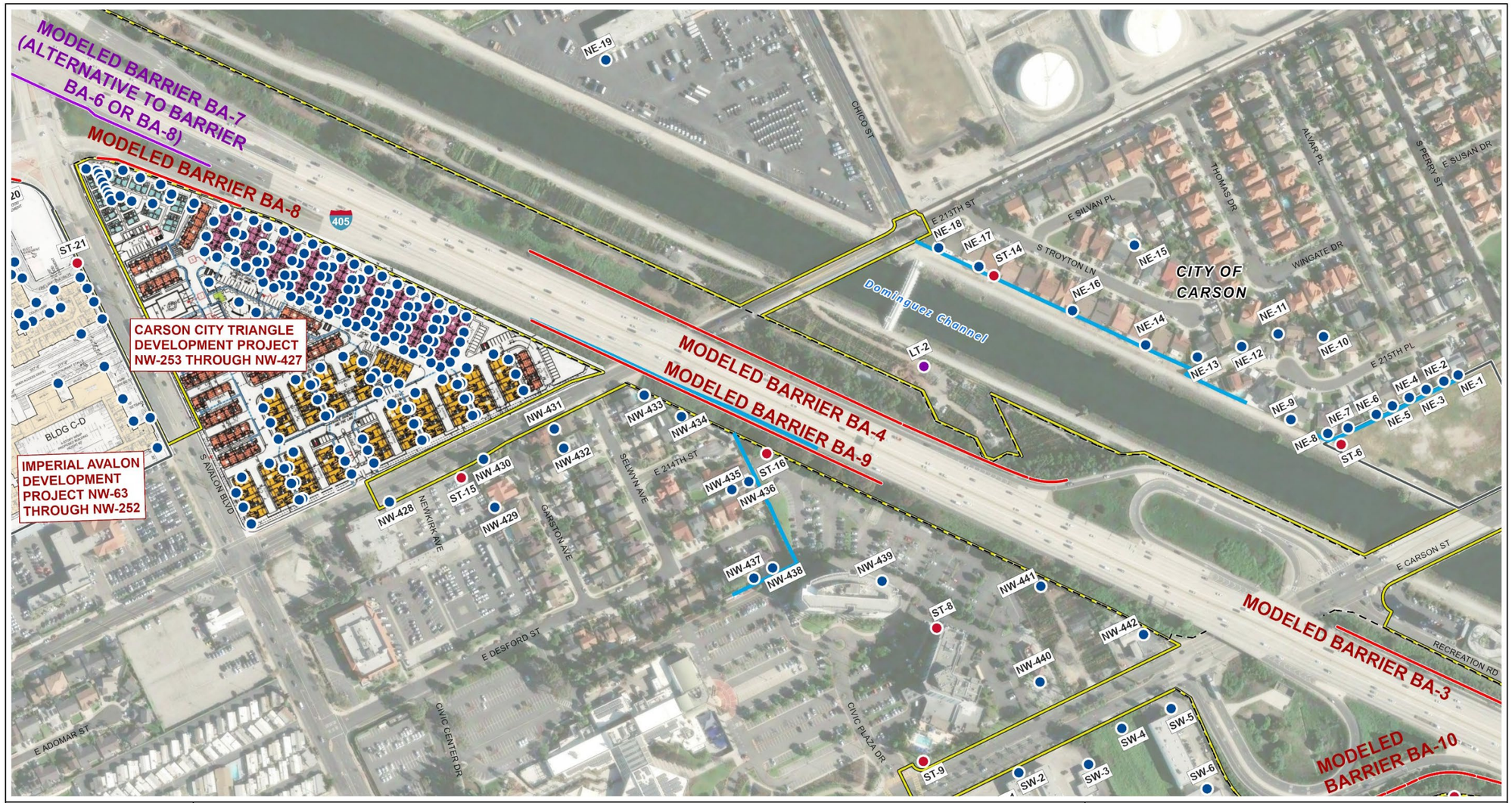


Figure 2.3.7-3: Noise Analysis Areas, Noise Measurement Areas, Modeled Receivers and Evaluated Barriers (Sheet 1 of 6)

Figure 2.3.7-4: Noise Analysis Areas, Noise Measurement Areas, Modeled Receivers and Evaluated Barriers (Sheet 2 of 6)



0 Feet 300

LEGEND

Project Study Area
Caltrans R/W

Noise Receiver Type
Modeled Noise Receiver Location
Long-Term Noise Measurement Location
Short-Term Noise Measurement Location

Noise Barrier Type
Modeled Noise Barrier
Alternative Modeled Noise Barrier
Existing Noise Barrier

07-LA-405 PM 9.6/12.6
EA 07-35940
I-405 from Wilmington Ave to Main St Improvements Project

Figure 2.3.7-5: Noise Analysis Areas, Noise Measurement Areas, Modeled Receivers and Evaluated Barriers (Sheet 3 of 6)

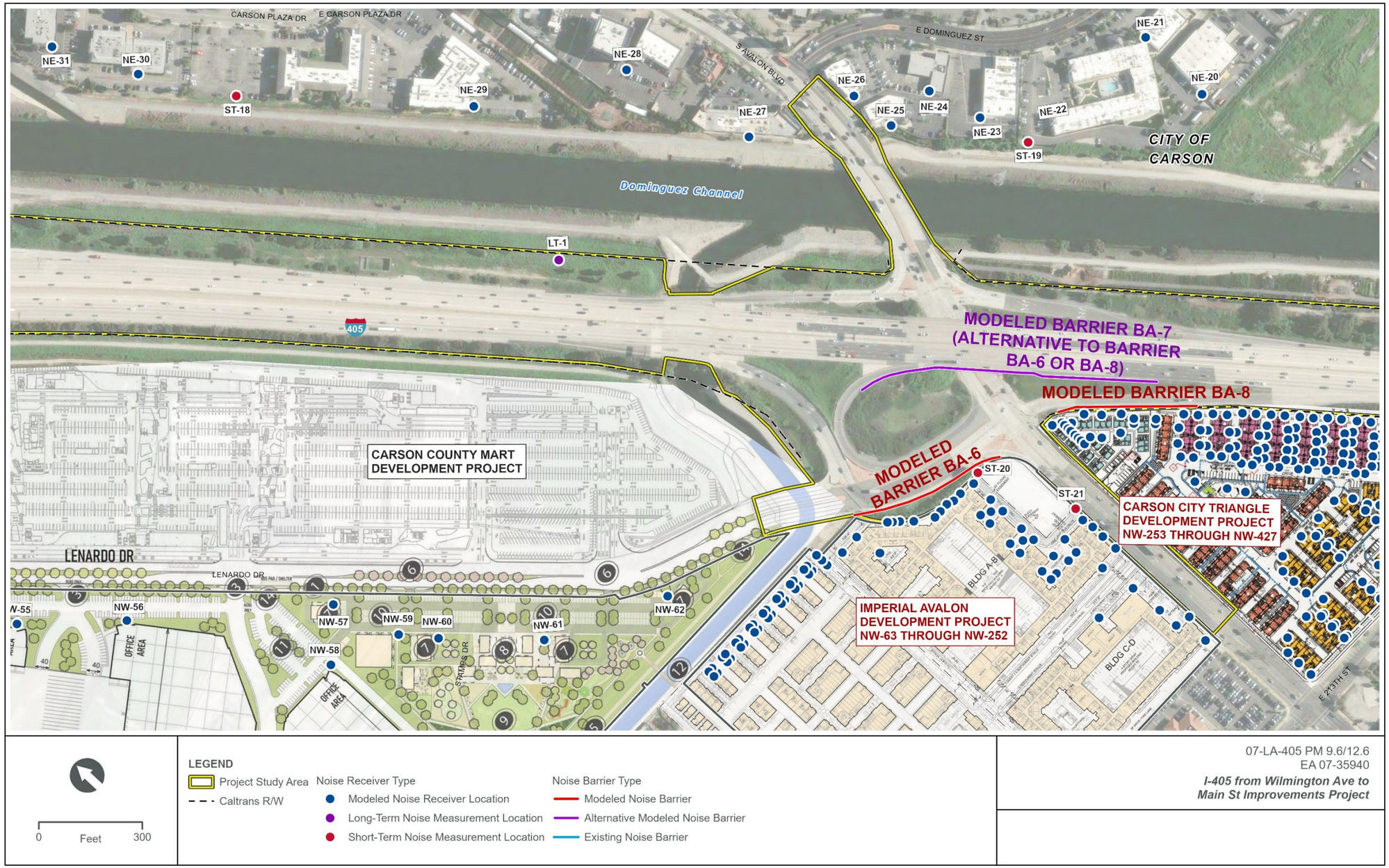


Figure 2.3.7-6: Noise Analysis Areas, Noise Measurement Areas, Modeled Receivers and Evaluated Barriers (Sheet 4 of 6)

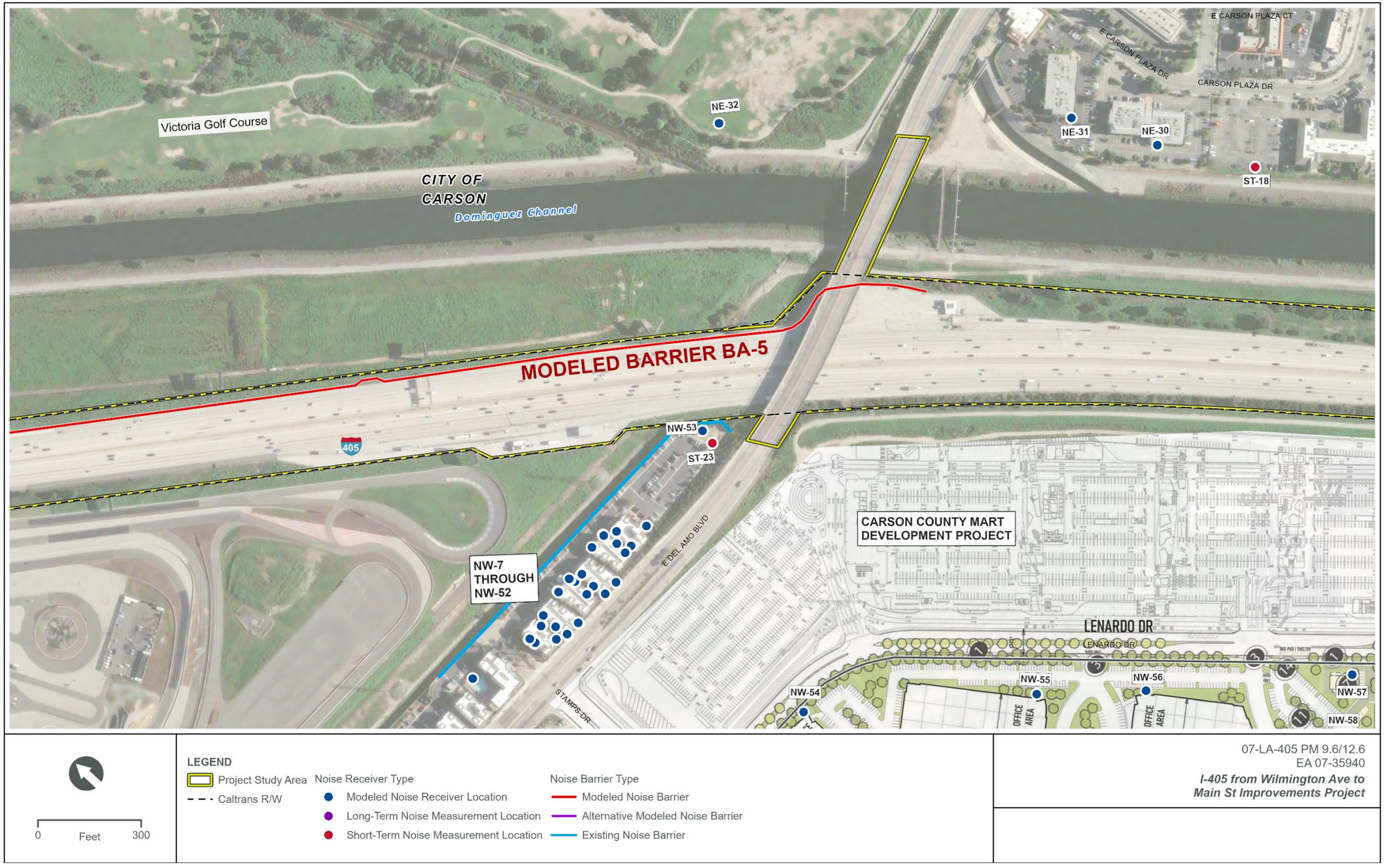


Figure 2.3.7-7: Noise Analysis Areas, Noise Measurement Areas, Modeled Receivers and Evaluated Barriers (Sheet 5 of 6)

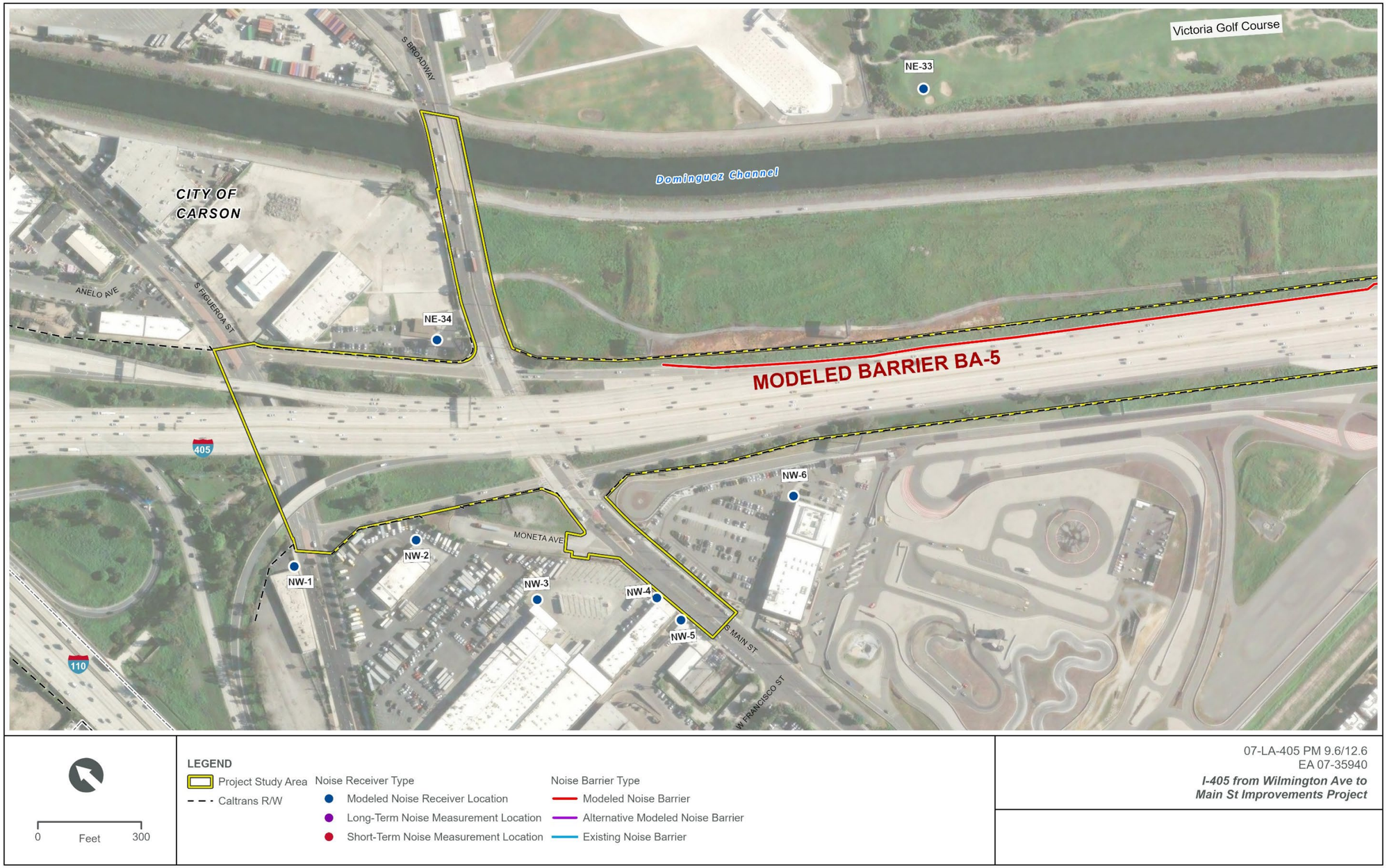


Figure 2.3.7-8: Noise Analysis Areas, Noise Measurement Areas, Modeled Receivers and Evaluated Barriers (Sheet 6 of 6)

Short-Term Monitoring

A total of 23 short-term noise measurements were conducted at various times between February 18 and 19, 2025. In addition to these measurements, two short-term background noise measurements were conducted to determine noise levels within the surrounding community. Table 2.3.7-2 shows the results of the short-term measurements.

Table 2.3.7-2: Summary of Short-Term Noise Measurements

Position[1]	Location	Sub-Area – Land Use	Measurement Date	Start Time & End Time	Measured Leq(h), dBA
ST-1	22251Wilmington Avenue. Wag Hotel. In line with building façade.	SW Sub-Area Pet Hotel	2/19/2025	13:14 13:24	69.7
ST-2	1933 East 223rd Street. Del Taco. Near outdoor eating area.	SW Sub-Area Restaurant	2/19/2025	12:59 13:09	67.7
ST-3	1450 East Bach Street. Rear yard of residence.	SE Sub-Area Residential	2/19/2025	12:43 12:53	62.1
ST-4	1724 East Bach Street. Cul-de-sac of East Bach Street.	SE Sub-Area Residential	2/19/2025	13:57 14:07	59.3
ST-5	1500 East Bach Street. Near Lostine Ave, approx. 530 feet south of East 220th Street.	SE Sub-Area Residential	2/19/2025	13:36 13:46	61.3
ST-6	Empty lot. At fence line near residential backyard of 1116 East 215th Street.	NE Sub-Area Undeveloped	2/19/2025	08:05 08:15	63.5
ST-7	21949 Acarus Avenue. Rear yard of residence.	SE Sub-Area Residential	2/19/2025	12:23 12:33	65.2
ST-8	2 Civic Plaza Drive. Near Northeast Corner of Double Tree Hotel.	NW Sub-Area Hotel	2/19/2025	09:09 09:19	66.8
ST-9	2 Civic Plaza Drive. Near Swimming Pool of Double Tree Hotel.	NW Sub-Area Hotel	2/19/2025	09:13 09:23	69.3
ST-10	Cul de sac. In line with north residential property line at 21801 South Edgar Street.	SW Sub-Area Residential	2/19/2025	11:54 12:04	67.1
ST-11	Cul de sac. In line with east residential property line of 1113 & 1118 East 219th Street.	SW Sub-Area Residential	2/19/2025	11:54 12:04	69.2
ST-12	Recreation Road. At fenceline across from Go Kart World, 21830 Recreation Road.	SE Sub-Area Commercial	2/19/2025	12:20 12:30	73.0
ST-13	East 220th Street. At fenceline across from residence at 1256 E 220th St.	SW Sub-Area Residential	2/19/2025	11:14 11:24	68.3
ST-14	21309 South Troyton Lane. Rear yard of residence.	NE Sub-Area Residential	2/19/2025	08:32 08:42	62.2

Position[1]	Location	Sub-Area – Land Use	Measurement Date	Start Time & End Time	Measured Leq(h), dBA
ST-15	USPS parking lot, near residential dwelling at 802 East 213th Street	NW Sub-Area Office	2/19/2025	08:26 .08:36	66.9
ST-16	Parking lot near rear yard of residential dwelling at 864 East 214th Street	NW Sub-Area Residential	2/19/2025	08:03 08:13	67.3
ST-18	500 East Carson Plaza Drive. Near western property line/ office building.	NE Sub-Area Offices	2/18/2025	12:48 12:58	62.6
ST-19	888 East Dominguez Street. Motel 6. Near western property line/motel.	NE Sub Area Motel	2/18/2025	12:28 12:38	65.3
ST-20	Avalon Boulevard. South of I-405 Ramps. Near north property line of proposed Imperial Avalon development project.	NW Sub Area Commercial	2/18/2025	12:29 12:39	66.2
ST-21	Avalon Boulevard. South of I-405 Ramps. Near east property line of proposed Imperial Avalon development project.	NW Sub Area Commercial	2/18/2025	12:47 12:57	72.1
ST-22	340 Martin Luther King Jr. Street. Victoria Golf Course. Near western boundary.	NW Sub-Area Sport Area	2/18/2025	08:25 08:35	58.2
ST-23	285 East Del Amo Boulevard Eastern boundary at outdoor playground.	NW Sub-Area Playground	2/18/2025	08:59 09:09	66.7

Source: (Ambient Air Quality & Noise Consulting, LLC 2026)
dBA = decibels; I-405=Interstate 405; Leq(H) = hourly equivalent noise level; NW = northwest; NE = northeast; SW = southwest; SE = southeast
Notes: ST-17 cancelled due to extraneous noise sources occurring during the measurement period. Refer to Figure 2.3.7-2 for sub area locations. Refer to Figure 2.3.7-3 through Figure 2.3.7-8 for noise measurement locations. Refer to Appendix D of the NSR for noise monitoring data and observed traffic volumes and speeds.

Long-Term Monitoring

Long-term monitoring was conducted at three locations concurrently from February 18 to 19, 2025. The purpose of these measurements was to identify variations in noise levels throughout the day.

Long-term noise measurement at location LT-1 was conducted on the east side of I-405 between Del Almo Boulevard, approximately 1,100 feet north of Avalon Boulevard and 75 feet east of the NB I-405 edge of the pavement. The loudest average-hourly noise level measured was 73.6 dBA hourly equivalent noise level (L_{eq}[h]) during the 5:00 a.m. hour.

Table 2.3.7-3 summarizes the results of the long-term monitoring at location LT-1.

Table 2.3.7-3: Summary of Long-Term Measurement at Location LT-1

Hour Beginning	Average (dBA L_{eq}[h])	Difference from Loudest Hour (dBA)
12:00	71.6	-2
13:00	71.4	-2.2
14:00	72.1	-1.5
15:00	72.2	-1.4
16:00	72	-1.6
17:00	72	-1.6
18:00	71.3	-2.3
19:00	71.8	-1.8
20:00	71.7	-1.9
21:00	71.5	-2.1
22:00	70.2	-3.4
23:00	69	-4.6
00:00	67.6	-6
01:00	66.7	-6.9
02:00	66.4	-7.2
03:00	69	-4.6
04:00	71.9	-1.7
05:00	**73.6**	**0**
06:00	73.5	-0.1
07:00	71	-2.6
08:00	70.1	-3.5
09:00	72.3	-1.3
10:00	72.6	-1
11:00	72.2	-1.4

Source: (Ambient Air Quality & Noise Consulting, LLC 2026)
dBA = decibels; Leq(H) = hourly equivalent noise level
Notes: Based on measurements conducted from February 18 to February 19, 2025. The worst noise hour noise level is bolded. Refer to Appendix D of the NSR for noise measurement data.

Long-term noise measurement at location LT-2 was conducted on the east side of I-405 between East 213th Street and Carson Street approximately 500 feet south of East 213th Street and 180 feet east of the NB I-405 edge of the pavement. The loudest average-hourly noise level measured was 80.6 dBA L_{eq}(h) during the 5:00 a.m. hour at location LT-2. Table 2.3.7-4 summarizes the results of the long-term monitoring at location LT-2.

Table 2.3.7-4: Summary of Long-Term Measurement at Location LT-2

Hour Beginning	Average (dBA L_{eq}[h])	Difference from Loudest Hour (dBA)
12:00	77.6	-3
13:00	78.2	-2.4
14:00	79.4	-1.2
15:00	79.5	-1.1
16:00	79.4	-1.2
17:00	79.6	-1
18:00	79	-1.6
19:00	79.6	-1
20:00	79.3	-1.3
21:00	78.8	-1.8
22:00	77.5	-3.1
23:00	76.1	-4.5
00:00	74.7	-5.9
01:00	73.4	-7.2
02:00	72.9	-7.7
03:00	75.5	-5.1
04:00	79.3	-1.3
05:00	**80.6**	**0**
06:00	80.4	-0.2
07:00	76.7	-3.9
08:00	74.5	-6.1
09:00	78.6	-2
10:00	78.5	-2.1
11:00	79	-1.6

Source: (Ambient Air Quality & Noise Consulting, LLC 2026)
dBA = decibels; Leq(H) = hourly equivalent noise level
Notes: Based on measurements conducted from February 18 to February 19, 2025. The worst noise hour noise level is bolded. Refer to Appendix D of the NSR for noise measurement data.

Long-term noise measurement at location LT-3 was conducted on the westside of I-405 on East 220th Street, approximately 215 feet north of East Jay Street and 80 feet west of the SB I-405 edge of the pavement. The loudest average-hourly noise level measured was 75.4 dBA L_{eq}(h) during the 6:00 a.m. hour. Table 2.3.7-5 summarizes the results of the long-term monitoring at location LT-3.

Table 2.3.7-5: Summary of Long-Term Measurement at Location LT-3

Hour Beginning	Average (dBA L_{eq}[h])	Difference from Loudest Hour (dBA)
12:00	71.6	-3.8
13:00	70.9	-4.5
14:00	67	-8.4
15:00	66.5	-8.9
16:00	66.6	-8.8
17:00	66.1	-9.3
18:00	66.1	-9.3
19:00	70	-5.4
20:00	71.4	-4
21:00	71.5	-3.9
22:00	72	-3.4
23:00	70.4	-5
00:00	69.3	-6.1
01:00	68	-7.4
02:00	67.3	-8.1
03:00	68.7	-6.7
04:00	71.9	-3.5
05:00	74.2	-1.2
06:00	**75.4**	**0**
07:00	74.1	-1.3
08:00	72.8	-2.6
09:00	72.2	-3.2
10:00	71.2	-4.2
11:00	70.3	-5.1

Source: (Ambient Air Quality & Noise Consulting, LLC 2026)
dBA = decibels; Leq(H) = hourly equivalent noise level
Notes: Based on measurements conducted from February 18 to February 19, 2025. The worst noise hour noise level is bolded. Refer to Appendix D of the NSR for noise measurement data.

Traffic Noise Modeling

Traffic noise levels were predicted using the FHWA Traffic Noise Model Version 2.5. Table 2.3.7-6 compares measured and modeled noise levels at the short- and long-term measurement locations. The predicted noise levels are within 3 dB of the measured noise levels and are considered to be in reasonable agreement with the measured noise levels. Therefore, no further adjustment of the model was necessary.

Table 2.3.7-6: Comparison of Measured to Predicted Noise Levels in the Traffic Noise Model

Measurement Position	Measured Noise Level (dBA L_{eq}[h])	Predicted Noise Level (dBA L_{eq}[h])	Measured minus Predicted (dBA)
ST-1	69.7	69	-0.7
ST-3	62.1	61.8	-0.3
ST-4	59.3	61.9	2.6
ST-5	61.3	62.9	1.6

Measurement Position	Measured Noise Level (dBA L_{eq}[h])	Predicted Noise Level (dBA L_{eq}[h])	Measured minus Predicted (dBA)
ST-6	63.5	62.1	-1.4
ST-7	65.2	66.4	1.2
ST-8	66.8	66.7	-0.1
ST-9	69.3	69.1	-0.2
ST-10	**67.1**	**67.1**	**0**
ST-11	69.2	69.9	0.7
ST-12	73	71.6	-1.4
ST-13	68.3	69.3	1
ST-14	62.2	61.9	-0.3
ST-16	67.3	66.1	-1.2
ST-18	62.6	63.6	1
ST-19	65.3	65.7	0.4
ST-20	66.2	67.9	1.7
ST-21	72.1	70.5	-1.6
ST-22	58.2	60.1	1.9
ST-23	66.7	65.2	-1.5

Source: (Ambient Air Quality & Noise Consulting, LLC 2026)
dBA = decibels; Leq(H) = hourly equivalent noise level
Notes: Based on measurements conducted from February 18 to February 19, 2025. The worst noise hour noise level is bolded. Noise measurement positions ST-17 cancelled due to noise contribution from extraneous sources. Noise measurement positions ST-2 and ST-15 excluded from calibration due to noise contribution from extraneous sources.

2.3.7.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, no construction activities would occur. Therefore, no short-term direct or indirect noise impacts would occur as a result of the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would require widening of pavement, realignment of on- and off-ramps, construction of retaining walls and noise barriers, and widening of the Dominguez Channel Bridge. Construction activities would include grading, excavation, vegetation removal, and operation of heavy equipment. Under Alternative 2, all work would be completed within State and City ROW except at the Dominguez Channel Bridge, which would require excavation of the Dominguez Channel bottom for placement of cast-in-drilled-hole piles.

Construction of Alternative 2 is estimated to begin in 2028 and take approximately 24 months, with the duration of work within the Dominguez Channel lasting approximately 4 months. During construction, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Table 2.3.7-7 summarizes typical noise levels produced by construction equipment that is commonly

used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 80 to 85 dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 2.3.7-7: Typical Construction Equipment Noise Levels

Equipment	Maximum Noise Level (dBA at 50 feet)
Backhoe/Loader	80
Bulldozer	85
Concrete Pump	82
Compactor	82
Heavy Truck	84
Paver	85
Pneumatic Tool	85
Roller	85
Scraper	85

Source: (Ambient Air Quality & Noise Consulting, LLC 2026)
dBA = A-weighted decibels

Alternative 2 would require the use of alternative warning methods in place of audible sound signals, unless required by safety laws (see Project Feature **PF-NOI-1** in Section 1.4, *Project Alternatives*). All internal combustion engines and construction equipment would be equipped with properly operating, manufacturer-recommended mufflers (see Project Features **PF-NOI-2** and **PF-NOI-3**). Stationary construction equipment would also be positioned to direct noise away from nearby noise-sensitive receptors, and construction vehicle staging and equipment maintenance areas would be located as far as feasible from sensitive receptor locations (see Project Features **PF-NOI-4** and **PF-NOI-5**).

Short-term nighttime closures may be required at several on and off-ramps within the Project Study Area. Measure **NOI-1** would require compliance with Caltrans' Standard Special Provision 14-8.02, which would include implementation of a Noise Control Plan with monitoring, restricted weekday construction hours, and limiting pile driving to daytime to minimize temporary noise impacts on sensitive receptors. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Therefore, no adverse short-term direct or indirect noise impacts would occur from construction under Alternative 2.

<u>Alternative 3 – Transportation Systems Management and Transportation Demand Management</u>

Construction activities under Alternative 3 would be similar to Alternative 2. Under Alternative 3, construction is estimated to begin in 2028 and take approximately 15 months. Implementation of Complete Streets elements and TSM and TDM strategies are anticipated to involve the use of construction equipment commonly used for roadway construction projects as listed in Table 2.3.7-7. Alternative 3 would not widen any bridge, and pile driving would not be required. However, short-term nighttime closures at several on- and off-ramps within the Project Study Area may be required.

Construction activities would be conducted in accordance with Caltrans Standard Specifications Section 14.8-02 and Project Features **PF-NOI-1** through **PF-NOI-5**. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Therefore, no adverse short-term direct or indirect noise impacts would occur from construction under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under Alternative 1, there would be no change to the existing setting or transportation facilities. Therefore, no long-term direct or indirect impacts on noise would occur as a result of the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 is considered a Type I project and requires noise analysis under 23 CFR 772. Appendix L, *Noise Study Report Data*, summarizes the traffic noise modeling results for the proposed Project under Alternative 2 for the Design Year (2050) compared to the No-Build Alternative and existing conditions. The modeling results indicate that the predicted noise levels under Alternative 2 would be the same as the No-Build Alternative and similar to existing conditions (-2 to 2 dBA) for all modeled receivers.

Predicted future noise level with the project would not substantially exceed existing noise levels (defined as 12 dBA or more). However, noise abatement is being considered under 23 CFR 772 for Alternative 2 because noise levels would approach or exceed the NAC for Category B (residential) and Category C (sports areas) land uses and approach the NAC for Category E (office) land uses. Predicted noise levels would not approach or exceed the NAC for Categories C, D, or E land uses.

A total of 10 potential noise barrier locations were evaluated for feasibility and acoustical reasonableness under Alternative 2. Table 2.3.7-8 summarizes the traffic noise modeling results for these 10 barriers. Of the noise barrier evaluated, noise barriers are being recommended along NB I-405 mainline near the Carson Street on-ramp (Barrier BA-3), along SB I-405 near the Imperial Avalon Mixed Use and Carson Triangle developments (BA-7), and along SB I-405 mainline near the Carson Street on-ramp (Barrier BA-10). Noise abatement is further discussed below in Section 2.3.7.4.

Alternative 3 – Transportation Systems Management and Transportation Demand Management

Alternative 3 is considered a Type III project because it would not construct a highway on a new location or physically alter an existing highway nor add auxiliary lanes on I-405. Therefore, Alternative 3 would not result in operational noise impacts under 23 CFR 772.

Table 2.3.7-8: Noise Impact Summary (Alternative 2)

Receptor #	Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Noise Impact Requiring Abatement Consideration	Barrier	Predicted Noise Level with Abatement (dBA): 8 feet	Predicted Noise Level with Abatement (dBA): 10 feet	Predicted Noise Level with Abatement (dBA): 12 feet	Predicted Noise Level with Abatement (dBA): 14 feet	Predicted Noise Level with Abatement (dBA): 16 feet	Predicted Noise Level with Abatement (dBA): 18 feet	Predicted Noise Level with Abatement (dBA): 20 feet	Reasonable and Feasible
NW-102	Imperial Avalon Project	61	61	61	-	BA-6	59	59	59	59	59	59	59	-
NW-103*	Imperial Avalon Project	65	65	65	-	BA-6	62	62	62	62	62	62	62	-
NW-104*	Imperial Avalon Project	67	67	67	-	BA-6	67	67	65	64	63	63	63	-
NW-105*	Imperial Avalon Project	68	68	68	-	BA-6	68	68	68	68	68	68	68	-
NW-106	Imperial Avalon Project	51	51	51	-	BA-6	51	51	51	51	51	51	51	-
NW-107	Imperial Avalon Project	62	62	62	-	BA-6	57	57	57	57	57	57	57	-
NW-108*	Imperial Avalon Project	67	68	68	-	BA-6	61	61	61	61	61	61	61	-
NW-109*	Imperial Avalon Project	69	70	70	-	BA-6	69	69	69	69	69	69	69	-
NW-110*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-111	Imperial Avalon Project	63	63	63	-	BA-6	57	57	57	57	57	57	57	-
NW-112*	Imperial Avalon Project	68	68	68	-	BA-6	61	61	61	61	61	61	61	-
NW-113*	Imperial Avalon Project	69	70	70	-	BA-6	69	69	69	69	69	69	69	-
NW-114*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-115	Imperial Avalon Project	63	63	63	-	BA-6	57	57	57	57	57	57	57	-
NW-116*	Imperial Avalon Project	68	68	68	-	BA-6	61	61	61	61	61	61	61	-
NW-117*	Imperial Avalon Project	69	70	70	-	BA-6	69	69	69	69	69	69	69	-
NW-118*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-119	Imperial Avalon Project	64	64	64	-	BA-6	58	58	58	58	58	58	58	-
NW-120*	Imperial Avalon Project	68	68	68	-	BA-6	61	61	61	61	61	61	61	-
NW-121*	Imperial Avalon Project	69	70	70	-	BA-6	69	69	69	69	69	69	69	-
NW-122*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-123	Imperial Avalon Project	65	65	65	-	BA-6	57	56	56	55	55	54	54	-
NW-124*	Imperial Avalon Project	68	68	68	-	BA-6	61	61	61	61	61	61	61	-
NW-125*	Imperial Avalon Project	69	69	69	-	BA-6	69	69	69	69	69	69	69	-
NW-126*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-127	Imperial Avalon Project	65	65	65	-	BA-6	57	57	57	57	57	57	57	-
NW-128*	Imperial Avalon Project	68	69	69	-	BA-6	61	61	61	61	61	61	61	-
NW-129*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-130*	Imperial Avalon Project	70	71	71	-	BA-6	70	70	70	70	70	70	70	-
NW-131	Imperial Avalon Project	66	66	66	A/E	BA-6	57	57	57	57	57	57	57	-
NW-132*	Imperial Avalon Project	69	69	69	-	BA-6	61	61	61	61	61	61	61	-
NW-133*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-134*	Imperial Avalon Project	71	71	71	-	BA-6	71	71	71	71	71	71	71	-
NW-135	Imperial Avalon Project	66	66	66	A/E	BA-6	57	57	57	57	57	57	57	-
NW-136*	Imperial Avalon Project	69	69	69	-	BA-6	61	61	61	61	61	61	61	-
NW-137*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-138*	Imperial Avalon Project	71	71	71	-	BA-6	71	71	71	71	71	71	71	-
NW-139	Imperial Avalon Project	66	66	66	A/E	BA-6	57	57	57	57	57	57	57	-
NW-140*	Imperial Avalon Project	70	70	70	-	BA-6	61	61	61	61	61	61	61	-
NW-141*	Imperial Avalon Project	71	71	71	-	BA-6	71	71	71	71	71	71	71	-
NW-142*	Imperial Avalon Project	71	72	72	-	BA-6	72	72	72	72	72	72	72	-
NW-143	Imperial Avalon Project	68	68	68	A/E	BA-6	61	61	61	61	61	61	61	-
NW-144*	Imperial Avalon Project	71	71	71	-	BA-6	66	66	66	66	66	66	66	-
NW-145*	Imperial Avalon Project	72	72	72	-	BA-6	72	72	72	72	72	72	72	-

Receptor #	Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Noise Impact Requiring Abatement Consideration	Barrier	Predicted Noise Level with Abatement (dBA): 8 feet	Predicted Noise Level with Abatement (dBA): 10 feet	Predicted Noise Level with Abatement (dBA): 12 feet	Predicted Noise Level with Abatement (dBA): 14 feet	Predicted Noise Level with Abatement (dBA): 16 feet	Predicted Noise Level with Abatement (dBA): 18 feet	Predicted Noise Level with Abatement (dBA): 20 feet	Reasonable and Feasible
NW-146*	Imperial Avalon Project	73	73	73	-	BA-6	73	73	73	73	73	73	72	-
NW-147	Imperial Avalon Project	67	67	67	A/E	BA-6	63	63	63	63	63	63	63	-
NW-148*	Imperial Avalon Project	70	70	70	-	BA-6	68	68	68	68	68	68	68	-
NW-149*	Imperial Avalon Project	71	71	71	-	BA-6	71	71	71	71	71	71	71	-
NW-150*	Imperial Avalon Project	71	71	71	-	BA-6	71	71	71	71	71	71	71	-
NW-151	Imperial Avalon Project	58	58	58	-	BA-6	58	58	58	58	58	58	58	-
NW-152*	Imperial Avalon Project	63	64	64	-	BA-6	64	64	64	64	64	64	64	-
NW-153*	Imperial Avalon Project	64	64	64	-	BA-6	64	64	64	64	64	64	64	-
NW-154*	Imperial Avalon Project	65	65	65	-	BA-6	65	65	65	65	65	65	65	-
NW-155	Imperial Avalon Project	63	63	63	-	BA-6	62	62	62	62	62	62	62	-
NW-156*	Imperial Avalon Project	66	66	66	-	BA-6	65	65	65	65	65	65	65	-
NW-157*	Imperial Avalon Project	66	67	67	-	BA-6	67	67	67	67	67	67	67	-
NW-158*	Imperial Avalon Project	67	67	67	-	BA-6	67	67	67	67	67	67	67	-
NW-159	Imperial Avalon Project	64	64	64	-	BA-6	63	63	63	63	63	63	63	-
NW-160	Imperial Avalon Project	66	66	66	-	BA-6	64	64	64	64	64	64	64	-
NW-161*	Imperial Avalon Project	69	70	70	-	BA-6	68	68	68	68	68	68	68	-
NW-162*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-163*	Imperial Avalon Project	70	71	71	-	BA-6	71	71	71	71	71	71	71	-
NW-164	Imperial Avalon Project	65	65	65	-	BA-6	64	64	64	64	64	64	64	-
NW-165*	Imperial Avalon Project	69	69	69	-	BA-6	67	67	67	67	67	67	67	-
NW-166*	Imperial Avalon Project	69	69	69	-	BA-6	69	69	69	68	68	68	68	-
NW-167*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-168	Imperial Avalon Project	55	54	54	-	BA-6	54	54	54	54	54	54	54	-
NW-169*	Imperial Avalon Project	58	58	58	-	BA-6	58	58	58	58	58	58	58	-
NW-170*	Imperial Avalon Project	61	61	61	-	BA-6	61	61	61	61	61	61	61	-
NW-171*	Imperial Avalon Project	62	62	62	-	BA-6	62	62	62	62	62	62	62	-
NW-172	Imperial Avalon Project	61	61	61	-	BA-6	61	61	61	61	61	61	61	-
NW-173*	Imperial Avalon Project	64	65	65	-	BA-6	65	65	65	65	65	65	65	-
NW-174*	Imperial Avalon Project	65	66	66	-	BA-6	66	66	66	66	66	66	66	-
NW-175*	Imperial Avalon Project	66	66	66	-	BA-6	66	66	66	66	66	66	66	-
NW-176	Imperial Avalon Project	63	63	63	-	BA-6	63	63	63	63	63	63	63	-
NW-177	Imperial Avalon Project	65	65	65	-	BA-6	64	64	64	64	64	64	64	-
NW-178*	Imperial Avalon Project	68	68	68	-	BA-6	67	67	67	67	67	67	67	-
NW-179*	Imperial Avalon Project	69	69	69	-	BA-6	69	69	69	69	69	69	69	-
NW-180*	Imperial Avalon Project	69	69	69	-	BA-6	69	69	69	69	69	69	69	-
NW-181	Imperial Avalon Project	64	64	64	-	BA-6	63	63	63	63	63	63	63	-
NW-182*	Imperial Avalon Project	67	67	67	-	BA-6	66	66	66	66	66	66	66	-
NW-183*	Imperial Avalon Project	68	68	68	-	BA-6	68	68	68	68	68	68	68	-
NW-184*	Imperial Avalon Project	68	68	68	-	BA-6	68	68	68	68	68	68	68	-
NW-185	Imperial Avalon Project	45	45	45	-	BA-6	45	45	45	45	45	45	45	-
NW-186*	Imperial Avalon Project	49	49	49	-	BA-6	49	49	49	49	49	49	49	-
NW-187*	Imperial Avalon Project	52	52	52	-	BA-6	52	52	52	52	52	52	52	-
NW-188*	Imperial Avalon Project	53	53	53	-	BA-6	53	53	53	53	53	53	53	-
NW-189	Imperial Avalon Project	56	56	56	-	BA-6	56	56	56	56	56	56	56	-
NW-190*	Imperial Avalon Project	61	61	61	-	BA-6	61	61	61	61	61	61	61	-
NW-191*	Imperial Avalon Project	61	62	62	-	BA-6	62	62	62	62	62	62	62	-

Receptor #	Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Noise Impact Requiring Abatement Consideration	Barrier	Predicted Noise Level with Abatement (dBA): 8 feet	Predicted Noise Level with Abatement (dBA): 10 feet	Predicted Noise Level with Abatement (dBA): 12 feet	Predicted Noise Level with Abatement (dBA): 14 feet	Predicted Noise Level with Abatement (dBA): 16 feet	Predicted Noise Level with Abatement (dBA): 18 feet	Predicted Noise Level with Abatement (dBA): 20 feet	Reasonable and Feasible
NW-192*	Imperial Avalon Project	62	62	62	-	BA-6	62	62	62	62	62	62	62	-
NW-193	Imperial Avalon Project	60	60	60	-	BA-6	60	60	60	60	60	60	60	-
NW-194*	Imperial Avalon Project	63	63	63	-	BA-6	63	63	63	63	63	63	63	-
NW-195*	Imperial Avalon Project	63	64	64	-	BA-6	64	64	64	64	64	64	64	-
NW-196*	Imperial Avalon Project	64	64	64	-	BA-6	64	64	64	64	64	64	64	-
NW-197	Imperial Avalon Project	62	62	62	-	BA-6	61	61	61	61	61	61	61	-
NW-198*	Imperial Avalon Project	64	64	64	-	BA-6	62	62	62	62	62	62	62	-
NW-199*	Imperial Avalon Project	65	65	65	-	BA-6	65	64	64	63	63	63	63	-
NW-200*	Imperial Avalon Project	65	65	65	-	BA-6	65	65	65	65	64	64	64	-
NW-201	Imperial Avalon Project	57	57	57	-	BA-6	54	54	54	54	54	53	53	-
NW-202*	Imperial Avalon Project	60	60	60	-	BA-6	54	53	53	52	52	51	51	-
NW-203*	Imperial Avalon Project	62	62	62	-	BA-6	62	60	59	58	58	57	57	-
NW-204*	Imperial Avalon Project	62	62	62	-	BA-6	62	62	62	62	60	59	58	-
NW-205	Imperial Avalon Project	64	64	64	-	BA-6	63	63	63	63	63	63	63	-
NW-206*	Imperial Avalon Project	68	68	68	-	BA-6	67	67	67	67	67	67	67	-
NW-207*	Imperial Avalon Project	69	69	69	-	BA-6	69	69	68	68	68	68	68	-
NW-208*	Imperial Avalon Project	69	69	69	-	BA-6	69	69	69	69	69	69	69	-
NW-209	Imperial Avalon Project	65	65	65	-	BA-6	65	65	65	65	65	65	65	-
NW-210*	Imperial Avalon Project	69	69	69	-	BA-6	68	68	68	68	68	68	68	-
NW-211*	Imperial Avalon Project	70	70	70	-	BA-6	70	70	70	70	70	70	70	-
NW-212*	Imperial Avalon Project	71	71	71	-	BA-6	71	71	71	71	71	71	71	-
NW-102	Imperial Avalon Project	61	61	61	-	BA-7	59	59	59	59	59	59	59	Yes
NW-103*	Imperial Avalon Project	65	65	65	-	BA-7	62	62	62	62	62	62	62	Yes
NW-104*	Imperial Avalon Project	67	67	67	-	BA-7	66	65	65	65	64	64	64	Yes
NW-105*	Imperial Avalon Project	68	68	68	-	BA-7	68	68	68	68	68	68	68	Yes
NW-106	Imperial Avalon Project	51	51	51	-	BA-7	51	51	51	51	51	51	51	Yes
NW-107	Imperial Avalon Project	62	62	62	-	BA-7	57	57	57	57	57	57	57	Yes
NW-108*	Imperial Avalon Project	67	68	68	-	BA-7	61	61	61	61	61	61	61	Yes
NW-109*	Imperial Avalon Project	69	70	70	-	BA-7	69	69	69	69	69	69	69	Yes
NW-110*	Imperial Avalon Project	70	70	70	-	BA-7	70	70	70	70	70	70	70	Yes
NW-111	Imperial Avalon Project	63	63	63	-	BA-7	57	57	57	57	57	57	57	Yes
NW-112*	Imperial Avalon Project	68	68	68	-	BA-7	61	61	61	61	61	61	61	Yes
NW-113*	Imperial Avalon Project	69	70	70	-	BA-7	69	69	69	69	69	69	69	Yes
NW-114*	Imperial Avalon Project	70	70	70	-	BA-7	70	70	70	70	70	70	70	Yes
NW-115	Imperial Avalon Project	63	63	63	-	BA-7	57	57	57	57	57	57	57	Yes
NW-116*	Imperial Avalon Project	68	68	68	-	BA-7	61	61	61	61	61	61	61	Yes
NW-117*	Imperial Avalon Project	69	70	70	-	BA-7	69	69	69	69	69	69	69	Yes
NW-118*	Imperial Avalon Project	70	70	70	-	BA-7	70	70	70	70	70	70	70	Yes
NW-119	Imperial Avalon Project	64	64	64	-	BA-7	58	58	58	58	58	58	58	Yes
NW-120*	Imperial Avalon Project	68	68	68	-	BA-7	61	61	61	61	61	61	61	Yes
NW-121*	Imperial Avalon Project	69	70	70	-	BA-7	69	69	69	69	69	69	69	Yes
NW-122*	Imperial Avalon Project	70	70	70	-	BA-7	70	70	70	70	70	70	70	Yes
NW-123	Imperial Avalon Project	65	65	65	-	BA-7	57	57	56	55	55	55	54	Yes
NW-124*	Imperial Avalon Project	68	68	68	-	BA-7	64	64	64	64	64	64	64	Yes
NW-125*	Imperial Avalon Project	69	69	69	-	BA-7	69	69	69	69	69	69	69	Yes
NW-126*	Imperial Avalon Project	70	70	70	-	BA-7	70	70	70	70	70	70	70	Yes

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NW-127	Imperial Avalon Project	65	65	65	-	BA-7	57	57	57	57	57	57	57	Yes
NW-128*	Imperial Avalon Project	68	69	69	-	BA-7	64	64	64	64	64	64	64	Yes
NW-129*	Imperial Avalon Project	70	70	70	-	BA-7	67	67	67	67	67	67	67	Yes
NW-130*	Imperial Avalon Project	70	71	71	-	BA-7	68	68	68	68	68	68	68	Yes
NW-131	Imperial Avalon Project	66	66	66	A/E	BA-7	57	57	57	57	57	57	57	Yes
NW-132*	Imperial Avalon Project	69	69	69	-	BA-7	65	65	65	65	65	65	65	Yes
NW-133*	Imperial Avalon Project	70	70	70	-	BA-7	67	67	67	67	67	67	67	Yes
NW-134*	Imperial Avalon Project	71	71	71	-	BA-7	69	69	69	69	69	69	69	Yes
NW-135	Imperial Avalon Project	66	66	66	A/E	BA-7	56	56	56	56	56	56	56	Yes
NW-136*	Imperial Avalon Project	69	69	69	-	BA-7	65	65	65	65	65	65	65	Yes
NW-137*	Imperial Avalon Project	70	70	70	-	BA-7	67	67	67	67	67	67	67	Yes
NW-138*	Imperial Avalon Project	71	71	71	-	BA-7	68	68	68	68	68	68	68	Yes
NW-139	Imperial Avalon Project	66	66	66	A/E	BA-7	56	56	56	56	56	56	56	Yes
NW-140*	Imperial Avalon Project	70	70	70	-	BA-7	65	65	65	65	65	65	65	Yes
NW-141*	Imperial Avalon Project	71	71	71	-	BA-7	67	67	67	67	67	67	67	Yes
NW-142*	Imperial Avalon Project	71	72	72	-	BA-7	69	69	69	69	69	69	69	Yes
NW-143	Imperial Avalon Project	68	68	68	A/E	BA-7	59	59	59	59	59	59	59	Yes
NW-144*	Imperial Avalon Project	71	71	71	-	BA-7	66	66	66	66	66	66	66	Yes
NW-145*	Imperial Avalon Project	72	72	72	-	BA-7	69	69	69	69	69	69	69	Yes
NW-146*	Imperial Avalon Project	73	73	73	-	BA-7	70	69	69	68	68	68	68	Yes
NW-147	Imperial Avalon Project	67	67	67	A/E	BA-7	60	60	60	60	60	60	60	Yes
NW-148*	Imperial Avalon Project	70	70	70	-	BA-7	64	64	64	64	64	64	64	Yes
NW-149*	Imperial Avalon Project	71	71	71	-	BA-7	66	66	66	66	66	66	66	Yes
NW-150*	Imperial Avalon Project	71	71	71	-	BA-7	68	68	68	68	68	68	68	Yes
NW-151	Imperial Avalon Project	58	58	58	-	BA-7	56	56	56	56	56	56	56	Yes
NW-152*	Imperial Avalon Project	63	64	64	-	BA-7	60	60	60	60	60	60	60	Yes
NW-153*	Imperial Avalon Project	64	64	64	-	BA-7	61	61	61	61	61	61	61	Yes
NW-154*	Imperial Avalon Project	65	65	65	-	BA-7	62	62	62	62	62	62	62	Yes
NW-155	Imperial Avalon Project	63	63	63	-	BA-7	58	58	58	58	58	58	58	Yes
NW-156*	Imperial Avalon Project	66	66	66	-	BA-7	58	58	58	58	58	58	58	Yes
NW-157*	Imperial Avalon Project	66	67	67	-	BA-7	59	59	59	59	59	59	59	Yes
NW-158*	Imperial Avalon Project	67	67	67	-	BA-7	61	61	61	61	61	61	61	Yes
NW-159	Imperial Avalon Project	64	64	64	-	BA-7	59	59	59	59	59	59	59	Yes
NW-160	Imperial Avalon Project	66	66	66	A/E	BA-7	60	60	60	60	60	60	60	Yes
NW-161*	Imperial Avalon Project	69	70	70	-	BA-7	64	64	64	64	64	64	64	Yes
NW-162*	Imperial Avalon Project	70	70	70	-	BA-7	65	65	65	65	65	65	65	Yes
NW-163*	Imperial Avalon Project	70	71	71	-	BA-7	67	67	67	67	67	67	67	Yes
NW-164	Imperial Avalon Project	65	65	65	-	BA-7	60	60	60	60	60	60	60	Yes
NW-165*	Imperial Avalon Project	69	69	69	-	BA-7	63	63	63	63	63	63	63	Yes
NW-166*	Imperial Avalon Project	69	69	69	-	BA-7	64	64	63	62	62	62	61	Yes
NW-167*	Imperial Avalon Project	70	70	70	-	BA-7	66	66	66	66	66	66	66	Yes
NW-168	Imperial Avalon Project	55	54	54	-	BA-7	53	53	53	53	53	53	53	Yes
NW-169*	Imperial Avalon Project	58	58	58	-	BA-7	57	57	57	57	57	57	57	Yes
NW-170*	Imperial Avalon Project	61	61	61	-	BA-7	59	59	59	59	59	59	59	Yes
NW-171*	Imperial Avalon Project	62	62	62	-	BA-7	61	61	61	61	61	61	61	Yes
NW-172	Imperial Avalon Project	61	61	61	-	BA-7	57	57	57	57	57	57	57	Yes

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NW-173*	Imperial Avalon Project	64	65	65	-	BA-7	59	59	59	59	59	59	59	Yes
NW-174*	Imperial Avalon Project	65	66	66	-	BA-7	60	60	60	60	60	60	60	Yes
NW-175*	Imperial Avalon Project	66	66	66	-	BA-7	61	61	61	61	61	61	61	Yes
NW-176	Imperial Avalon Project	63	63	63	-	BA-7	58	58	58	58	58	58	58	Yes
NW-177	Imperial Avalon Project	65	65	65	-	BA-7	60	60	60	60	60	60	60	Yes
NW-178*	Imperial Avalon Project	68	68	68	-	BA-7	63	63	63	63	63	63	63	Yes
NW-179*	Imperial Avalon Project	69	69	69	-	BA-7	64	64	64	64	64	64	64	Yes
NW-180*	Imperial Avalon Project	69	69	69	-	BA-7	65	65	65	65	65	65	65	Yes
NW-181	Imperial Avalon Project	64	64	64	-	BA-7	59	59	59	59	59	59	59	Yes
NW-182*	Imperial Avalon Project	67	67	67	-	BA-7	61	61	61	61	61	61	61	Yes
NW-183*	Imperial Avalon Project	68	68	68	-	BA-7	63	63	63	63	63	63	63	Yes
NW-184*	Imperial Avalon Project	68	68	68	-	BA-7	64	64	64	64	64	64	64	Yes
NW-185	Imperial Avalon Project	45	45	45	-	BA-7	45	45	45	44	44	44	44	Yes
NW-186*	Imperial Avalon Project	49	49	49	-	BA-7	49	49	48	48	48	48	48	Yes
NW-187*	Imperial Avalon Project	52	52	52	-	BA-7	52	52	52	52	52	52	52	Yes
NW-188*	Imperial Avalon Project	53	53	53	-	BA-7	53	53	53	53	53	52	52	Yes
NW-189	Imperial Avalon Project	56	56	56	-	BA-7	53	52	51	50	49	48	48	Yes
NW-190*	Imperial Avalon Project	61	61	61	-	BA-7	54	53	51	50	50	49	48	Yes
NW-191*	Imperial Avalon Project	61	62	62	-	BA-7	55	54	53	51	51	50	50	Yes
NW-192*	Imperial Avalon Project	62	62	62	-	BA-7	57	57	56	55	55	54	54	Yes
NW-193	Imperial Avalon Project	60	60	60	-	BA-7	55	55	53	52	51	50	50	Yes
NW-194*	Imperial Avalon Project	63	63	63	-	BA-7	57	55	54	53	52	52	51	Yes
NW-195*	Imperial Avalon Project	63	64	64	-	BA-7	57	56	55	53	53	52	52	Yes
NW-196*	Imperial Avalon Project	64	64	64	-	BA-7	59	58	57	56	55	55	55	Yes
NW-197	Imperial Avalon Project	62	62	62	-	BA-7	57	56	54	53	53	52	52	Yes
NW-198*	Imperial Avalon Project	64	64	64	-	BA-7	59	58	57	56	55	55	55	Yes
NW-199*	Imperial Avalon Project	65	65	65	-	BA-7	60	59	58	57	56	56	56	Yes
NW-200*	Imperial Avalon Project	65	65	65	-	BA-7	62	61	59	59	58	57	57	Yes
NW-201	Imperial Avalon Project	57	57	57	-	BA-7	53	53	52	51	50	50	50	Yes
NW-202*	Imperial Avalon Project	60	60	60	-	BA-7	56	56	55	55	54	54	54	Yes
NW-203*	Imperial Avalon Project	62	62	62	-	BA-7	59	58	57	57	56	56	56	Yes
NW-204*	Imperial Avalon Project	62	62	62	-	BA-7	60	59	58	58	57	57	57	Yes
NW-205	Imperial Avalon Project	64	64	64	-	BA-7	60	60	58	58	58	58	57	Yes
NW-206*	Imperial Avalon Project	68	68	68	-	BA-7	63	63	62	61	61	61	60	Yes
NW-207*	Imperial Avalon Project	69	69	69	-	BA-7	64	64	63	62	62	62	62	Yes
NW-208*	Imperial Avalon Project	69	69	69	-	BA-7	65	65	64	63	63	63	62	Yes
NW-209	Imperial Avalon Project	65	65	65	-	BA-7	63	63	62	62	62	62	62	Yes
NW-210*	Imperial Avalon Project	69	69	69	-	BA-7	65	65	64	64	63	63	63	Yes
NW-211*	Imperial Avalon Project	70	70	70	-	BA-7	66	66	66	65	65	65	65	Yes
NW-212*	Imperial Avalon Project	71	71	71	-	BA-7	68	67	67	66	66	66	66	Yes
NW-253	Carson Triangle Project	75	76	76	A/E	BA-7	69	68	67	67	66	66	66	Yes
NW-254	Carson Triangle Project	76	76	76	A/E	BA-7	69	68	67	67	67	66	66	Yes
NW-255	Carson Triangle Project	75	75	75	A/E	BA-7	68	67	66	66	66	66	65	Yes
NW-256	Carson Triangle Project	74	74	74	A/E	BA-7	67	67	66	65	65	65	64	Yes
NW-257	Carson Triangle Project	73	73	73	A/E	BA-7	67	66	65	64	64	64	64	Yes
NW-258	Carson Triangle Project	72	72	72	A/E	BA-7	67	66	65	64	64	64	64	Yes

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NW-259	Carson Triangle Project	72	72	72	A/E	BA-7	67	66	65	64	64	64	63	Yes
NW-260	Carson Triangle Project	72	72	72	A/E	BA-7	67	66	65	64	64	64	63	Yes
NW-261	Carson Triangle Project	71	72	72	A/E	BA-7	66	65	64	63	63	62	62	Yes
NW-262	Carson Triangle Project	74	75	75	A/E	BA-7	68	67	66	65	65	65	64	Yes
NW-263	Carson Triangle Project	77	77	77	A/E	BA-7	71	71	70	70	70	70	70	Yes
NW-264	Carson Triangle Project	77	77	77	A/E	BA-7	72	71	71	71	70	70	70	Yes
NW-265	Carson Triangle Project	71	71	71	A/E	BA-7	66	66	65	64	64	64	63	Yes
NW-266	Carson Triangle Project	70	70	70	A/E	BA-7	66	66	65	64	64	64	64	Yes
NW-267	Carson Triangle Project	77	77	77	A/E	BA-7	73	72	72	72	72	72	72	Yes
NW-268	Carson Triangle Project	68	68	68	A/E	BA-7	64	64	63	63	63	63	63	Yes
NW-269	Carson Triangle Project	75	76	76	A/E	BA-7	70	70	69	69	69	69	69	Yes
NW-270	Carson Triangle Project	73	73	73	A/E	BA-7	66	65	64	64	64	64	63	Yes
NW-271	Carson Triangle Project	67	66	66	A/E	BA-7	65	65	65	65	65	65	65	Yes
NW-272	Carson Triangle Project	73	73	73	A/E	BA-7	69	69	68	68	68	68	68	Yes
NW-273*	Carson Triangle Project	77	77	77	-	BA-7	76	76	76	76	76	76	76	Yes
NW-274*	Carson Triangle Project	72	72	72	-	BA-7	71	71	71	71	71	71	71	Yes
NW-275*	Carson Triangle Project	67	67	67	-	BA-7	67	67	67	67	67	67	67	Yes
NW-276*	Carson Triangle Project	52	53	53	-	BA-7	52	52	52	52	52	52	52	Yes
NW-253	Carson Triangle Project	75	76	76	A/E	BA-8	75	75	75	75	74	74	73	-
NW-254	Carson Triangle Project	76	76	76	A/E	BA-8	75	75	75	75	75	73	72	-
NW-255	Carson Triangle Project	75	75	75	A/E	BA-8	74	74	74	74	74	73	71	-
NW-256	Carson Triangle Project	74	74	74	A/E	BA-8	73	73	73	73	73	72	70	-
NW-257	Carson Triangle Project	73	73	73	A/E	BA-8	72	72	72	72	72	71	70	-
NW-258	Carson Triangle Project	72	72	72	A/E	BA-8	71	71	71	71	71	70	69	-
NW-259	Carson Triangle Project	72	72	72	A/E	BA-8	71	71	71	70	70	70	69	-
NW-260	Carson Triangle Project	72	72	72	A/E	BA-8	71	71	71	71	70	70	69	-
NW-261	Carson Triangle Project	71	72	72	A/E	BA-8	71	71	71	71	70	70	69	-
NW-262	Carson Triangle Project	74	75	75	A/E	BA-8	73	73	73	73	73	72	70	-
NW-263	Carson Triangle Project	77	77	77	A/E	BA-8	76	76	76	76	74	70	67	-
NW-264	Carson Triangle Project	77	77	77	A/E	BA-8	77	77	76	74	71	68	66	-
NW-265	Carson Triangle Project	71	71	71	A/E	BA-8	70	70	70	70	70	68	68	-
NW-266	Carson Triangle Project	70	70	70	A/E	BA-8	69	69	69	69	68	67	67	-
NW-267	Carson Triangle Project	77	77	77	A/E	BA-8	77	77	73	70	68	66	65	-
NW-268	Carson Triangle Project	68	68	68	A/E	BA-8	67	67	67	66	65	64	63	-
NW-269	Carson Triangle Project	75	76	76	A/E	BA-8	76	76	76	76	76	76	76	-
NW-270	Carson Triangle Project	73	73	73	A/E	BA-8	73	73	73	73	73	73	73	-
NW-271	Carson Triangle Project	67	66	66	A/E	BA-8	63	63	63	63	63	63	63	-
NW-272	Carson Triangle Project	73	73	73	A/E	BA-8	73	73	73	73	73	73	73	-
NW-273*	Carson Triangle Project	77	77	77	-	BA-8	72	72	72	72	72	72	72	-
NW-274*	Carson Triangle Project	72	72	72	-	BA-8	68	68	68	68	68	68	68	-
NW-275*	Carson Triangle Project	67	67	67	-	BA-8	64	64	64	64	64	64	64	-
NW-276*	Carson Triangle Project	52	53	53	-	BA-8	53	53	53	53	53	53	53	-
NW-277*	Carson Triangle Project	52	53	53	-	BA-8	52	52	52	52	52	52	52	-
NW-429	21311 Garston Ave	60	60	60	-	BA-9	59	59	58	57	57	57	57	-
NW-430	802 E 213th St	59	59	59	-	BA-9	58	57	56	55	55	54	54	-
NW-431	21303 Selwyn Ave	65	65	65	-	BA-9	66	65	65	65	65	65	64	-

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NW-432	21309 Selwyn Ave	64	64	64	-	BA-9	65	65	64	64	64	64	64	-
NW-433	21302 Selwyn Ave	68	68	69	A/E	BA-9	67	66	65	65	65	64	64	-
NW-434	865 E 214th St	66	66	66	A/E	BA-9	66	65	65	64	64	63	63	-
NW-435	859 E Desford St	66	66	65	-	BA-9	65	64	63	62	62	62	62	-
NW-436	863 E Desford St	65	65	64	-	BA-9	65	63	62	62	61	61	61	-
NW-437	854 E Desford St	65	65	64	-	BA-9	63	63	62	62	61	61	61	-
NW-438	860 E Desford St	66	66	65	-	BA-9	64	64	63	63	63	63	63	-
NE-1	1152 E 215th Pl	64	64	64	-	BA-4	64	64	64	64	64	64	64	-
NE-2	1146 E 215th Pl	59	60	60	-	BA-4	59	59	59	59	58	58	58	-
NE-3	1142 E 215th Pl	60	60	60	-	BA-4	59	59	59	59	59	59	59	-
NE-4	1136 E 215th Pl	60	61	61	-	BA-4	60	60	60	60	60	60	60	-
NE-5	1132 E 215th Pl	61	61	61	-	BA-4	60	60	60	60	60	60	60	-
NE-6	1126 E 215th Pl	61	62	62	-	BA-4	60	60	60	60	60	60	60	-
NE-7	1122 E 215th Pl	62	62	62	-	BA-4	61	61	61	60	60	60	60	-
NE-8	1116 E 215th Pl	62	62	62	-	BA-4	61	61	60	60	60	60	60	-
NE-9	1112 E 215th Pl	68	69	68	A/E	BA-4	68	68	68	68	68	68	68	-
NE-10	1111 E 215th Pl	62	62	62	-	BA-4	61	61	61	61	60	60	60	-
NE-11	1107 E 215th Pl	62	62	62	-	BA-4	60	60	60	59	59	59	59	-
NE-12	1101 E 215th Pl	64	64	64	-	BA-4	63	62	62	62	62	62	62	-
NE-13	21417 S Troyton Ln	67	68	67	A/E	BA-4	66	66	66	66	66	66	66	-
NE-14	21411 S Troyton Ln	67	68	68	A/E	BA-4	66	66	65	65	65	65	65	-
NE-15	21406 S Troyton Ln	62	64	64	-	BA-4	61	61	60	60	60	60	60	-
NE-16	21403 S Troyton Ln	67	68	68	A/E	BA-4	65	64	64	63	63	63	63	-
NE-17	21309 S Troyton Ln	68	68	68	A/E	BA-4	64	63	62	62	61	61	61	-
NE-18	21301 S Troyton Ln	62	62	62	-	BA-4	59	58	58	57	57	57	57	-
NE-32	340 M.L.K. Jr. St	67	67	67	A/E	BA-5	64	63	62	62	61	61	61	-
NE-33	340 M.L.K. Jr. St	66	66	66	A/E	BA-5	63	63	62	61	60	60	60	-
SE-2	1731 E Abri St	62	63	63	-	BA-1	61	61	60	60	60	60	60	-
SE-3	1725 E Abri St	61	62	62	-	BA-1	60	60	59	59	59	59	59	-
SE-4	1726 E Abri St	65	65	65	-	BA-1	63	63	62	62	62	62	62	-
SE-5	1727 E Bach St	64	65	65	-	BA-1	62	62	61	61	61	61	61	-
SE-6	1721 E Bach St	59	59	59	-	BA-1	59	59	59	59	59	59	59	-
SE-7	1724 E Bach St	68	69	69	A/E	BA-1	67	67	67	67	67	67	67	-
SE-8	1718 E Bach St	61	62	62	-	BA-1	60	59	59	59	59	59	59	-
SE-9	1714 E Bach St	61	61	61	-	BA-1	59	59	59	59	59	59	59	-
SE-10	1708 E Bach St	63	63	63	-	BA-1	62	62	62	62	62	62	62	-
SE-2	1731 E Abri St	62	63	63	-	BA-2	61	60	59	59	58	58	58	-
SE-3	1725 E Abri St	61	62	62	-	BA-2	61	60	59	59	58	58	57	-
SE-4	1726 E Abri St	65	65	65	-	BA-2	63	62	61	60	59	58	58	-
SE-5	1727 E Bach St	64	65	65	-	BA-2	63	61	60	59	58	57	57	-
SE-6	1721 E Bach St	59	59	59	-	BA-2	59	59	59	59	59	59	59	-
SE-7	1724 E Bach St	68	69	69	A/E	BA-2	67	65	64	63	63	63	63	-
SE-8	1718 E Bach St	61	62	62	-	BA-2	62	61	61	61	61	61	61	-
SE-9	1714 E Bach St	61	61	61	-	BA-2	61	61	61	61	61	61	61	-
SE-10	1708 E Bach St	63	63	63	-	BA-2	63	63	63	63	63	63	63	-
SE-20	1534 E Bach St	65	66	66	-	BA-3	65	65	65	65	65	65	65	Yes

Receptor #	Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Noise Impact Requiring Abatement Consideration	Barrier	Predicted Noise Level with Abatement (dBA): 8 feet	Predicted Noise Level with Abatement (dBA): 10 feet	Predicted Noise Level with Abatement (dBA): 12 feet	Predicted Noise Level with Abatement (dBA): 14 feet	Predicted Noise Level with Abatement (dBA): 16 feet	Predicted Noise Level with Abatement (dBA): 18 feet	Predicted Noise Level with Abatement (dBA): 20 feet	Reasonable and Feasible
SE-21	1525 E Bach St	64	64	64	-	BA-3	63	63	63	63	63	63	63	Yes
SE-22	1518 E Bach St	65	65	65	-	BA-3	65	65	65	65	65	65	65	Yes
SE-23	22047 Lostine Ave	64	65	64	-	BA-3	64	63	63	63	63	63	63	Yes
SE-24	22041 Lostine Ave	62	63	63	-	BA-3	63	62	62	62	62	62	62	Yes
SE-25	22035 Lostine Ave	66	67	66	A/E	BA-3	64	63	63	62	62	62	62	Yes
SE-26	1480 E Bach St	70	70	70	A/E	BA-3	66	66	65	64	64	64	63	Yes
SE-27	1474 E Bach St	70	71	70	A/E	BA-3	66	66	65	64	63	63	63	Yes
SE-28	1468 E Bach St	70	71	70	A/E	BA-3	66	66	64	64	63	63	63	Yes
SE-29	1462 E Bach St	70	71	71	A/E	BA-3	66	66	64	63	63	63	62	Yes
SE-30	1456 E Bach St	70	70	70	A/E	BA-3	66	66	64	63	63	62	62	Yes
SE-31	1450 E Bach St	69	70	70	A/E	BA-3	66	66	64	63	62	62	62	Yes
SE-32	1442 E Bach St	69	70	70	A/E	BA-3	66	65	64	63	62	61	61	Yes
SE-33	1440 E Bach St	69	69	69	A/E	BA-3	66	65	64	63	62	61	61	Yes
SE-34	1432 E Bach St	68	68	68	A/E	BA-3	65	64	63	62	61	60	60	Yes
SE-35	1436 E Bach St	69	70	70	A/E	BA-3	66	65	64	62	61	61	60	Yes
SE-36	1404 E 220th St	68	68	68	A/E	BA-3	64	64	62	61	60	60	59	Yes
SE-37	1352 E 220th St	67	67	67	A/E	BA-3	64	63	62	61	60	59	59	Yes
SE-38	1346 E 220th St	66	66	66	A/E	BA-3	63	62	61	61	60	59	59	Yes
SE-39	21986 Acarus Ave	64	65	65	A/E	BA-3	62	61	60	59	58	58	57	Yes
SE-40	21979 Acarus Ave	66	67	66	A/E	BA-3	63	63	62	61	60	59	59	Yes
SE-41	21958 Acarus Ave	64	65	65	A/E	BA-3	62	61	60	59	58	57	57	Yes
SE-42	21935 Acarus Ave	69	69	69	A/E	BA-3	65	64	63	62	61	60	59	Yes
SE-43	21916 Acarus Ave	68	69	68	A/E	BA-3	65	64	63	61	60	60	59	Yes
SE-44	21905 Acarus Ave	65	66	65	A/E	BA-3	63	62	61	60	60	60	59	Yes
SE-45	1232 E 218th St	69	69	69	-	BA-3	65	64	62	61	60	60	59	Yes
SE-46	1227 E 218th St	69	69	69	-	BA-3	65	64	62	61	61	60	60	Yes
SE-47	1222 Cloverbrook St	69	70	69	-	BA-3	64	63	62	61	60	60	59	Yes
SE-48	1219 Cloverbrook St	58	59	58	-	BA-3	56	55	54	53	53	52	52	Yes
SE-49	1211 Ashmill St	59	59	59	-	BA-3	58	58	58	57	57	57	57	Yes
SW-10	21820 Bonita St	61	62	62	-	BA-10	60	60	60	60	60	60	60	Yes
SW-11	21807 Foley Ave	63	63	63	-	BA-10	61	61	61	61	61	61	61	Yes
SW-12	21809 Foley Ave	63	64	64	-	BA-10	61	61	61	61	61	61	61	Yes
SW-13	21800 Foley Ave	65	66	66	A/E	BA-10	60	60	60	60	60	60	60	Yes
SW-14	21809 S Edgar St	67	67	67	A/E	BA-10	62	60	60	59	59	58	58	Yes
SW-15	21814 S Edgar St	70	71	71	A/E	BA-10	64	63	62	61	60	60	59	Yes
SW-16	1113 E 219th St	71	71	71	A/E	BA-10	65	64	63	62	61	61	60	Yes
SW-17	1105 E 219th St	69	70	70	A/E	BA-10	63	62	61	61	60	59	59	Yes
SW-18	1105 E Lauder St	69	70	70	A/E	BA-10	64	63	62	61	60	60	59	Yes
SW-19	1111 E Lauder St	70	71	71	A/E	BA-10	65	63	62	61	61	60	59	Yes
SW-20	1117 E Lauder St	71	72	72	A/E	BA-10	66	64	63	62	61	61	60	Yes
SW-21	1121 E Lauder St	72	73	73	A/E	BA-10	66	65	64	63	62	62	61	Yes
SW-22	1125 E Lauder St	72	73	73	A/E	BA-10	66	65	64	63	63	62	61	Yes
SW-23	1128 E Lauder St	70	70	70	A/E	BA-10	65	63	62	61	61	60	60	Yes
SW-24	1132 E Lauder St	70	71	70	A/E	BA-10	65	63	63	62	61	61	60	Yes
SW-25	1136 E Lauder St	71	72	72	A/E	BA-10	66	65	64	63	62	62	61	Yes
SW-26	1147 E 220th St	71	72	72	A/E	BA-10	66	65	64	63	62	62	61	Yes

Receptor #	Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Noise Impact Requiring Abatement Consideration	Barrier	Predicted Noise Level with Abatement (dBA): 8 feet	Predicted Noise Level with Abatement (dBA): 10 feet	Predicted Noise Level with Abatement (dBA): 12 feet	Predicted Noise Level with Abatement (dBA): 14 feet	Predicted Noise Level with Abatement (dBA): 16 feet	Predicted Noise Level with Abatement (dBA): 18 feet	Predicted Noise Level with Abatement (dBA): 20 feet	Reasonable and Feasible
SW-27	1151 E 220th St	72	72	72	A/E	BA-10	66	65	64	63	63	62	62	Yes
SW-28	1160 E 220th St	69	70	69	A/E	BA-10	64	62	61	60	60	59	59	Yes
SW-29	1200 E 220th St	70	71	71	A/E	BA-10	67	65	64	63	63	62	61	Yes
SW-30	1219 E Jay St	65	66	66	A/E	BA-10	64	62	62	61	60	60	59	Yes
SW-31	1225 E Jay St	65	66	66	A/E	BA-10	63	62	62	62	61	61	60	Yes
SW-32	1234 E Jay St	68	68	68	A/E	BA-10	65	63	62	62	61	60	60	Yes
SW-33	1240 E Jay St	70	71	71	A/E	BA-10	67	65	64	63	63	62	61	Yes
SW-34	1245 E Renton St	63	64	64	A/E	BA-10	62	61	60	60	59	59	58	Yes
SW-35	1256 E 220th St	66	67	67	A/E	BA-10	65	63	62	61	61	60	60	Yes
SW-36	1259 E 222nd St	64	65	65	-	BA-10	63	62	62	61	61	61	61	Yes
SW-37	1263 E 222nd St	65	65	66	-	BA-10	64	63	63	62	62	62	61	Yes

Source: (Ambient Air Quality & Noise Consulting, LLC 2026)
Notes: A/E = Future noise conditions approach or exceed the Noise Abatement Criteria; AVE= Avenue; Blvd= Boulevard; Ln= Lane; Pl = Place; ST = Street; * = not located on ground flood; - = No

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2.3.7.4 Avoidance, Minimization, and/or Abatement Measures

The following avoidance and minimization measure is proposed for construction:

Measure NOI-1 During construction, California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will make sure the following measures would be implemented during Project construction to reduce the potential for temporary noise impacts.

- All construction equipment shall conform to SSP 14-8.02, Noise Control, which requires preparation of a Noise Control Plan and noise monitoring.
-
- When feasible, noise-generating construction activities shall be restricted to between 7:00 a.m. and 7:00 p.m. on weekdays, with no construction occurring on weekends or holidays. If work is necessary outside of these hours, Caltrans would require the contractor to implement a construction noise monitoring program and provide additional noise controls where practical and feasible.
-
- Pile driving activities would be limited to daytime hours only.

Preliminary Traffic Noise Abatement Evaluation

Noise abatement is considered where noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. According to 23 CFR 772(13)(c) and 772(15)(c), federal funding may be used for the following abatement measures:

- Construction of noise barriers, including acquisition of property rights, either within or outside the highway ROW.
- Traffic management measures including, but not limited to, traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.
- Alteration of horizontal and vertical alignments.
- Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development which would be adversely impacted by traffic noise.
- Noise insulation of Activity Category D land use facilities listed in Table 2.3.7-1. Post-installation maintenance and operational costs for noise insulation are not eligible for Federal-aid funding.

Because of the configuration and location of the proposed Project, noise barriers (i.e., sound walls) are the only form of noise abatement considered under Alternative 2. Each noise barrier was evaluated for feasibility based on achievable noise reduction (5 dBA or more). For each noise barrier determined to be acoustically feasible, the first test of being reasonable is to consider if the noise reduction meets the design goal of providing a 7 dBA insertion loss. If this design goal is not met the barrier is not considered reasonable. If the design goal of providing a 7 dBA insertion loss is achieved, cost allowances were calculated to determine reasonableness. To be considered reasonable from a cost perspective, the estimated cost to build the noise barrier should be equal to or less than the total cost allowance of benefited residences calculated for the barrier.

Noise abatement is not being considered for Alternative 3 because it would not result in operational noise impacts under 23 CFR 772.

Under Alternative 2, noise barriers with heights ranging from 8 to 20 feet in 2-foot increments were evaluated for the I-405 mainline and ramps. Noise barriers with heights ranging from 6 to 16 feet in 2-foot increments were evaluated for local roads, in accordance with Caltrans guidance. The barriers heights and locations were evaluated to determine if a minimum 5 dBA attenuation at the outdoor frequent use areas of the representative receptors could be achieved. The minimum barrier height required to cut the line-of-sight from each receptor to the exhaust stacks of heavy trucks has been calculated for all feasible barriers.

Each noise barrier was evaluated for feasibility based on achievable noise reduction. For each noise barrier found to be acoustically feasible, reasonable cost allowances were calculated by multiplying the number of benefited receptors by the year 2025 base cost allowance of $170,000. Appendix L, *Noise Study Report Data*, summarizes results at receptor locations for the noise barriers that have been evaluated in detail under Alternative 2. More information regarding existing and evaluated barriers is provided below in the *Preliminary Noise Abatement Analysis* section, which provides Caltrans' recommended abatement for Alternative 2 based on the proposed Project's NADR findings (HDR Engineering, Inc. 2026b).

The design of noise barriers presented in this report is preliminary and has been conducted at a level appropriate for environmental review but not for final design. Preliminary information on the physical location, length, and height of noise barriers is provided below. It should be assumed that if a noise barrier is modeled in the same location as an existing wall, the existing wall would be removed prior to the construction of the noise barrier. Typically, it is not possible to add additional height to an existing wall due to engineering issues. If pertinent parameters change substantially during final design, preliminary noise barrier designs may be modified or eliminated from the final Project. A final decision on the construction of the noise abatement will be made upon completion of the Project design.

Preliminary Noise Abatement Analysis

The following is a discussion of noise abatement considered for each evaluation area where traffic noise impacts are predicted under Alternative 2.

Noise Barrier System BA-1 A + BA-1 B

Receptors SE-2 through SE-10 represent outdoor activity areas of residences along NB I-405 Wilmington Avenue on-ramp, as shown in Figure 2.3.7-3. The proposed Project under Alternative 2 would not result in a substantial noise increase. Once residence represented by SE-7 would be exposed to traffic noise impacts because of an increase of 1 dBA, which exceeds the NAC. Noise abatement was considered in the form of a soundwall for the receptor (Noise Barrier System BA-1 A + BA-1 B). However, no model height was identified that would achieve a minimum 5 dBA reduction or 7 dBA design goal (see Table 2.3.7-9). Therefore, Noise Barrier System BA-1 A + BA-1 B was not considered reasonable or feasible under 23 CFR 772. Noise Barrier System BA-1 A + BA-1 B is not recommended for construction.

Table 2.3.7-9: Summary of Reasonable Allowances – Noise Barrier BA-1 A + BA-1B

Noise Barrier I.D.: Noise Barrier System BA-1 A + BA-1 B (PM 9.4 to PM 9.5 and PM 9.5 to PM 9.6)							
Critical Receptors: SE-7							
Design Year (2050) Noise Level, dBA Leq(h): 59 to 69							
Design Year (2050) Noise Level Minus Existing Noise Level: 0 to 1 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier[1]**	**14-Foot Noise Barrier**	**16-Foot Noise Barrier**	**18-Foot Noise Barrier[2]**	**20-Foot Noise Barrier[2]**
Noise Barrier Noise Reduction, dB	0 to 3	0 to 3	0 to 4	0 to 4	0 to 4	0 to 4	0 to 4
Number of Benefited Receptors	0	0	0	0	0	0	0
Reasonable Allowance Per Benefited Receptor ($1,000)	$170	$170	$170	$170	$170	$170	$170
Total Reasonable Allowance	$0	$0	$0	$0	$0	$0	$0
Estimated Construction Cost	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: (Ambient Air Quality & Noise Consulting, LLC 2026); (HDR Engineering, Inc. 2026b)
dBA = A-weighted decibels; Leq(h) = hourly equivalent noise level; PM = postmile
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Barrier height is not compliant with Caltrans HDM 1102.3(2).
Notes: Noise Barrier System BA-1 A + BA-1B consists of two barrier segments identified as BA-1 A and BA-1 B, which are analyzed together as one barrier set. Barrier segment BA-1 A extends from PM 9.4 to PM 9.5 and barrier segment BA-1 B extends from PM 9.5 to PM 9.6. No analyzed barrier would meet the minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor. No analyzed barrier would meet minimum height needed to achieve 7-dB noise reduction design goal.

Noise Barrier BA-2

Noise barrier BA-2 was modeled as an alternative to noise barrier system BA-1A + BA-1B for reasonableness, along Wilmington Avenue, as shown in Figure 2.3.7-3. One residence represented by SE-7 would be exposed to traffic noise impacts because of an increase of 1 dBA, which exceeds the NAC. Noise abatement was considered in the form of a soundwall for the receptors (Noise Barrier BA-2). The noise barrier was found to be acoustically feasible if constructed at heights ranging from 12 to 20 feet and would also meet the design goal of 7 dB insertion loss at one or more benefited receptors at heights ranging from 16 to 20 feet (see Table 2.3.7-10). However, the construction cost for barrier heights 16 to 20 feet are estimated to be greater than the reasonable allowance. Therefore, Noise Barrier BA-2 was not considered reasonable under 23 CFR 772. Noise Barrier BA-2 is not recommended for construction.

Table 2.3.7-10: Summary of Reasonable Allowances – Noise Barrier BA-2

Noise Barrier I.D.: Noise Barrier BA-2 (Wilmington Avenue)							
Critical Receptors: SE-2, SE-4, SE-5, and SE-7							
Design Year (2050) Noise Level, dBA Leq(h): 59 to 69							
Design Year (2050) Noise Level Minus Existing Noise Level: 0 to 1 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier**	**10-Foot Noise Barrier[1]**	**12-Foot Noise Barrier**	**14-Foot Noise Barrier**	**16-Foot Noise Barrier[2]**	**18-Foot Noise Barrier[3]**	**20-Foot Noise Barrier[3]**
Noise Barrier Noise Reduction, dB	0 to 2	0 to 4	0 to 5	0 to 6	0 to 7	0 to 8	0 to 8
Number of Benefited Receptors	0	0	2	3	4	4	5
Total Reasonable Allowance ($1,000)	$0	$0	$340	$510	$680	$680	$850
Estimated Construction Cost ($1,000)	N/A	N/A	N/A	N/A	$2,348	$2,403	$2,458

Source: (Ambient Air Quality & Noise Consulting, LLC 2026); (HDR Engineering, Inc. 2026b)
dBA = A-weighted decibels; Leq(h) = hourly equivalent noise level; PM = postmile
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Minimum height needed to achieve 7-dB noise reduction design goal.
[3] Barrier height is not compliant with Caltrans HDM 1102.3(2).
Note: This barrier was analyzed as an alternative to BA-1 A + BA 1 B.

Noise Barrier BA-3

Receptors SE-20 through SE-49 represent outdoor activity areas of residences along NB I-405 mainline near Carson Street on-ramp, as shown in Figure 2.3.7-3 through Figure 2.3.7-5. Thirty-nine residences represented by critical receptors listed in Table 2.3.7-11 would be exposed to traffic noise impacts because of an increase of up to 1 dBA, which exceeds the NAC. Noise abatement was considered in the form of a soundwall for the receptors (Noise Barrier BA-3). The noise barrier was found to be acoustically feasible if constructed at heights ranging from 8 to 20 feet and would also meet the design goal of 7 dB insertion loss at one or more benefited receptors at heights ranging from 12 to 20 feet (see Table 2.3.7-11). The construction cost for barrier

heights 12 to 20 feet are estimated to be less than the reasonable allowance, although the cost per benefited receptor is the most cost effective for barrier height 14 feet ($2.202 million) while benefiting 51 residences. Therefore, Noise Barrier BA-3 was considered reasonable and feasible under 23 CFR 772. Noise Barrier BA-3 is recommended for construction at a barrier height of 14 feet because it meets the noise reduction design goal, yields the maximum number of benefited receptors, minimizes construction costs and is at or below the maximum height allowed by the HDM.

Table 2.3.7-11: Summary of Reasonable Allowances – Noise Barrier BA-3

Noise Barrier I.D.: Noise Barrier BA-3 (PM 9.9 to PM 10.5)							
Critical Receptors: SE-20, SE-25, SE-26, SE-27, SE-28, SE-29, SE-30, SE-31, SE-32, SE-33, SE-34, SE-35, SE-36, SE-37, SE-38, SE-40, SE-42, SE-43, SE-45, SE-46, and SE-47							
Design Year (2050) Noise Level, dBA Leq(h): 58 to 71							
Design Year (2050) Noise Level Minus Existing Noise Level: 0 to 1 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier[2]**	**14-Foot Noise Barrier[1]**	**16-Foot Noise Barrier**	**18-Foot Noise Barrier[3]**	**20-Foot Noise Barrier[3]**
Noise Barrier Noise Reduction, dB	0 to 5	0 to 6	0 to 7	0 to 8	0 to 9	0 to 9	0 to 10
Number of Benefited Receptors	2	15	41	51	51	51	51
Total Reasonable Allowance ($1,000)	$340	$2,550	$6,970	$8,670	$8,670	$8,670	$8,670
Estimated Construction Cost ($1,000)	N/A	N/A	$1,857	$2,202	$2,657	$3,018	$3,382

Source: (Ambient Air Quality & Noise Consulting, LLC 2026); (HDR Engineering, Inc. 2026b)
dBA = A-weighted decibels; Leq(h) = hourly equivalent noise level; PM = postmile
Notes:
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Minimum height needed to achieve 7 dB noise reduction goal.
[3] Barrier height is not compliant with Caltrans HDM 1102.3(2).

Noise Barrier BA-4

Receptors NE-1 through NE-18 represent outdoor activity areas of residences along mainline NB I-405, as shown in Figure 2.3.7-5. Sixteen residences represented by critical receptors NE-9, NE-13, NE-14, NE-16, and NE-17 would be exposed to traffic noise impacts because of an increase of up to 2 dBA, which exceeds the NAC. Noise abatement was considered in the form of a soundwall for the receptors (Noise Barrier BA-4). The noise barrier was found to be acoustically feasible if constructed at heights ranging from 10 to 20 feet and would also meet the design goal of 7 dB insertion loss at one or more benefited receptors at heights ranging from 16 to 20 feet (see

Table 2.3.7-12). However, the construction cost for barrier heights 16 to 20 feet are estimated to be more than the reasonable allowance. Therefore, Noise Barrier BA-4 was not considered reasonable under 23 CFR 772. Noise Barrier BA-4 is not recommended for construction.

Table 2.3.7-12: Summary of Reasonable Allowances – Noise Barrier BA-4

Noise Barrier I.D.: Noise Barrier BA-4 (PM 10.7 to 11.0)							
Critical Receptors: NE-9, NE-13, NE-14, NE-16, and NE-17							
Design Year (2050) Noise Level, dBA Leq(h): 60 to 68							
Design Year (2050) Noise Level Minus Existing Noise Level: 0 to 2 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier**	**14-Foot Noise Barrier[1]**	**16-Foot Noise Barrier[2]**	**18-Foot Noise Barrier[3]**	**20-Foot Noise Barrier[3]**
Noise Barrier Noise Reduction, dB	0 to 4	0 to 5	0 to 6	0 to 6	0 to 7	0 to 7	0 to 7
Number of Benefited Receptors	0	3	3	9	9	9	9
Total Reasonable Allowance ($1,000)	$0	$510	$510	$1,530	$1,530	$1,530	$1,530
Estimated Construction Cost ($1,000)	N/A	N/A	N/A	N/A	$3,410	$3,574	$3,739

Source: (Ambient Air Quality & Noise Consulting, LLC 2026); (HDR Engineering, Inc. 2026b)
dBA = A-weighted decibels; Leq(h) = hourly equivalent noise level; PM = postmile
Notes:
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Minimum height needed to achieve 7 dB noise reduction goal.
[3] Barrier height is not compliant with Caltrans HDM 1102.3(2).

Noise Barrier BA-5

Receptors NE-32 and NE-33 represent outdoor activity areas of sports areas of three golf greens along NB I-405 mainline, as shown in Figure 2.3.7-7 and Figure 2.3.7-8. The three sports areas represented by critical receptors NE-32 and NE-33 would be exposed to traffic noise impacts because predicted noise levels exceed the NAC. Noise abatement was considered in the form of a soundwall for the receptors (Noise Barrier BA-5). Noise barrier heights of 12 to 20 feet would achieve a minimum 5 dBA reduction. However, no analyzed noise barrier heights were found to meet the 7 dBA design goal (see Table 2.3.7-13). Therefore, Noise Barrier BA-5 is not recommended for construction.

Table 2.3.7-13: Summary of Reasonable Allowances – Noise Barrier BA-5

Noise Barrier I.D.: Noise Barrier BA-5 (PM 11.8 to PM 12.5)							
Critical Receptors: NE-32, NE-33							
Design Year (2050) Noise Level, dBA Leq(h): 66 to 67							
Design Year (2050) Noise Level Minus Existing Noise Level: 0 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier**	**14-Foot Noise Barrier[1]**	**16-Foot Noise Barrier**	**18-Foot Noise Barrier[2]**	**20-Foot Noise Barrier[2]**
Noise Barrier Noise Reduction, dB	3 to 3	3 to 4	4 to 5	5 to 5	6 to 6	6 to 6	6 to 6
Number of Benefited Receptors	0	0	1	3	3	3	3
Total Reasonable Allowance ($1,000)[2]	$0	$0	$170	$510	$510	$510	$510
Estimated Construction Cost ($1,000)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: (Ambient Air Quality & Noise Consulting, LLC 2026); (HDR Engineering, Inc. 2026b)
dBA = A-weighted decibels; Leq(h) = hourly equivalent noise level; PM = postmile
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Barrier height is not compliant with Caltrans HDM 1102.3(2).
Note: No analyzed barrier would meet minimum height needed to achieve 7-dB noise reduction design goal.

Noise Barrier BA-6

Receptors NW-102 through NW-212 represent outdoor activity areas of residences along SB I-405 Avalon Boulevard off-ramp near Lenardo Drive, as shown in Figure 2.3.7-6. Six residences represented by critical receptors NW-131, NW-135, NW-139, NW-143, NW-147, and NW-160 located within the Imperial Avalon Mixed Use development project would be exposed to traffic noise impacts because of an increase of up to 1 dBA, which exceeds the NAC. Noise abatement was considered in the form of a soundwall for the receptors (Noise Barrier BA-6). The noise barrier was found to be acoustically feasible if constructed at heights ranging from 8 to 20 feet and would also meet the design goal of 7 dB insertion loss at one or more benefited receptors at heights ranging from 8 to 20 feet (see Table 2.3.7-14). The construction cost for barrier heights 8 to 20 feet are estimated to be less than the reasonable allowance, although the cost per benefited receptor is the most cost effective for barrier height 8 feet ($1.313 million) while benefiting 21 residences. Therefore, Noise Barrier BA-6 was considered reasonable and feasible under 23 CFR 772. However, as discussed below, Noise Barrier BA-7 would provide the maximum noise reduction design goal while benefiting the maximum number of benefited receptors at this location. Therefore, Noise Barrier BA-6 is not recommended for construction.

Table 2.3.7-14: Summary of Reasonable Allowances – Noise Barrier BA-6

Noise Barrier I.D.: Noise Barrier BA-6 (PM 11.3 to PM 11.4)							
Critical Receptors: NW-131, NW-135, NW-139, NW-143, NW-147, and NW-160							
Design Year (2050) Noise Level, dBA Leq(h): 45 to 73							
Design Year (2050) Noise Level Minus Existing Noise Level: -1 to 1 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier[2]**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier[1]**	**14-Foot Noise Barrier**	**16-Foot Noise Barrier**	**18-Foot Noise Barrier[3]**	**20-Foot Noise Barrier[3]**
Noise Barrier Noise Reduction, dB	0 to 9	0 to 9	0 to 9	0 to 10	0 to 10	0 to 11	0 to 11
Number of Benefited Receptors	21	21	21	21	21	22	22
Total Reasonable Allowance ($1,000)	$3,570	$3,570	$3,570	$3,570	$3,570	$3,740	$3,740
Estimated Construction Cost ($1,000)	$1,313	$1,390	$1,456	$1,524	$1,612	$1,660	$1,709

Source: (Ambient Air Quality & Noise Consulting, LLC 2026); (HDR Engineering, Inc. 2026b)
dBA = A-weighted decibels; Leq(h) = hourly equivalent noise level; PM = postmile
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Minimum height needed to achieve 7-dB noise reduction goal.
[3] Barrier height is not compliant with Caltrans HDM 1102.3(2).

Noise Barrier BA-7

Receptors NW-102 through NW-276 represent outdoor activity areas of residences along SB I-405, as shown in Figure 2.3.7-5 and Figure 2.3.7-6. Twenty-six residences represented by critical receptors listed in Table 2.3.7-15 would be exposed to traffic noise impacts because of an increase of up to 1 dBA, which exceeds the NAC. Noise abatement was considered in the form of a soundwall for the receptors (Noise Barrier BA-7). This analyzed barrier evaluates noise abatement for both the Imperial Avalon and Carson Triangle development projects and was analyzed as an alternative location to barriers BA-6 or BA-8. The noise barrier was found to be acoustically feasible if constructed at heights ranging from 8 to 20 feet and would also meet the design goal of 7 dB insertion loss at one or more benefited receptors at heights ranging from 8 to 20 feet. The construction cost for barrier heights 8 to 20 feet are estimated to be less than the reasonable allowance, although the cost per benefited receptor is the most cost effective for barrier height 14 feet ($9.943 million) while benefiting 83 residences. Therefore, Noise Barrier BA-7 was considered reasonable and feasible under 23 CFR 772. Noise Barrier BA-7 is recommended for construction at a barrier height of 14 feet because it meets the noise reduction design goal, yields the maximum number of benefited receptors, minimizes construction costs and is at or below the maximum height allowed by the HDM. Noise Barrier BA-7 would require widening the Avalon Boulevard UC bridge along SB I-405 and relocating additional utilities.

Table 2.3.7-15: Summary of Reasonable Allowances – Noise Barrier BA-7

Noise Barrier I.D.: Noise Barrier BA-7 (PM 11.1 to PM 11.2)							
Critical Receptors: NW-131, NW-135, NW-139, NW-143, NW-147, NW-160, NW-253, NW-254, NW-255, NW-256, NW-257, NW-258, NW-259, NW-260, NW-261, NW-262, NW-263, NW-264, NW-265, NW-266, NW-267, NW-268, NW-269, NW-270, NW-271, and NW-272							
Design Year (2050) Noise Level, dBA Leq(h): 45 to 77							
Design Year (2050) Noise Level Minus Existing Noise Level: -1 to 1 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier[2]**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier[1]**	**14-Foot Noise Barrier**	**16-Foot Noise Barrier**	**18-Foot Noise Barrier[3]**	**20-Foot Noise Barrier[3]**
Noise Barrier Noise Reduction, dB	0 to 10	0 to 10	0 to 10	0 to 11	0 to 11	0 to 12	0 to 12
Number of Benefited Receptors	68	69	80	83	84	84	84
Total Reasonable Allowance ($1,000)	$11,560	$11,730	$13,600	$14,110	$14,280	$14,280	$14,280
Estimated Construction Cost ($1,000)	$9,713	$9,760	$9,848	$9,943	$10,485	$10,552	$10,619

Source: (Ambient Air Quality & Noise Consulting, LLC 2026); (HDR Engineering, Inc. 2026b)
dBA = A-weighted decibels; Leq(h) = hourly equivalent noise level; PM = postmile
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Minimum height needed to achieve 7 dB noise reduction goal.
[3] Barrier height is not compliant with Caltrans HDM 1102.3(2).
Notes: This barrier was analyzed as an alternative location to barriers BA-6 or BA-8.

Noise Barrier BA-8

Receptors NW-253 through NW-277 represent outdoor activity areas of residences along SB I-405 Avalon Boulevard off-ramp, as shown in Figure 2.3.7-5 and Figure 2.3.7-6. Twenty residences represented by critical receptors listed in Table 2.3.7-16 would be exposed to traffic noise impacts because of an increase of up to 1 dBA, which exceeds the NAC. Noise abatement was considered in the form of a soundwall for the receptors (Noise Barrier BA-8). This analyzed barrier evaluates noise abatement for both the Imperial Avalon and Carson Triangle development projects. The noise barrier was found to be acoustically feasible if constructed at heights ranging from 8 to 20 feet and would also meet the design goal of 7 dB insertion loss at one or more benefited receptors at heights ranging from 14 to 20 feet. However, the construction cost for barrier heights 14 to 18 feet are estimated to be greater than the reasonable allowance. Therefore, Noise Barrier BA-8 was not considered reasonable under CFR 772. As discussed above, Noise Barrier BA-7 would provide the maximum noise reduction design goal while benefiting the maximum number of benefited receptors at this location. Noise Barrier BA-8 is not recommended for construction.

Table 2.3.7-16: Summary of Reasonable Allowances – Noise Barrier BA-8

Noise Barrier I.D.: Noise Barrier BA-8 (PM 11.1 to PM 11.2)							
Critical Receptors: NW-253, NW-254, NW-255, NW-256, NW-257, NW-258, NW-259, NW-260, NW-261, NW-262, NW-263, NW-264, NW-265, NW-266, NW-267, NW-268, NW-269, NW-270, NW-271, NW-272, NW-273, NW-274, NW-275, NW-276 and NW-277							
Design Year (2050) Noise Level, dBA Leq(h): 53 to 77							
Design Year (2050) Noise Level Minus Existing Noise Level: -1 to 1 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier[1]**	**14-Foot Noise Barrier[2]**	**16-Foot Noise Barrier**	**18-Foot Noise Barrier[3]**	**20-Foot Noise Barrier[3]**
Noise Barrier Noise Reduction, dB	0 to 5	0 to 5	0 to 5	0 to 7	0 to 9	0 to 11	0 to 12
Number of Benefited Receptors	1	1	1	2	3	4	6
Total Reasonable Allowance ($1,000)[3]	$170	$170	$170	$340	$510	$680	$1,020
Estimated Construction Cost ($1,000)	N/A	N/A	N/A	$813	$889	$932	$975

Source: (Ambient Air Quality & Noise Consulting, LLC 2026); (HDR Engineering, Inc. 2026b)
dBA = A-weighted decibels; Leq(h) = hourly equivalent noise level; PM = postmile
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Minimum height needed to achieve 7 dB noise reduction goal.
[3] Barrier height is not compliant with Caltrans HDM 1102.3(2).

Noise Barrier BA-9

Receptors NW-429 through NW-438 represent outdoor activity areas of residences along SB I-405, as shown in Figure 2.3.7-5. Eight residences represented by critical receptors NW-433 and NW-434 would be exposed to traffic noise impacts because of an increase of up to 1 dBA, which exceeds the NAC. Noise abatement was considered in the form of a soundwall for the receptors (Noise Barrier BA-9). Noise barrier heights of 18 to 20 feet would achieve a minimum 5 dBA reduction. However, no analyzed noise barrier heights were found to meet the 7 dBA design goal (see Table 2.3.7-17). Therefore, Noise Barrier BA-9 is not recommended for construction.

Table 2.3.7-17: Summary of Reasonable Allowances – Noise Barrier BA-9

Noise Barrier I.D.: Noise Barrier BA-9 (PM 10.8 to PM 11.0)							
Critical Receptors: NW-433 and NW-434							
Design Year (2050) Noise Level, dBA Leq(h): 59 to 68							
Design Year (2050) Noise Level Minus Existing Noise Level: 0 to 1 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier[1]**	**14-Foot Noise Barrier**	**16-Foot Noise Barrier**	**18-Foot Noise Barrier[2]**	**20-Foot Noise Barrier[2]**
Noise Barrier Noise Reduction, dB	-1 to 2	-1 to 3	0 to 4	0 to 4	0 to 4	0 to 5	0 to 5
Number of Benefited Receptors	0	0	0	0	0	2	2
Total Reasonable Allowance ($1,000)[2]	$0	$0	$0	$0	$0	$340	$340

Noise Barrier I.D.: Noise Barrier BA-9 (PM 10.8 to PM 11.0)							
Critical Receptors: NW-433 and NW-434							
Design Year (2050) Noise Level, dBA Leq(h): 59 to 68							
Design Year (2050) Noise Level Minus Existing Noise Level: 0 to 1 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier[1]**	**14-Foot Noise Barrier**	**16-Foot Noise Barrier**	**18-Foot Noise Barrier[2]**	**20-Foot Noise Barrier[2]**
Estimated Construction Cost ($1,000)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: (Ambient Air Quality & Noise Consulting, LLC 2026); (HDR Engineering, Inc. 2026b)
dBA = A-weighted decibels; Leq(h) = hourly equivalent noise level; PM = postmile
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Barrier height is not compliant with Caltrans HDM 1102.3(2).
Note: No analyzed barrier would meet the minimum height needed to achieve 7-dB noise reduction design goal.

Noise Barrier BA-10

Receptors SW-10 through SW-37 represent outdoor activity areas of residences, one school, and one office along SB I-405 near Carson Street on-ramp, as shown in Figure 2.3.7-4 and Figure 2.3.7-5. Twenty-five residences represented by critical receptors listed in Table 2.3.7-18 would be exposed to traffic noise impacts because of an increase of up to 1 dBA, which exceeds the NAC. Noise abatement was considered in the form of a soundwall for the receptors (Noise Barrier BA-10). The noise barrier was found to be acoustically feasible if constructed at heights ranging from 8 to 20 feet and would also meet the design goal of 7 dB insertion loss at one or more benefited receptors at heights ranging from 8 to 20 feet. The construction cost for barrier heights 8 to 20 feet are estimated to be less than the reasonable allowance, although the cost per benefited receptor is the most cost effective for barrier height 16 feet ($2.219 million) while benefiting 29 residences. Therefore, Noise Barrier BA-10 was considered reasonable and feasible under 23 CFR 772. Noise Barrier BA-10 is recommended for construction at a barrier height of 16 feet because it meets the noise reduction design goal, yields the maximum number of benefited receptors, minimizes construction costs and is at or below the maximum height allowed by the HDM.

Table 2.3.7-18: Summary of Reasonable Allowances – Noise Barrier BA-10

Noise Barrier I.D.: Noise Barrier BA-10 (PM 10 to PM 10.5)							
Critical Receptors: SW-13, SW-14, SW-15, SW-16, SW-17, SW-18, SW-19, SW-20, SW-21, SW-22, SW-23, SW-24, SW-25, SW-26, SW-27, SW-28, SW-29, SW-30, SW-31, SW-32, SW-33, SW-35, and SW-37							
Design Year (2050) Noise Level, dBA Leq(h): 62 to 73							
Design Year (2050) Noise Level Minus Existing Noise Level: 0 to 1 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier[2]**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier[1]**	**14-Foot Noise Barrier**	**16-Foot Noise Barrier**	**18-Foot Noise Barrier[3]**	**20-Foot Noise Barrier[3]**
Noise Barrier Noise Reduction, dB	2 to 7	2 to 8	2 to 9	2 to 10	2 to 11	2 to 11	2 to 12

Noise Barrier I.D.: Noise Barrier BA-10 (PM 10 to PM 10.5)							
Critical Receptors: SW-13, SW-14, SW-15, SW-16, SW-17, SW-18, SW-19, SW-20, SW-21, SW-22, SW-23, SW-24, SW-25, SW-26, SW-27, SW-28, SW-29, SW-30, SW-31, SW-32, SW-33, SW-35, and SW-37							
Design Year (2050) Noise Level, dBA Leq(h): 62 to 73							
Design Year (2050) Noise Level Minus Existing Noise Level: 0 to 1 dBA							
Design Year (2050) with Noise Barrier	**8-Foot Noise Barrier[2]**	**10-Foot Noise Barrier**	**12-Foot Noise Barrier[1]**	**14-Foot Noise Barrier**	**16-Foot Noise Barrier**	**18-Foot Noise Barrier[3]**	**20-Foot Noise Barrier[3]**
Number of Benefited Receptors	22	25	26	27	29	29	30
Total Reasonable Allowance ($1,000)[3]	$3,740	$4,250	$4,420	$4,590	$4,930	$4,930	$5,100
Estimated Construction Cost ($1,000)	$1,072	$1,342	$1,614	$1,874	$2,219	$2,485	$2,750

Source: (Ambient Air Quality & Noise Consulting, LLC 2026); (HDR Engineering, Inc. 2026b)
dBA = A-weighted decibels; Leq(h) = hourly equivalent noise level; PM = postmile
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Minimum height needed to achieve 7 dB noise reduction goal.
[3] Barrier height is not compliant with Caltrans HDM 1102.3(2).

Preliminary Noise Abatement Decisions

As described above, three noise barriers, Noise Barriers BA-3, BA-7, and BA-10 were identified as acoustically feasible and reasonable under Alternative 2. Table 2.3.7-19 provides a summary of information and comparison between the total reasonable allowance and estimated construction cost for each barrier (HDR Engineering, Inc. 2026b). Cost considerations for determining noise abatement reasonableness are based on an allowance per benefited receptor. For each acoustically feasible noise barrier, reasonable monetary allowances were calculated by multiplying the number of benefited receptors by $170,000, which is Caltrans' 2025 reasonableness allowance for abatement analysis (Caltrans n.d.). The construction cost for Noise Barriers BA-2, BA-4, and BA-8 were estimated to be greater than the reasonable allowance. Therefore, Noise Barriers BA-2, BA-4, and BA-8 were not considered reasonable under CFR 772 and are not recommended for construction. Noise Barrier BA-6 was considered reasonable and feasible under 23 CFR 772. However, Noise Barrier BA-7 would provide the maximum noise reduction design goal while benefiting the maximum number of benefited at SB I-405 near Avalon Boulevard. Therefore, Noise Barrier BA-6 is not recommended for construction.

Table 2.3.7-19: Summary of Abatement Key Information (Alternative 2)

Barrier Number	Location	Height (feet)	Acoustically Feasible?	Maximum Insertion Loss (dB)	Number of Benefitted Receptors	Design Goal Achieved?	Reasonable Allowance per Residence	Total Reasonable Allowance	Estimated Construction Cost	Cost Less than Allowance?
BA-2	Property Line; Wilmington Avenue	8	NO	2	N/A	NO	$ 170,000	N/A	N/A	N/A
		10[1]	NO	4	N/A	NO	$ 170,000	N/A	N/A	N/A
		12	YES	5	2	NO	$ 170,000	$ 340,000	N/A	N/A
		14	YES	6	3	NO	$ 170,000	$ 510,000	N/A	N/A
		16[2]	YES	7	4	YES	$ 170,000	$ 680,000	$2,348,000	NO
		18[3]	YES	8	4	YES	$ 170,000	$ 680,000	$2,403,000	NO
		20[3]	YES	8	5	YES	$ 170,000	$ 850,000	$2,458,000	NO
BA-3	EOS; NB I-405 near Carson Street off-ramp	8	YES	5	2	NO	$ 170,000	$ 340,000	N/A	N/A
		10	YES	6	15	NO	$ 170,000	$ 2,550,000	N/A	N/A
		12[2]	YES	7	41	YES	$ 170,000	$ 6,970,000	$1,857,000	YES
		14[1]	YES	8	51	YES	$ 170,000	$ 8,670,000	$2,202,000	YES
		16	YES	9	51	YES	$ 170,000	$ 8,670,000	$2,657,000	YES
		18[3]	YES	9	51	YES	$ 170,000	$ 8,670,000	$3,018,000	YES
		20[3]	YES	10	51	YES	$ 170,000	$ 8,670,000	$3,382,000	YES
BA-4	EOS; NB I-405 mainline	8	NO	4	N/A	NO	$ 170,000	N/A	N/A	N/A
		10	YES	5	3	NO	$ 170,000	$ 510,000	N/A	N/A
		12	YES	6	3	NO	$ 170,000	$ 510,000	N/A	N/A
		14[1]	YES	6	9	NO	$ 170,000	$ 1,530,000	N/A	N/A
		16[2]	YES	7	9	YES	$ 170,000	$ 1,530,000	$3,410,000	NO
		18[3]	YES	7	9	YES	$ 170,000	$ 1,530,000	$3,574,000	NO
		20[3]	YES	7	9	YES	$ 170,000	$ 1,530,000	$3,739,000	NO
BA-6	EOS; SB I-405 near Avalon Boulevard	8[2]	YES	9	21	YES	$ 170,000	$ 3,570,000	$1,313,000	YES
		10	YES	9	21	YES	$ 170,000	$ 3,570,000	$1,390,000	YES
		12[1]	YES	9	21	YES	$ 170,000	$ 3,570,000	$1,456,000	YES
		14	YES	10	21	YES	$ 170,000	$ 3,570,000	$1,524,000	YES
		16	YES	10	21	YES	$ 170,000	$ 3,570,000	$1,612,000	YES
		18[3]	YES	11	22	YES	$ 170,000	$ 3,740,000	$1,660,000	YES
		20[3]	YES	11	22	YES	$ 170,000	$ 3,740,000	$1,709,000	YES
BA-7	EOS; SB I-405 near Avalon Boulevard	8[2]	YES	10	68	YES	$ 170,000	$ 11,560,000	$9,713,000	YES
		10	YES	10	69	YES	$ 170,000	$ 11,730,000	$9,760,000	YES
		12[1]	YES	10	80	YES	$ 170,000	$ 13,600,000	$9,848,000	YES
		14	YES	11	83	YES	$ 170,000	$ 14,110,000	$9,943,000	YES
		16	YES	11	84	YES	$ 170,000	$ 14,280,000	$10,485,000	YES
		18[3]	YES	12	84	YES	$ 170,000	$ 14,280,000	$10,552,000	YES
		20[3]	YES	12	84	YES	$ 170,000	$ 14,280,000	$10,619,000	YES
BA-8	EOS; SB I-405 near Avalon Boulevard	8	YES	5	1	NO	$ 170,000	$ 170,000	N/A	N/A
		10	YES	5	1	NO	$ 170,000	$ 170,000	N/A	N/A
		12[1]	YES	5	1	NO	$ 170,000	$ 170,000	N/A	N/A
		14[2]	YES	7	2	YES	$ 170,000	$ 340,000	$813,000	NO
		16	YES	9	3	YES	$ 170,000	$ 510,000	$889,000	NO
		18[3]	YES	11	4	YES	$ 170,000	$ 680,000	$932,000	NO
		20[3]	YES	12	6	YES	$ 170,000	$ 1,020,000	$975,000	YES
BA-10	EOS; SB I-405 near Carson Street on-ramp	8[2]	YES	7	22	YES	$ 170,000	$ 3,740,000	$1,072,000	YES
		10	YES	8	25	YES	$ 170,000	$ 4,250,000	$1,342,000	YES
		12[1]	YES	9	26	YES	$ 170,000	$ 4,420,000	$1,614,000	YES
		14	YES	10	27	YES	$ 170,000	$ 4,590,000	$1,874,000	YES
		16	YES	11	29	YES	$ 170,000	$ 4,930,000	$2,219,000	YES

Barrier Number	Location	Height (feet)	Acoustically Feasible?	Maximum Insertion Loss (dB)	Number of Benefitted Receptors	Design Goal Achieved?	Reasonable Allowance per Residence	Total Reasonable Allowance	Estimated Construction Cost	Cost Less than Allowance?
		18[3]	YES	11	29	YES	$ 170,000	$ 4,930,000	$2,485,000	YES
		20[3]	YES	12	30	YES	$ 170,000	$ 5,100,000	$2,750,000	YES

Source: (HDR Engineering, Inc. 2026b)
EOS = edge of shoulder; dB = decibels; NB = northbound; SB = southbound; I-405 = Interstate 405
[1] Minimum height needed to break the line of sight between 11.5-foot truck stack and a first row receptor.
[2] Minimum height needed to achieve 7 dB noise reduction goal.
[3] Barrier height is not compliant with Caltrans HDM 1102.3(2).
Notes: Based on the current allowance of $170,000 per benefitted receptor.

The following noise barriers are recommended for construction under Alternative 2:

- Noise Barrier BA-3: Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of a barrier at Carson Street on-ramp along NB I-405 mainline, with respective lengths and average heights of 3,430 feet and 14 feet. Calculations based on preliminary design data show that the barrier will reduce noise levels by 5 to up to 8 dBA for 51 residences at a cost of $2,202,000. If conditions have substantially changed during final design, noise abatement may not be constructed. The final decision on noise abatement will be made upon completion of the Project design.

- Noise Barrier BA-7: Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of a barrier at Avalon Boulevard on-ramp along SB I-405, with respective lengths and average heights of 887 feet and 14 feet. Calculations based on preliminary design data show that the barrier will reduce noise levels by 5 to up to 11 dBA for 83 residences at a cost of $9,943,000. If conditions have substantially changed during final design, noise abatement may not be constructed. The final decision on noise abatement will be made upon completion of the Project design.

- Noise Barrier BA-10: Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of a barrier at the Carson Street on-ramp along SB I-405 mainline, with respective lengths and average heights of 2,530 and 16 feet. Calculations based on preliminary design data show that the barrier will reduce noise levels by 5 to up to 11 dBA for 29 residences at a cost of $2,219,000). If conditions have substantially changed during final design, noise abatement may not be constructed. The final decision on noise abatement will be made upon completion of the Project design.

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2.3.8 Energy

2.3.8.1 Regulatory Setting

The Energy Policy and Conservation Act of 1975 established fuel economy standards for on-road motor vehicles sold in the United States. Subsequent federal Energy Policy Acts (e.g., 1992, 2005) have been passed since the original act of 1975. The National Highway Traffic Safety Administration and USEPA set Corporate Average Fuel Economy standards for passenger cars and for light trucks (collectively, light-duty vehicles) and separately set fuel consumption standards for medium- and heavy-duty trucks and engines.

NEPA (42 USC 4332) requires the identification of all potentially significant impacts on the environment, including impacts on energy resources. Guidance for evaluating energy impacts of transportation projects subject to NEPA is outlined in the FHWA Technical Advisory T 6640.8A.

CEQA Guidelines require environmental documents include an analysis of a project's potential for significant environmental effects resulting from wasteful, inefficient, or unnecessary use of energy; or wasteful use of energy resources (Guidelines Section 15126.2[b]). The document must also describe feasible measures which could minimize inefficient and unnecessary consumption of energy (Guidelines Section 15126.4).

2.3.8.2 Affected Environment

This section is based on the proposed Project's *Energy Analysis Report* (HDR 2026), which was completed in February 2026, and TOAR (Fehr & Peers 2025), which was completed in November 2025.

The existing average daily traffic and truck volumes on I-405 within the Project Study Area are presented in Table 2.3.8-1. Within the local roadway network, the Project Study Area was not congested during the AM peak hour. However, congested conditions were observed at the intersection of Wilmington Avenue at the SB I-405 on-ramp and off-ramp during the PM peak hour. For freeway operations, congestion on I-405 was attributed primarily to downstream bottlenecks at the following locations:

- On NB I-405 from the SB Wilmington Avenue on-ramp to I-110 SB on-ramp in the AM peak hour
- On SB I-405 from the NB and SB I-110 off-ramp to the Wilmington Avenue on-ramp in the PM peak hour

Table 2.3.8-1: Existing Year (2024) Traffic Conditions in the Project Study Area

Location	Direction	AADT	Truck Volume	Percent Truck
Northwest of Main Street On/Off Ramps	Northbound	120,400	4,450	3.7%
Main Street On/Off Ramps to Avalon Blvd On/Off Ramps	Northbound	128,280	5,060	3.9%
Avalon Blvd On/Off Ramps to Carson St On/Off Ramps	Northbound	127,160	5,030	4.0%
Carson St On/Off Ramps to Wilmington Ave On/Off Ramps	Northbound	129,820	5,110	3.9%
East of Wilmington On/Off Ramps	Northbound	149,460	8,350	5.6%
Northwest of Main Street On/Off Ramps	Southbound	126,980	4,770	3.8%
Main Street On/Off Ramps to Avalon Blvd On/Off Ramps	Southbound	134,190	5,320	4.0%
Avalon Blvd On/Off Ramps to Carson Street On/Off Ramps	Southbound	131,060	5,230	4.0%
Carson Street On/Off Ramps to Wilmington Avenue On/Off Ramps	Southbound	140,440	5,510	3.9%
East of Wilmington On/Off Ramps	Southbound	156,000	8,100	5.2%

Source: (Fehr & Peers 2025)
% = percent; AADT = average annual daily traffic; Ave = Avenue; Blvd = Boulevard

Information on the fleet fuel mix using the proposed Project transportation facilities is not available. However, I-405 is part of the State Highway System and serves regional traffic demand. Therefore, the fleet mix of Los Angeles County was used to represent vehicle mix within the Project Study Area. Table 2.3.8-2 summarizes the percentage of vehicles by fuel type in Los Angeles County for 2023.

Table 2.3.8-2: Percent of Vehicles by Fuel Type in Los Angeles County (2023)

Fuel Type	Percent of Vehicle Population
Gasoline	93%
Diesel	3%
Electric	4%
Natural Gas	<1%
Hydrogen	<1%

Source: (California ARB 2023)
% = percent

The Project Study Area includes lighting along I-405. Within the Project Study Area, portions of the existing shoulder include mountable concrete curb and gutter. The existing traveled lane pavement along I-405 generally has no visible areas of concern.

2.3.8.3 Environmental Consequences

Transportation energy is generally described in terms of direct and indirect energy, which are defined as follows:

- ***Direct Energy*** involves all energy consumed by vehicle propulsion (e.g., automobiles, trains, airplanes). This energy consumption is a function of traffic characteristics such as VMT (volume X distance traveled), speed, vehicle mix, and thermal value of the fuel being used.

- ***Indirect energy*** is all the remaining energy needed to construct, operate, and maintain the roadway.

On a much larger scale, many energy users contribute indirectly to the energy consumption of a transportation system, but these are difficult to reliably quantify at the individual project level. These energy users include those that refine raw materials into products, such as vehicles or roads; explore for and refine oil into various fuels; construct and maintain dams, power plants, transmission lines, fuel distribution systems, train stations, and airports; and many others. Such factors are often studied in energy life cycle or carbon footprint analyses and are beyond the scope of the project-level transportation energy analysis.

Analysis results are given in terms of the energy volumes and British thermal units (BTU). The units for energy volume depend on the energy type. For example, diesel and gasoline consumption are reported in terms of gallons of each fuel type, whereas electricity consumption is reported in terms of kWh. The fuel unit for natural gas is standard cubic foot (scf). BTU is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level. Because other units of energy can be converted into equivalent BTU, the BTU is used as a basis for comparing the consumption of different types of energy resources.

Direct Energy

Alternative 1 – No-Build

Under Alternative 1, there would be no change to the existing setting or transportation facilities. There would be no short-term direct or indirect impacts on direct energy consumption. However, energy consumption is anticipated to increase over time, as described further below.

Alternative 2 – Auxiliary Lanes and Complete Streets

Table 2.3.8-3 summarizes annual VMT for the Existing Year (2024), Opening Year (2030), and Design Year (2050) conditions. Compared to existing conditions, VMT under Opening Year (2030) and Design Year (2050) conditions is expected to decrease with or without Alternative 2. The SCAG Activity-Based Travel Demand Modeling was used to determine that there would be a decrease in VMT between 2030 and 2050. All scenarios reflect the same VMT levels, with no difference between the No-Build and Alternative 2. This indicates that Alternative 2 would not change long-term operational

energy use compared to the No-Build condition. Various energy policies and legislation, including Advanced Clean Cars, which would reduce fossil fuel consumption from passenger cars, and SB 743, which encourages multimodal transportation networks, along with Project design features (e.g., new bike lanes), would also contribute to more efficient use of direct energy.

Table 2.3.8-3: Operational Vehicle Miles Traveled by Alternative and Study Year

Alternative and Study Year	Annual VMT	VMT Change from No-Build (% Change)	VMT Change from 2024 Existing (% Change)
2024 Existing Conditions	5,982,758,513	N/A	N/A
2030 No-Build Alternative	5,959,543,172	N/A	-23,215,341 (-0.4%)
2030 Alternative 2	5,959,543,172	0 (0%)	-23,215,341 (-0.4%)
2030 Alternative 3	5,959,543,172	0 (0%)	-23,215,341 (-0.4%)
2050 No-Build Alternative	5,904,081,468	N/A	-78,677,045 (-1.3%)
2050 Alternative 2	5,904,081,468	0 (0%)	-78,677,045 (-1.3%)
2050 Alternative 3	5,904,081,468	0 (0%)	-78,677,045 (-1.3%)

Source: EMFAC2021(v1.0.2)
Notes: N/A = comparison not applicable; VMT=vehicle miles traveled; %=percent

Vehicle fuel consumption for the analysis conditions was estimated based on vehicle types (e.g., automobiles, light-duty trucks) traveling within the Project Study Area using the EMFAC2021 model.[16] Annual gallons of gasoline and diesel fuel and annual kWh of electricity consumption were directly obtained from the EMFAC2021 model output. EMFAC2021 reports natural gas in terms of diesel equivalent gallon (DEG). A DEG has an equivalent energy content to a gallon of diesel fuel. The EMFAC2021 reported annual DEG of natural gas was converted to scf using a conversion factor of 144 per scf DEG (Caltrans 2021). Table 2.3.8-4 presents the estimated direct fuel consumption for the analysis conditions. For additional details, see the *Energy Analysis Report* (HDR 2026).

Table 2.3.8-4: Annual Vehicle Fuel and Electricity Consumption by Alternative and Study Year

Alternative and Study Year	Gasoline (million gallons)	Diesel (million gallons)	Natural Gas (million scf)	Electricity (million kWh)
2024 Existing Conditions	195.74	40.57	408.85	74.84
2030 No-Build Alternative	168.79	37.72	356.04	155.71
2030 Alternative 2	168.79	37.72	356.04	155.71
2030 Alternative 3	168.79	37.72	356.04	155.71
2050 No-Build Alternative	136.68	40.72	199.66	413.07

[16] EMFAC2021 models was used in the *Energy Analysis Report* (HDR 2026) because EMFAC2025 model was not approved for use in transportation conformity.

Alternative and Study Year	Gasoline (million gallons)	Diesel (million gallons)	Natural Gas (million scf)	Electricity (million kWh)
2050 Alternative 2	136.68	40.72	199.66	413.07
2050 Alternative 3	136.68	40.72	199.66	413.07

Source: EMFAC2021
Notes: kWh=kilowatt hours; scf = standard cubic foot

Gasoline, diesel, natural gas, and electricity were converted to BTU using the heat content of each fuel. Table 2.3.8-5 presents the annual direct energy consumption for the analysis conditions.

Table 2.3.8-5: Annual Direct Energy Use by Alternative and Study Year

Alternative and Study Year	Direct Energy Consumption (million BTU)	Change from Base Year (% Change)	Change from No-Build (% Change)
2024 Existing Conditions	29,571,158	N/A	N/A
2030 No-Build Alternative	26,118,852	-3,452,306 (-12%)	N/A
2030 Alternative 2	26,118,852	-3,452,306 (-12%)	0 (0%)
2030 Alternative 3	26,118,852	-3,452,306 (-12%)	0 (0%)
2050 No-Build Alternative	23,372,334	-6,198,824 (-21%)	N/A
2050 Alternative 2	23,372,334	-6,198,824 (-21%)	0 (0%)
2050 Alternative 3	23,372,334	-6,198,824 (-21%)	0 (0%)

Source: EMFAC2021
Notes: BTU=British thermal units; N/A = comparison not applicable; %=percent

Operation of Alternative 2 under Opening Year (2030) and Design Year (2050) conditions would decrease direct energy use compared to existing conditions. These results are due exclusively to factors external to the proposed Project. The decrease in Opening Year (2030) fuel consumption over existing conditions fuel consumption is 12 percent, and the decrease in Design Year (2050) fuel consumption over existing conditions is 21 percent. These trends are attributed to future improvements in vehicle fuel economy, penetration of more efficient electric vehicles stemming from various energy policies and legislation, and an overall decrease in regional VMT.

As detailed in Table 2.3.8-5, Alternative 2 would not change long-term operational energy use compared to the No-Build Alternative. Alternative 2 would not change regional annual VMT compared to the No-Build Alternative. Alternative 2 would also improve operations and safety for vehicle traffic (see Section 2.2.7, *Transportation*). Therefore, travel time reliability improvements achieved by improved operation and the reduction in potential for collisions under Alternative 2 would enhance systemwide operational productivity and associated energy efficiency.

Alternative 2 would enhance mobility, accessibility, and connectivity for all communities along the existing corridor through Complete Streets improvements. New bike lanes

would be constructed along local roadways to improve connections within the City. Pedestrian facilities would also be upgraded, and new sidewalks would be installed to close existing gaps and meet Americans with Disabilities Act (ADA) compliance standards. Additionally, implementation of TSM and TDM elements, including freeway management and arterial system strategies, would improve freeway operations and safety. Improvements to bicycle and pedestrian networks encourage walking and bicycling within the Project Study Area. Increased walking and biking could further help reduce local automobile traffic and overall direct energy consumption. Therefore, no adverse direct impacts on energy consumption would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Under Alternative 3, the proposed Project would implement TSM/TDM strategies and Complete Streets improvements without constructing auxiliary lanes. Because Alternative 3 would not expand roadway capacity or materially change regional VMT, long-term operational energy use would be the same as the No-Build Alternative. As shown in Tables 2.3.8-3 through 2.3.8-5, annual VMT, vehicle fuel consumption, electricity use, and direct operational energy demand under Alternative 3 in both the Opening Year (2030) and Design Year (2050) are identical to Alternative 2 and do not differ from No-Build conditions. Therefore, no adverse direct impacts on energy consumption would occur as a result of the proposed Project under Alternative 3.

Indirect Energy

Indirect energy includes fuel consumed during construction and for maintenance and operation of project elements. The following sections analyze each of these types of indirect energy.

Alternative 1 – No-Build

The No-Build Alternative does not include construction of any of the improvements associated with the Build Alternatives. Thus, it would not have the one-time consumption of indirect energy that would occur under either Build Alternative. Therefore, no short-term indirect impacts on energy would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Indirect Energy, Construction

Construction of either Build Alternative would require equipment and vehicles that consume diesel and gasoline. Fuel consumption during construction was calculated by converting carbon dioxide (CO_2) emissions predicted by the California Emissions Estimator Model (CalEEMod), version 2022, using the rate of emissions emitted per gallon of combusted gasoline (19.37 pounds CO_2 per gallon) and diesel (22.45 pounds CO_2 per gallon) (United States Energy Information Administration 2023). Temporary construction trailers and site lighting would also consume electricity (kWh).

Table 2.3.8-6 provides construction-period fuel consumption estimates and indirect energy for Alternatives 2 and 3. Gasoline and diesel consumption during construction were converted to BTU using the heat content of each fuel. Alternative 2 would have duration of approximately 2 years (anticipated December 2028 through December 2030), while Alternative 3 would have duration of 15 months (assumed December 2028 through March 2030). For additional details, see the *Energy Analysis Report* (HDR 2026).

Table 2.3.8-6: Construction Fuel and Electricity Consumption and Indirect Energy by Alternative and Year

Alternative and Construction Year	Gasoline (gallons)	Diesel (gallons)	Electricity (kWh)	Indirect Energy (million BTU)
Alternative 2				
2028 Alternative 2	313	604	2,818	130
2029 Alternative 2	9,681	119,915	55,121	17,826
2030 Alternative 2	5,868	22,672	51,951	3,997
Total Alternative 2	***15,862***	***143,190***	***109,889***	***21,953***
Alternative 3				
2028 Alternative 3	215	2,500	6,398	391
2029 Alternative 3	2,492	21,007	10,214	3,220
2030 Alternative 3	410	2,569	2,524	411
Total Alternative 3	***3,117***	***26,076***	***19,137***	***4,022***

Source: (HDR 2026)
Note: The construction period of Alternative 2 is assumed to be 24 months, from December 2028 to December 2030. The construction period of Alternative 3 is assumed to be 15 months, from December 2028 to March 2030.

Alternative 2 would consume an estimated 21,953 million BTU during construction. The indirect energy consumed during construction of either Build Alternative would be temporary and would not result in a permanent increase in statewide annual energy consumption. Moreover, construction design features would help conserve energy. A TMP would be developed and incorporated in accordance with the 2022 Caltrans Standard Specifications and must comply with the *California Manual on Uniform Traffic Control Devices*, Part 6, *Temporary Traffic Control* (see Section 1.4, *Project Alternatives*, for Project Feature **PF-TR-1**). An effective TMP would reduce gasoline consumption by limiting traffic congestion and reducing the length of detours. Further, Measure **AQ-12** would require that construction traffic be routed to reduce idling.

In addition, incorporation of Standard Specifications 6-1.03, 14-9, and 14-10 (Project Feature **PF-EN-2**) would reduce diesel fuel consumption. Specification 6-1.03 requires certain local construction materials be obtained or produced from a source in the work vicinity, and Specification 14-10 requires recycling and reusing nonhazardous waste and excess materials, where practicable, to reduce consumption of native resources and may reduce energy consumption from material production and transport. Therefore, Alternative 2 would not result in the wasteful, inefficient, or unnecessary consumption of

energy resources during Project construction. In addition, the construction contractor would be required to comply with all applicable laws and regulations related to air quality (Measure **AQ-1**), which would include implementing controls that would indirectly reduce energy consumption.

Because indirect energy consumed during construction activities is short-term, this would not result in a permanent increase in statewide annual energy consumption. The use of standard measures would minimize energy consumption from construction activities, which would include the following avoidance and minimizations measures:

- Limit idling of vehicles and equipment (Measure **ENR-1**),
- Using solar-powered equipment, if feasible (Measure **ENR-2**),
- Regular vehicle and equipment maintenance (Measure **ENR-3**), and
- Recycle non-hazardous waste and excess materials to reduce offsite disposal (Measure **ENR-4**).

In addition, with innovations such as longer pavement lives, improvement in traffic management, and changes in materials, energy consumption can be offset to some degree by longer intervals between maintenance and rehabilitation activities. Construction contractors would also be required to comply with state regulations, which require the use of renewable diesel fuel as of 2024. In addition, Measure **AQ-15** would require the use of Tier 4 equipment, which would reduce energy consumption. Therefore, with incorporation of Measures **ENR-1, ENR-2**, **ENR-3**, **ENR-4**, **AQ-1**, **AQ-12**, and **AQ-15**, no adverse indirect impacts due to construction would occur as a result of the proposed Project under Alternative 2.

Indirect Energy, Maintenance

Indirect energy would be consumed by equipment and vehicles required for preventive and corrective maintenance following construction under Alternative 2. These activities would require gasoline and diesel equipment, such as trimmers and pavers. Light-duty work trucks would also be required for site access. Regular maintenance of I-405 occurs under existing conditions and would continue under the No-Build Alternative. Newer and more fuel-efficient equipment and vehicles, including zero-emissions vehicles, are anticipated to be operating in the future due to energy policies and legislation. This more efficient maintenance fleet may reduce or offset additional energy consumption from any potential increase in maintenance activity due to the addition of the auxiliary lanes compared to existing conditions. Therefore, implementation of Alternative 2 would reduce indirect maintenance energy consumption compared to existing conditions. However, overall maintenance needs under Alternative 2 would be similar to those under the No-Build Alternative.

Indirect Energy, Operations

Traffic lights and streetlights would be updated, where necessary, to manage traffic and provide safe driving conditions. Under either Build Alternative, the proposed Project

would include the implementation of energy-efficient lighting, such as LED traffic signals and streetlights (Project Feature **PF-EN-1**). LED lights consume 10 percent of the electricity of traditional lights. LED fixtures would be used wherever streetlights are installed or replaced. LED street lighting consumes up to 70 percent less energy per year as compared to incandescent bulbs (The Climate Group 2023). Therefore, the proposed Project has been designed to conserve energy with LED fixtures, resulting in an overall lower consumption of indirect energy for the same amount of lighting. Compared to existing conditions, a greater percentage of electricity consumed under future year conditions would be renewably sourced due to the state's Renewable's Portfolio Standard regardless of the selected alternative. Therefore, no adverse indirect impacts due to operational energy consumption would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

Alternative 3 would consume an estimated 4,022 million BTU during construction. Construction under Alternative 3 would require less energy than Alternative 2 due to its reduced construction scope and shorter construction duration (approximately 15 months) (see Table 2.3.8-6). As a result, total construction-period fuel consumption and indirect energy use under Alternative 3 would be substantially lower than Alternative 2. Construction energy use would be temporary and would not result in a lasting increase in statewide annual energy demand. Incorporation of Project Features **PF-TR-1** and **PF-EN-2** and Measures **ENR-1**, **ENR-2**, **ENR-3**, **ENR-4**, **AQ-1**, **AQ-12**, and **AQ-15** would further reduce indirect energy consumption during construction. In addition, energy efficient lighting would be implemented (see Project Feature **PF-EN-1**). Therefore, with incorporation of Measures **ENR-1**, **ENR-2**, **ENR-3**, **ENR-4, AQ-1**, **AQ-12**, and **AQ-15**, no adverse indirect impacts on energy consumption would occur as a result of the proposed Project under Alternative 3.

2.3.8.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimize measures are proposed:

Measure ENR-1 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, shall ensure that idling from construction vehicles and off-road equipment is minimized, to the extent feasible.

Measure ENR-2 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, shall ensure that solar-powered equipment is used to the extent feasible (e.g., signal boards).

Measure ENR-3 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, shall ensure that all construction vehicles and off-road equipment receive manufacturer-recommended maintenance.

Measure ENR-4 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, shall ensure that all non-hazardous waste and excess materials be recycled onsite, to the extent feasible, to reduce disposal offsite.

Measures **AQ-1**, **AQ-12**, and **AQ-15** from Section 2.3.6, *Air Quality*, are also proposed.

2.4 BIOLOGICAL ENVIRONMENT

2.4.1 N atural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors, fish passage, and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value. Wetlands and other waters are discussed below in Section 2.4.2, *Wetlands and Other Waters*.

2.4.1.1 Affected Environment

This section is based on the proposed Project's *Natural Environment Study* (*Minimal Impacts*) (NES[MI]) (GPA Consulting 2025), which was completed in July 2025. The Project Study Area is an engineering design footprint, encompassing permanent and temporary construction limits where direct and indirect impacts may occur. It includes construction/grading limits, work pads, staging and laydown areas, access routes, and utility relocation corridors. The 550-acre BSA (see Figure 2.4.1-1 through Figure 2.4.1-4) spans along the I-405 corridor from PM 9.6 to PM 12.6 and extends 300 feet beyond the proposed Project Study Area to account for potential indirect impacts (e.g., from light, dust, vibration, noise).

The BSA was visually surveyed on foot, to the extent feasible, and all plant and wildlife species were identified to determine the potential for protected species to be in the BSA. Biological surveys and jurisdictional delineations within the BSA were conducted on November 5 through 8, 2024, and on February 4, 2025.

Field surveys within the BSA identified seven distinct vegetation communities: Ruderal Perennial Forb Grassland and Shrubland, Ruderal Annual Forb Meadow and Shrubland, Pickleweed Mats, Lawn-Garden and Recreational Vegetation Cultural Formation, Hardstem and California Bullrush Marsh, Eucalyptus *spp*. Ruderal Forest Alliance, and Californian Ruderal Forest (California Native Plant Society [CNPS] 2004) (United States National Vegetation Classification 2023) (see Figure 2.4.1-5 through Figure 2.4.1-8). Two cover classes were observed within the BSA, including Developed and Open Water. See Table 2.4.1-1 for the total acreages of all vegetation communities and cover classes within the BSA.

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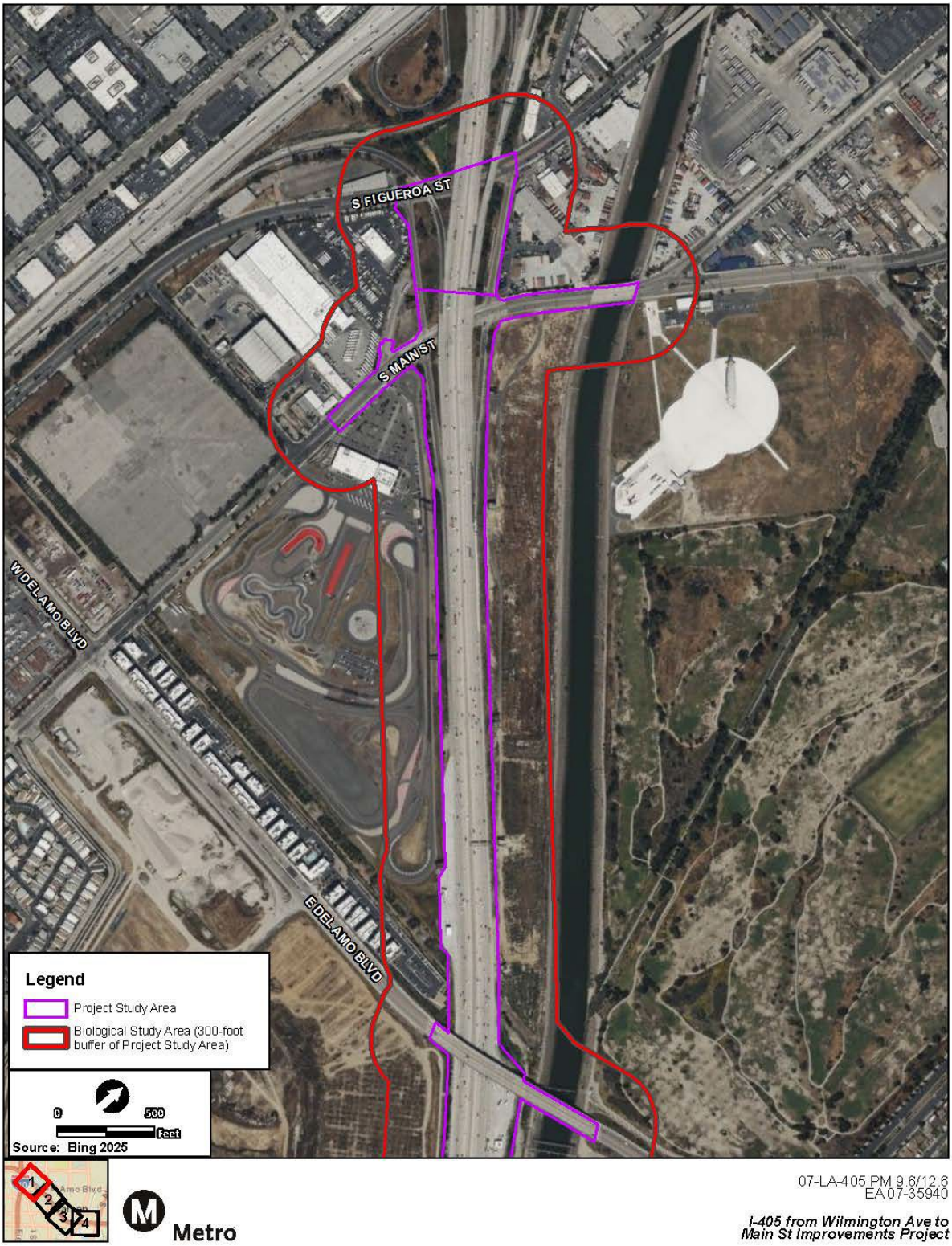

Figure 2.4.1-1: Biological Study Area (Sheet 1 of 4)

Figure 2.4.1-2: Biological Study Area (Sheet 2 of 4)

Figure 2.4.1-3: Biological Study Area (Sheet 3 of 4)

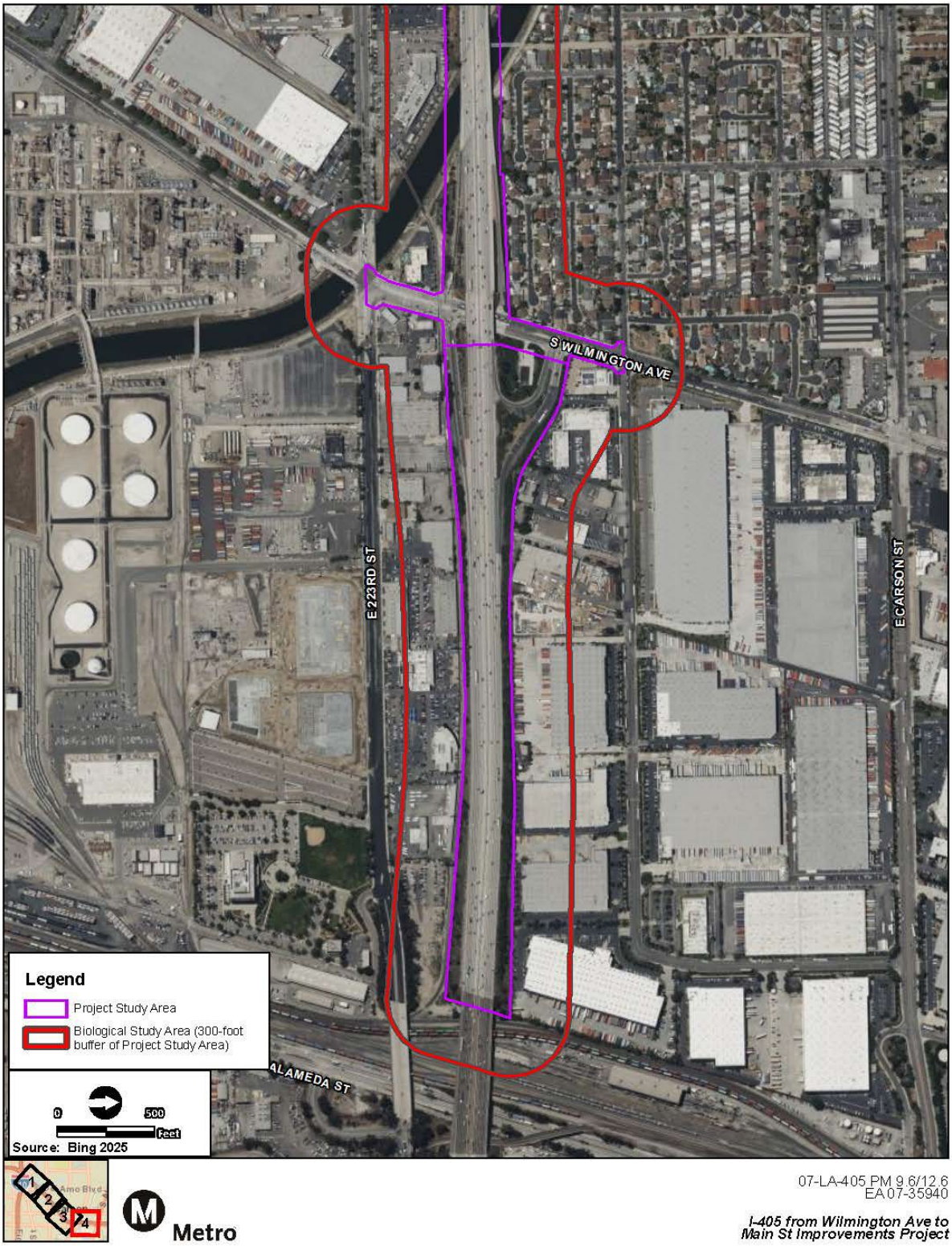

Figure 2.4.1-4: Biological Study Area (Sheet 4 of 4)

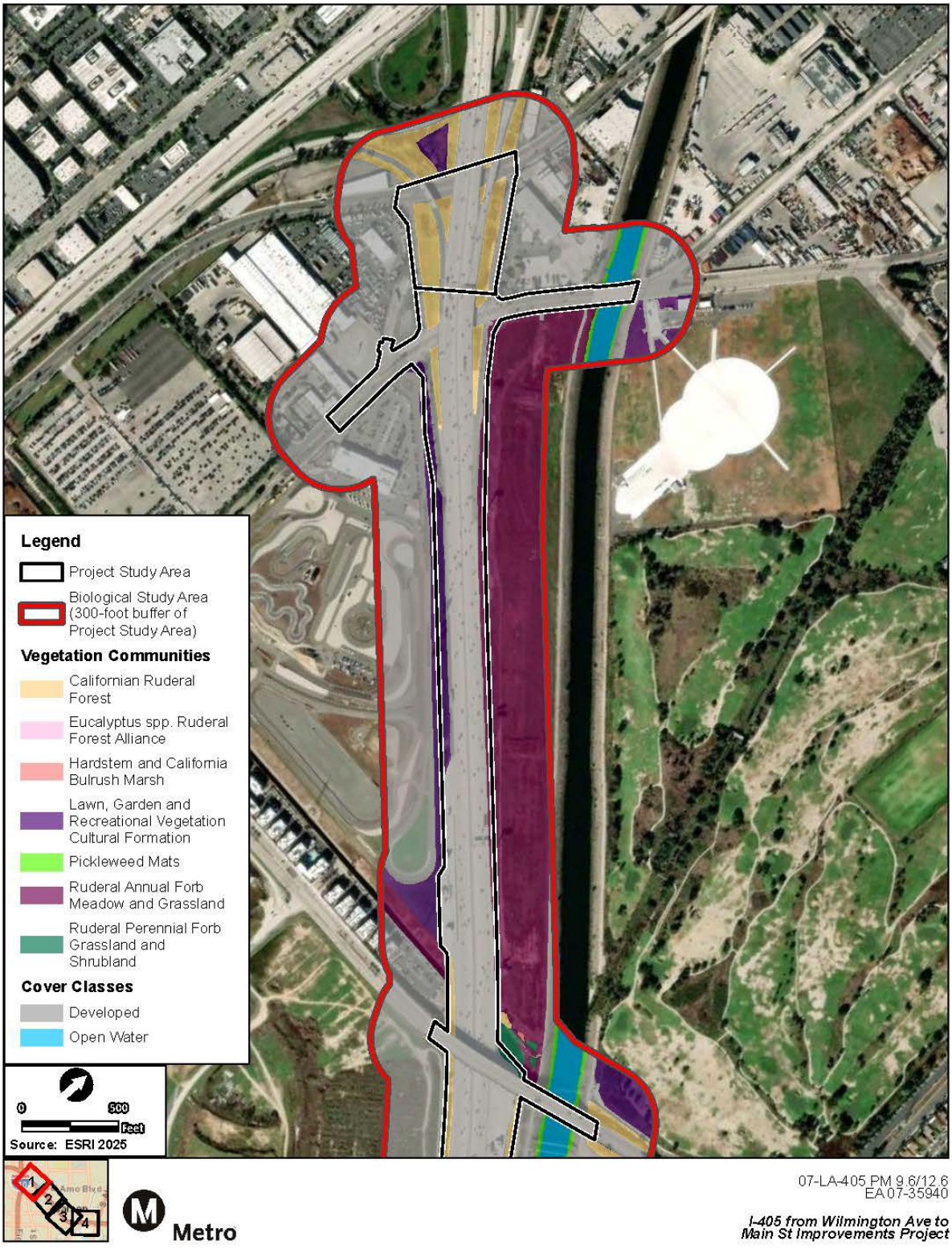

Figure 2.4.1-5: Vegetation Communities and Cover Classes (Sheet 1 of 4)

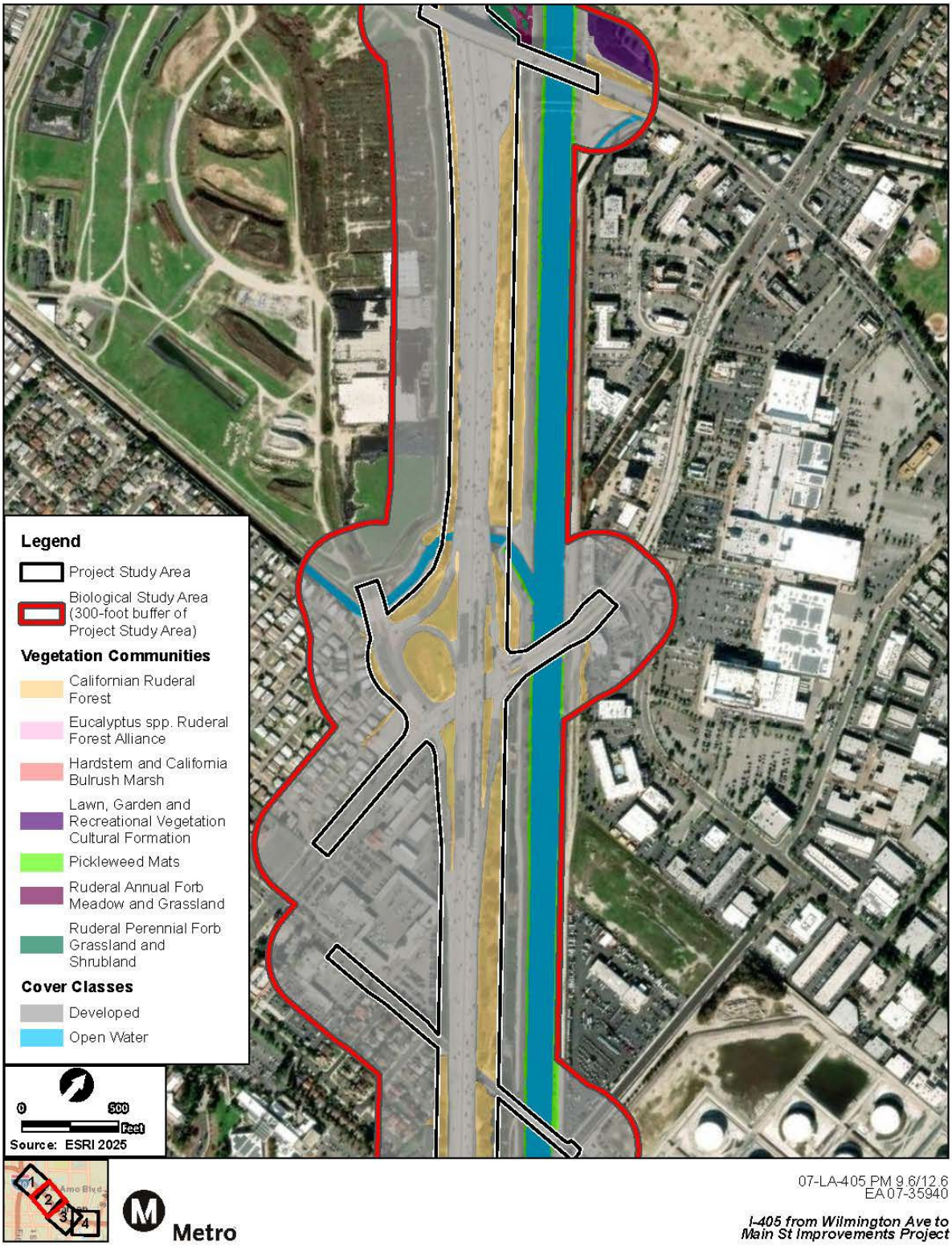

Figure 2.4.1-6: Vegetation Communities and Cover Classes (Sheet 2 of 4)

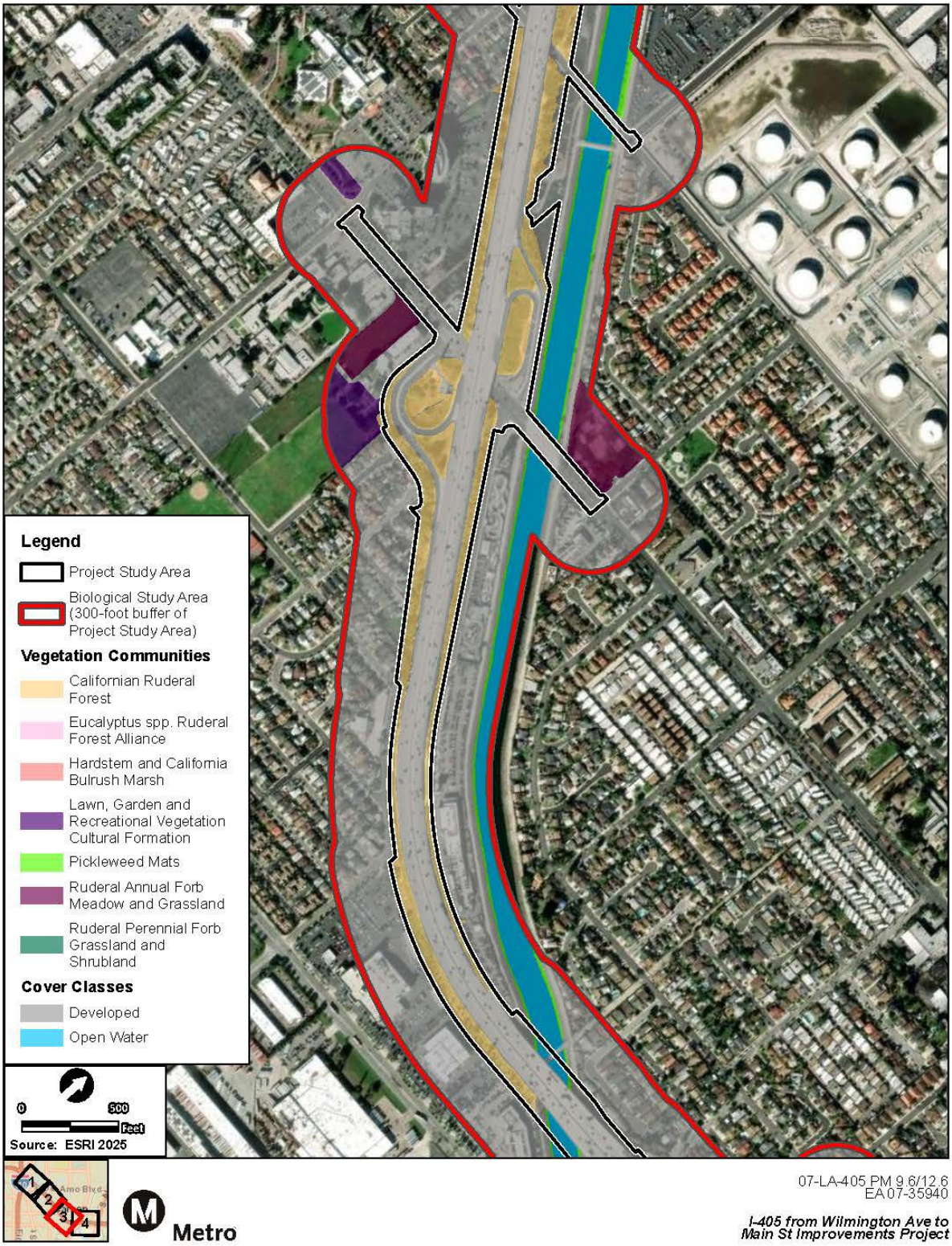

Figure 2.4.1-7: Vegetation Communities and Cover Classes (Sheet 3 of 4)

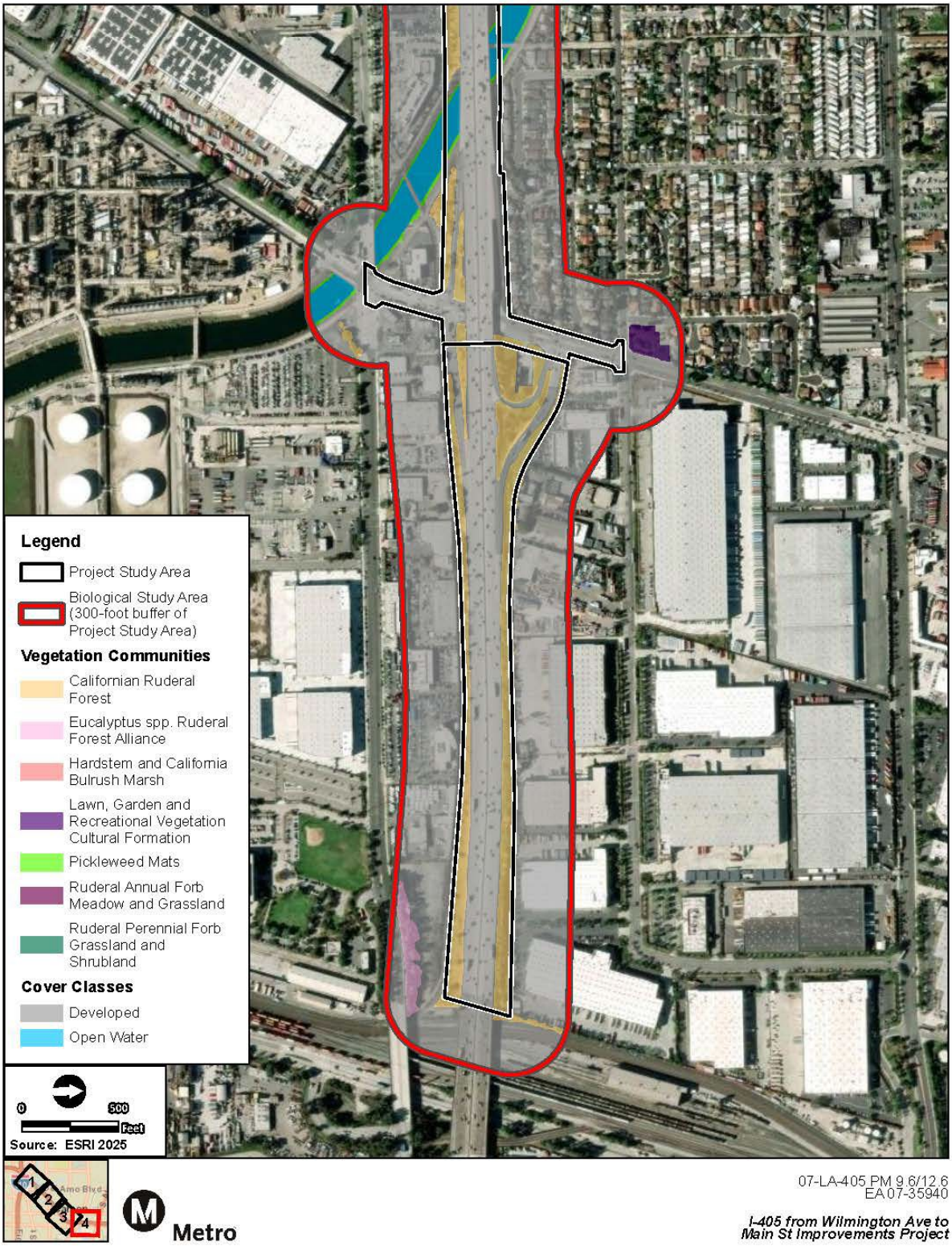

Figure 2.4.1-8: Vegetation Communities and Cover Classes (Sheet 4 of 4)

Table 2.4.1-1: Existing Vegetation Communities and Cover Classes in the Biological Study Area

Vegetation Community/Cover Class	Total Acres
Californian Ruderal Forest	56.88
Lawn, Garden and Recreational Vegetation Cultural Formation	11.77
Hardstem and California Bulrush Marsh	0.02
Pickleweed Mats	5.46
Ruderal Annual Forb Meadow and Grassland	34.49
Ruderal Perennial Forb Meadow and Grassland	0.61
Eucalyptus spp. Ruderal Forest Alliance	1.08
Developed	401.93
Open Water	37.61
Total Biological Study Area Acreage	549.85

Source: (GPA Consulting 2025)

According to the California Natural Diversity Database (CNDDB), five special-status natural communities have the potential to be in the BSA based on geographical distribution. Based on field surveys, only one special-status natural community, Pickleweed Mats (State rank: S3), was observed in the BSA. This community consisted of approximately 5.46 acres along the lower tidal banks of the Dominguez Channel. These mats are composed of dense Pickleweed (*Salicornia* spp.) intermixed with saltgrass (*Distichlis spicata*), alkali heath (*Frankenia salina*), and marsh jaumea (*Jaumea carnosa*); the herb layer is typically under 5 feet tall and in direct contact with tidal waters. All other vegetation communities within the BSA are considered non-sensitive or non-special-status because they are dominated and/or composed by non-native species and lack ecological rarity or regulatory designations for sensitive natural communities.

Habitat connectivity within the BSA is limited due to the urban setting of the proposed Project. The BSA consists of commercial areas located along the I-405 corridor within Carson and includes the South Bay Pavilion Mall and surrounding retail plaza and car dealerships. Urban wildlife species may forage and move through areas adjacent to I-405, including nurseries, the Victoria Golf Course, the Porsche track, the California Highway Patrol weigh station, the Goodyear Blimp Base Airport, the Dominguez Channel, and residential areas. However, according to the CNDDB Biogeographic Information and Observation System (BIOS) habitat connectivity within the BSA is limited (BIOS Habitat Connectivity Viewer 2024).

The Dominguez Channel is not listed among the 15 priority wildlife corridors in the South Coast Missing Linkages regional report (South Coast Wildlands 2008). At the local level, the City's Open Space and Environmental Conservation Element identifies the Dominguez Channel as a key part of the City's open space network, with opportunities for habitat restoration, biodiversity enhancement, and integration of the corridor into regional conservation goals (City of Carson 2023).

The BSA is located approximately 3.5 miles inland from the state-designated coastal zone and is therefore outside any certified Local Coastal Program boundary; consequently, no Coastal Act Environmentally Sensitive Habitat Areas overlap the BSA. The BSA also lies outside the boundaries of any approved or proposed Natural Community Conservation Plan or Habitat Conservation Plan.

2.4.1.2 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no short-term direct or indirect impacts on special-status natural communities would result from the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Construction activities would occur within the existing transportation corridor and include bridge widening, installation of cast-in-drilled-hole piles, and abutment modifications along the engineered margins of the Dominguez Channel. These activities would be limited to areas adjacent to existing piers and abutments within previously disturbed channel banks. Construction activities are not expected to result in new channel constrictions or alter hydrologic connectivity and are not expected to impede the longitudinal movement of fish or wildlife within the channel.

Alternative 2 would result in both temporary and permanent impacts on Pickleweed Mats within the BSA. Construction activities, including grading, vegetation removal, vehicle movement, and movement of construction equipment, could result in direct and indirect impacts on Pickleweed Mats. Direct impacts could include trampling or removal of individual plants during construction activities. Indirect impacts could include increased dust levels from staging and construction, which could result in impacts on the health of Pickleweed Mats.

Alternative 2 would result in approximately 0.07 acre of temporary direct impacts and approximately 0.01 acre of permanent direct impacts on Pickleweed Mats along lower tidal sections of the Dominguez Channel from grading and localized encroachment along channel margins (see Figure 2.4.1-9 and Figure 2.4.1-12). A summary of impacts under Alternative 2 on all vegetation communities within the BSA, including Pickleweed Mats, is provided in Table 2.4.1-2 below.

Project Features **PF-WQ-1**, **PF-WQ-2**, **PF-WQ-4**, **PF-WQ-5**, **PF-WQ-7**, and **PF-WQ-9** through **PF-WQ-12** (see Section 1.4, *Project Alternatives*) would be implemented to control runoff, reduce erosion and sedimentation, preserve existing vegetation, and minimize impacts on water quality (which would minimize impacts on Pickleweed Mats).

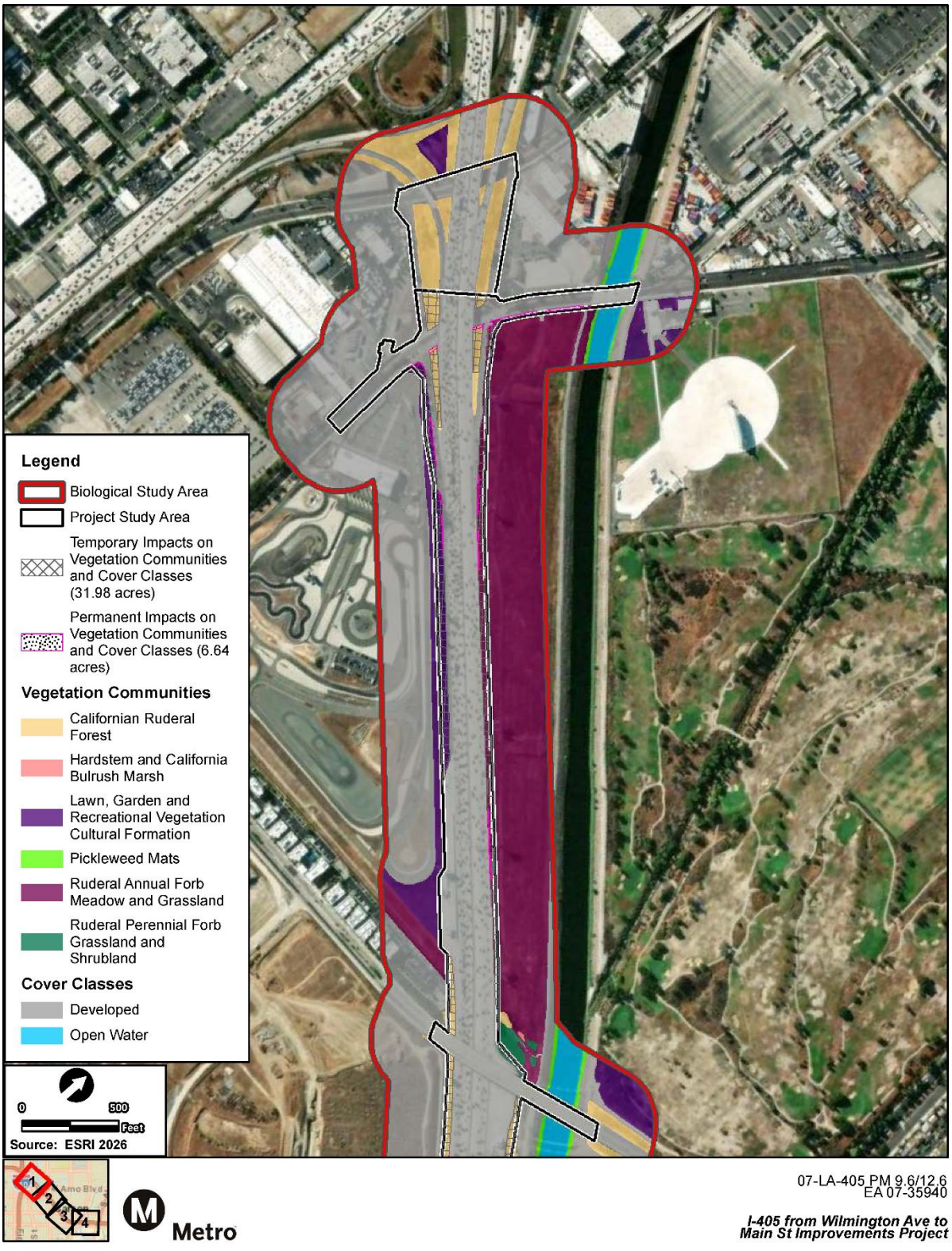

Figure 2.4.1-9: Impacts on Vegetation Communities and Cover Classes under Alternative 2 (Sheet 1 of 4)

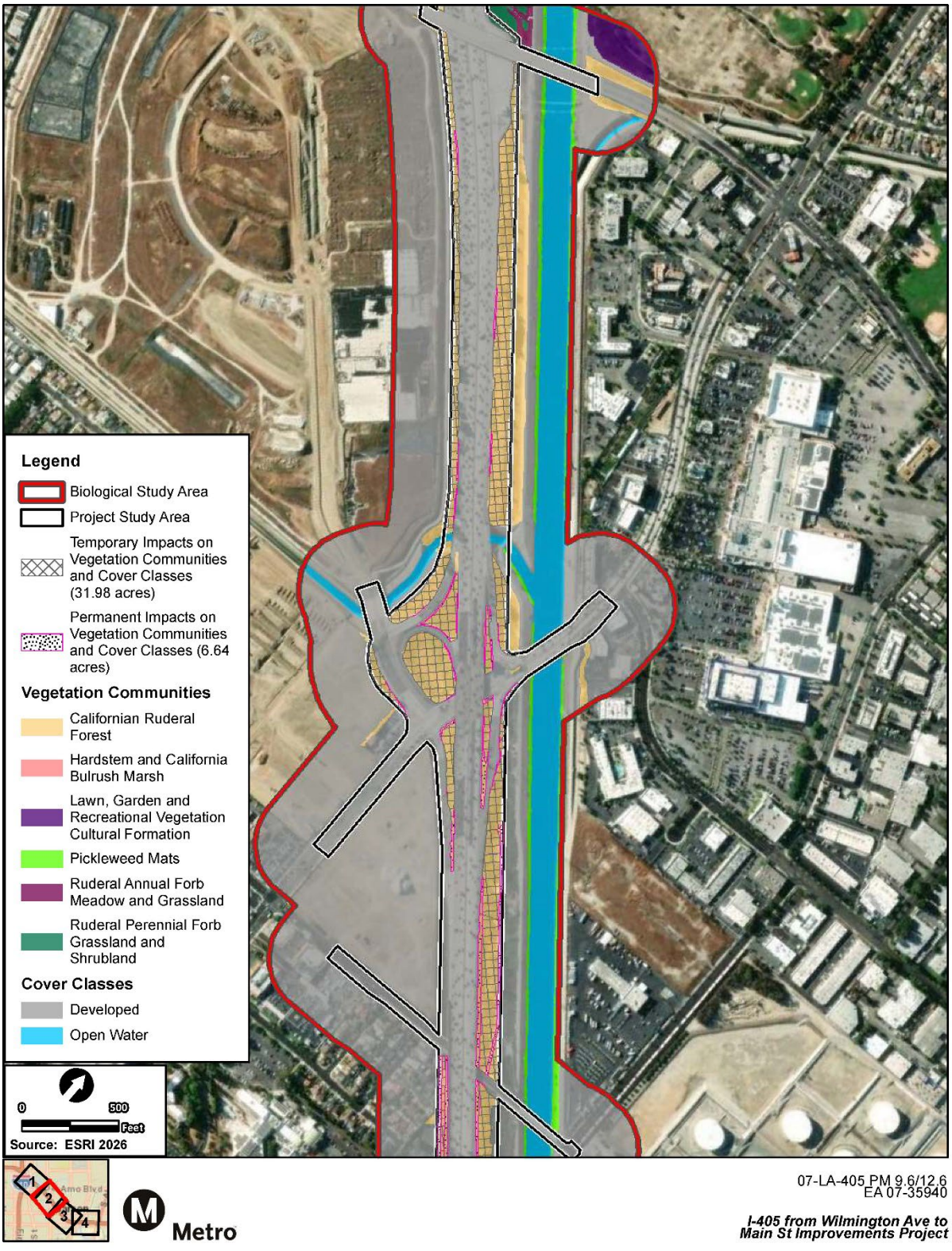

Figure 2.4.1-10: Impacts on Vegetation Communities and Cover Classes under Alternative 2 (Sheet 2 of 4)

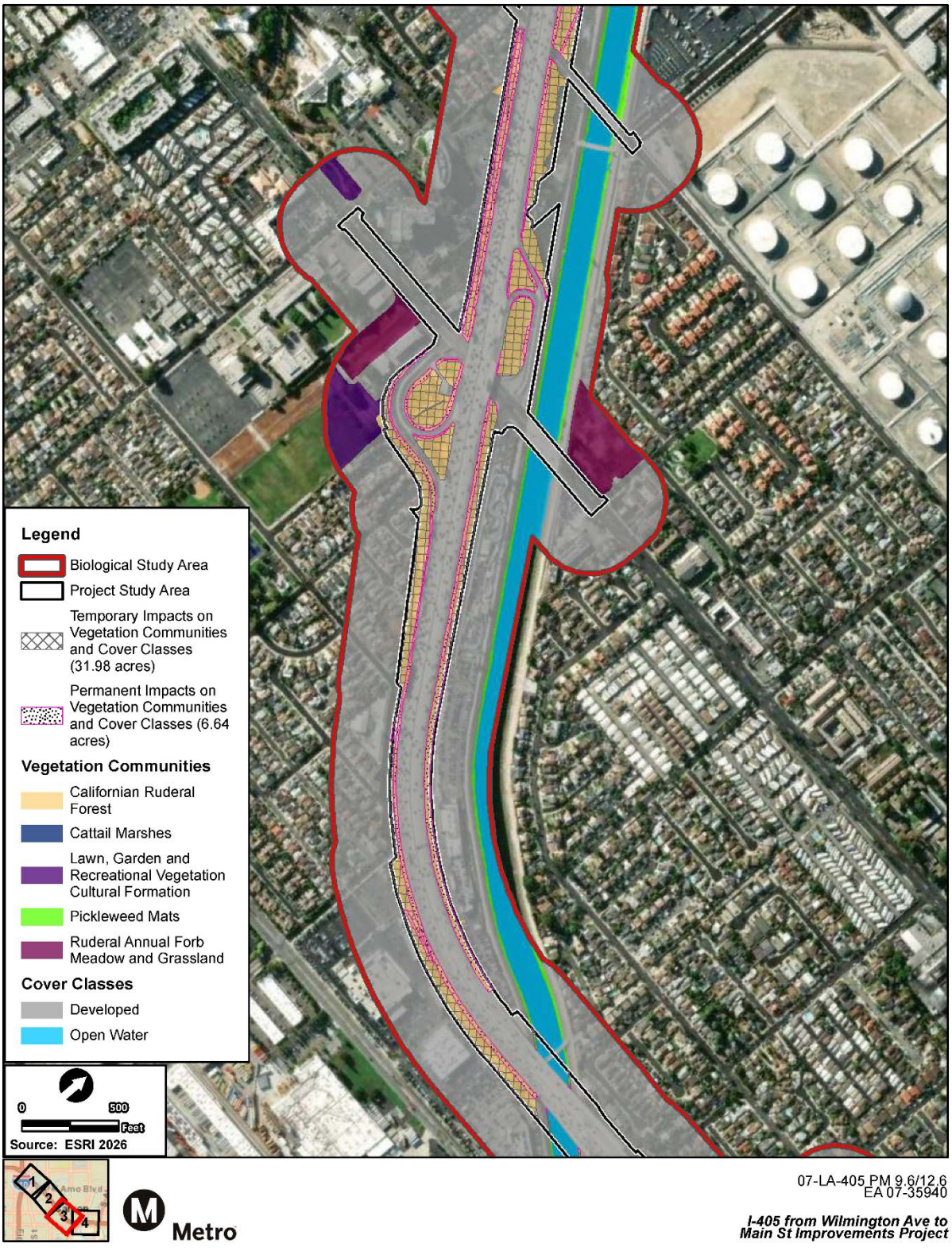

Figure 2.4.1-11: Impacts on Vegetation Communities and Cover Classes under Alternative 2 (Sheet 3 of 4)

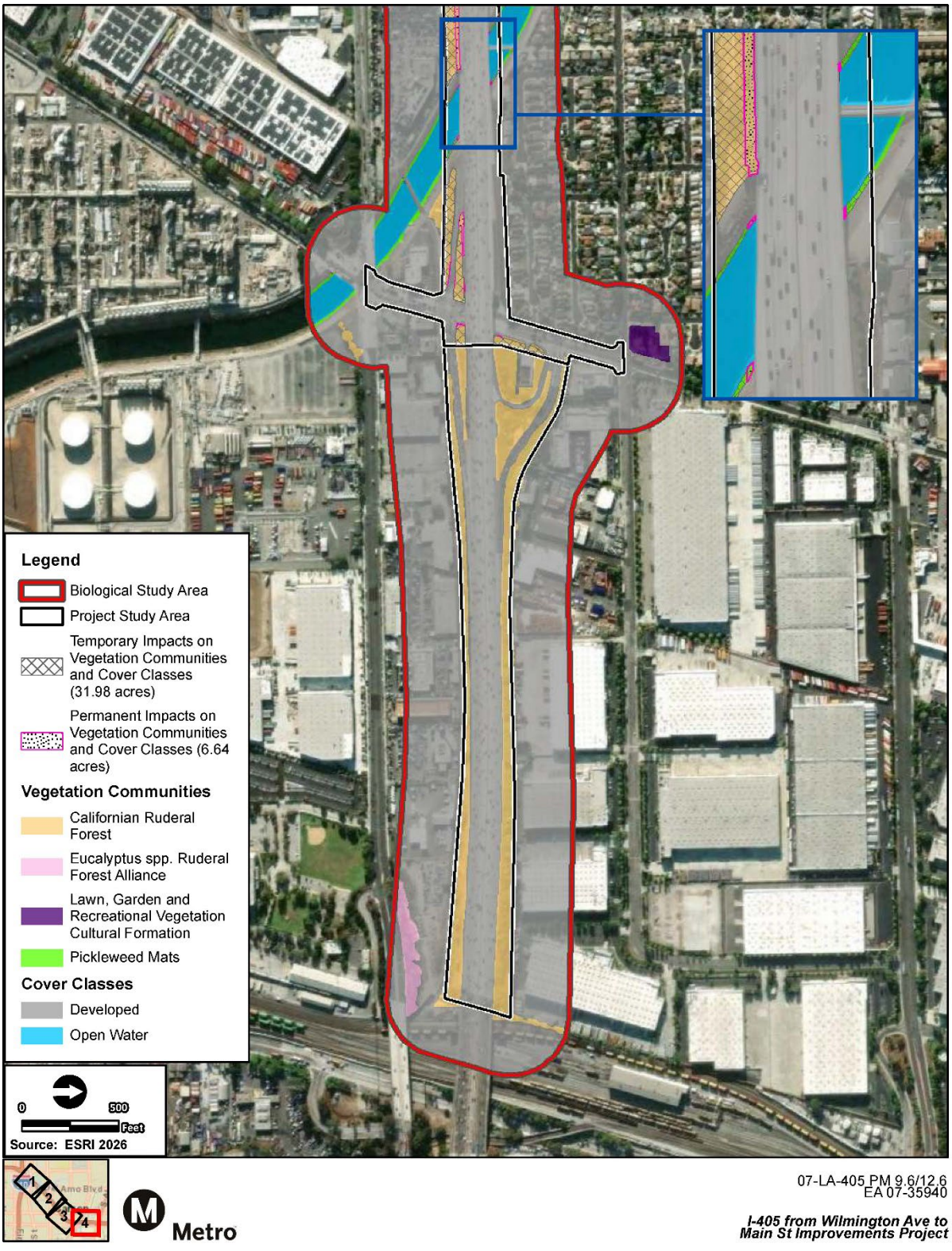

Figure 2.4.1-12: Impacts on Vegetation Communities and Cover Classes under Alternative 2 (Sheet 4 of 4)

Table 2.4.1-2: Alternative 2 – Impacts on Vegetation Communities in the Biological Study Area

Vegetation Community	Permanent Impacts (Acres)	Temporary Impacts (Acres)
Californian Ruderal Forest	6.37	27.58
Eucalyptus spp. Ruderal Forest Alliance	0.00	0.00
Hardstem and California Bulrush Marsh	0.00	0.00
Lawn, Garden and Recreational Vegetation Cultural Formation	0.07	1.86
Pickleweed Mats	0.01	0.07
Ruderal Annual Forb Meadow and Grassland	0.19	2.35
Ruderal Perennial Forb Meadow and Grassland	0.00	0.12
Total Impacts	6.64	31.98

Source: (GPA Consulting 2025)

Measures **NC-1** through **NC-10**, which would minimize work areas, prevent use of pesticides/insecticides, require equipment storage and staging away from sensitive natural communities, implement BMPs, require restoration of temporary impact areas, and require installation of fencing around Environmentally Sensitive Areas (ESAs), are proposed to avoid and minimize direct and indirect impacts on natural communities and waters associated with Pickleweed Mats. Measure **NC-11**, which requires restoration or compensatory mitigation at a minimum 1:1 ratio, would be implemented if potential permanent direct impacts on Pickleweed Mats occur. These measures would help maintain hydrology and soils stability and protect Pickleweed Mats habitat and adjacent wetland areas within the Dominguez Channel and its tributaries. Therefore, with incorporation of Measures **NC-1** through **NC-10**, no adverse short-term direct or indirect impacts on special status natural communities would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Alternative 3 would avoid direct impacts on Pickleweed Mats; therefore, temporary and permanent direct impacts on Pickleweed Mats are not anticipated. However, the proposed Project under Alternative 3 could result in temporary indirect impacts on the Del Amo Channel and associated Pickleweed Mats from dust generated from construction (see Figure 2.4.1-13 though Figure 2.4.1-16). A summary of impacts under Alternative 3 on all vegetation communities within the BSA, including Pickleweed Mats, is provided in Table 2.4.1-3 below. With implementation of Project Features **PF-WQ-2**, **PF-WQ-4**, **PF-WQ-5** and **PF-WQ-13**, which would ensure that the proposed Project is in compliance with the RL 2 monitoring requirements of the CGP, and Measure **NC-5**, indirect impacts would be minimized to the extent feasible. With implementation of these measures, no short-term direct or indirect adverse impacts on special-status natural communities would result from the proposed Project under Alternative 3.

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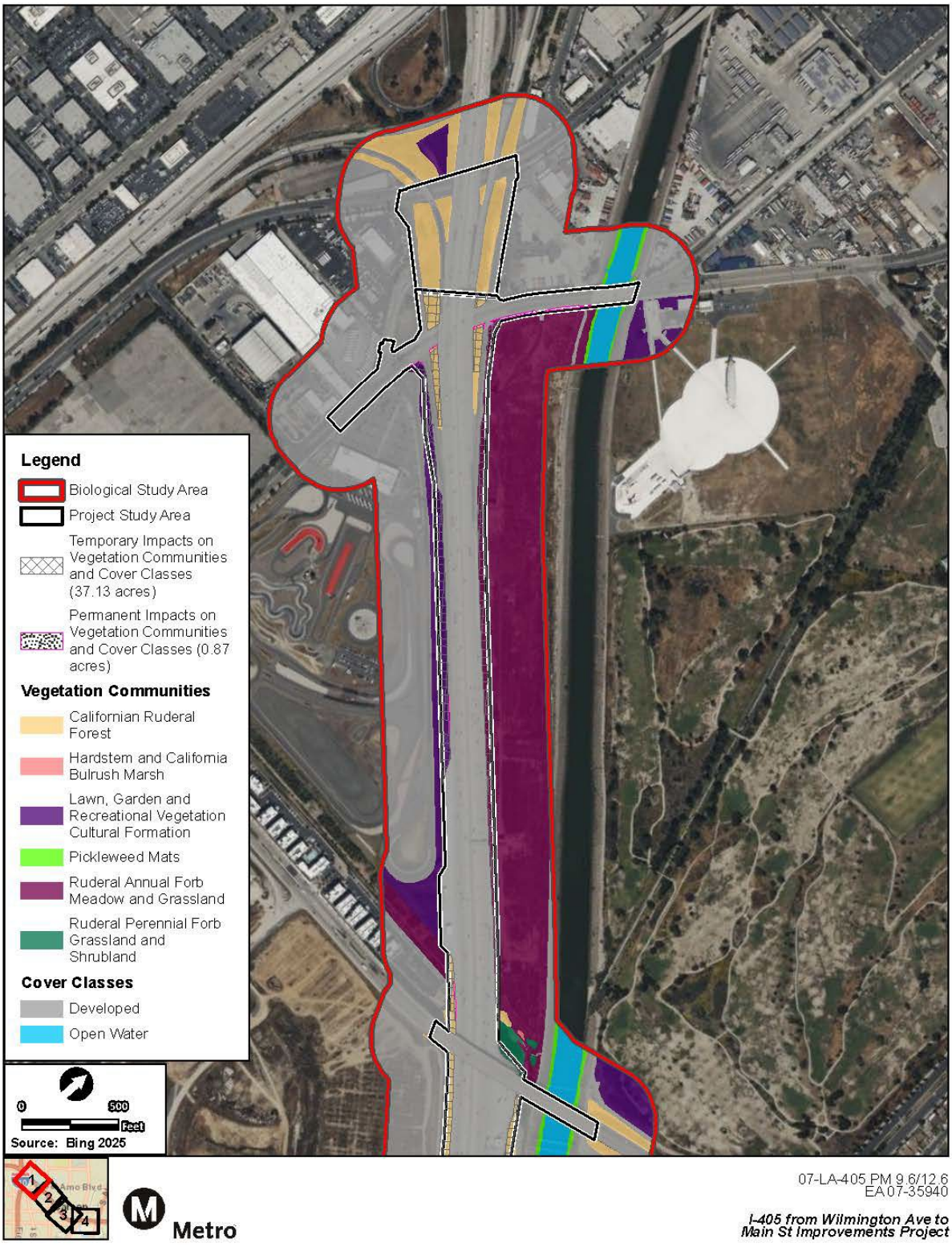

Figure 2.4.1-13: Impacts on Vegetation Communities and Cover Classes under Alternative 3 (Sheet 1 of 4)

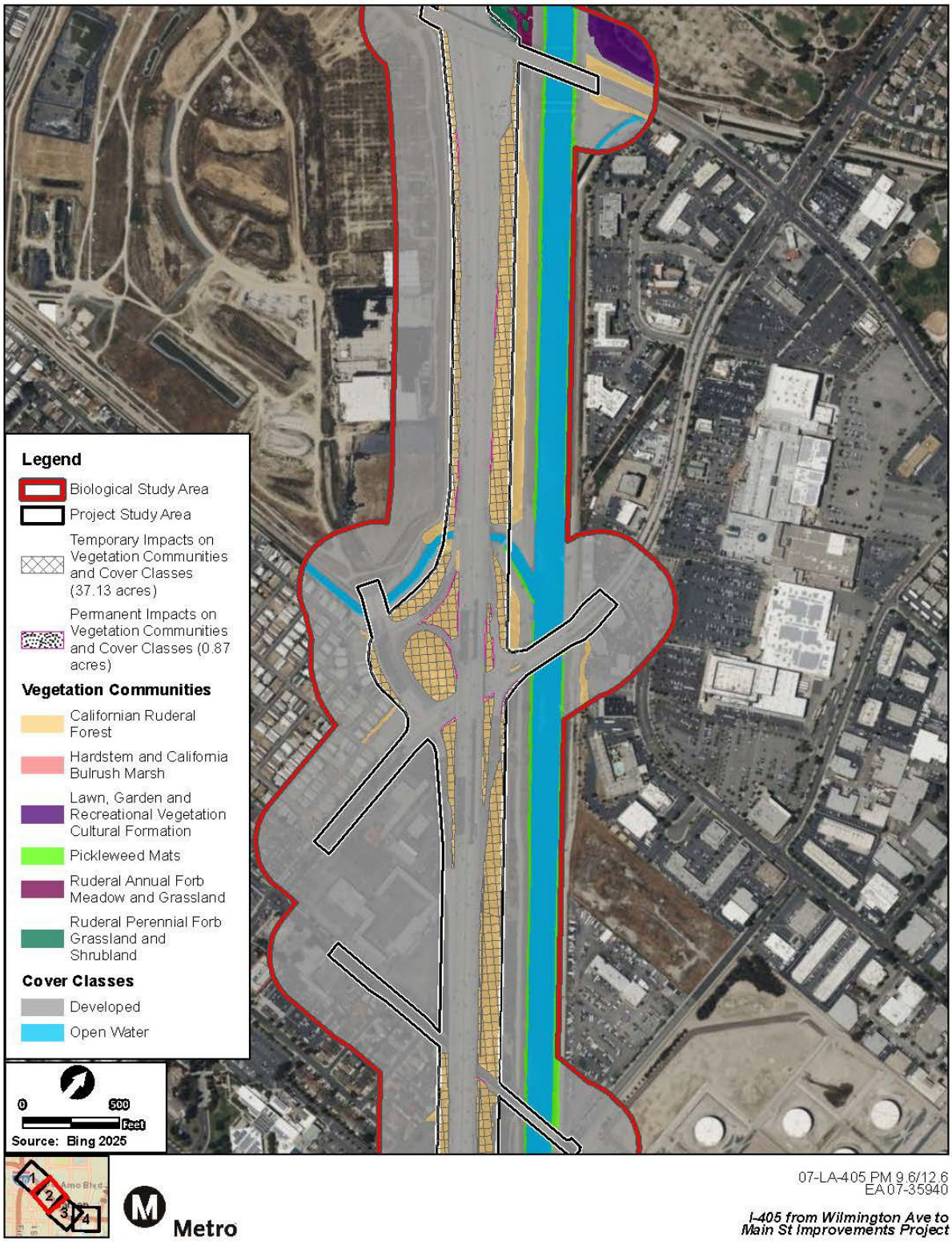

Figure 2.4.1-14: Impacts on Vegetation Communities and Cover Classes under Alternative 3 (Sheet 2 of 4)

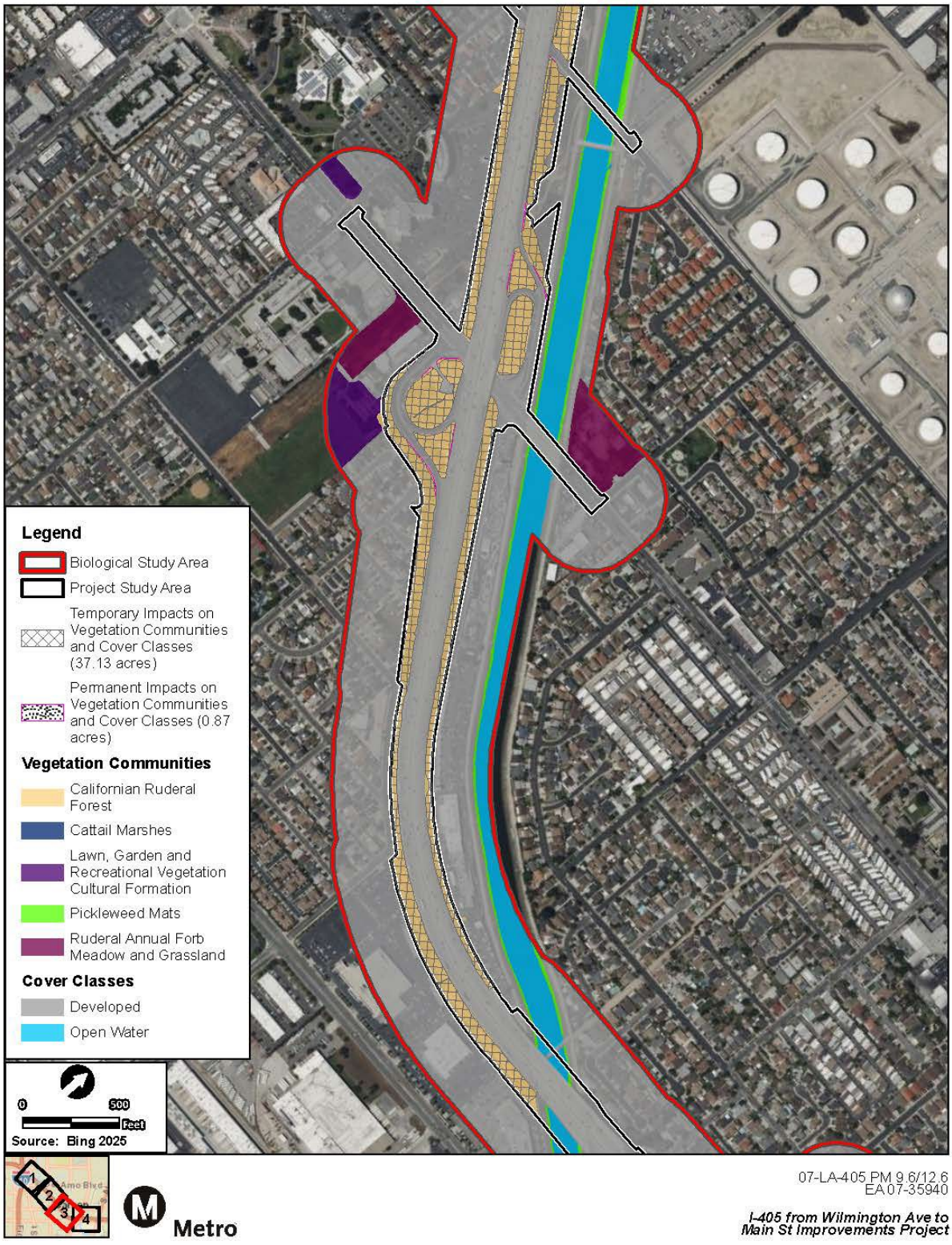

Figure 2.4.1-15: Impacts on Vegetation Communities and Cover Classes under Alternative 3 (Sheet 3 of 4)

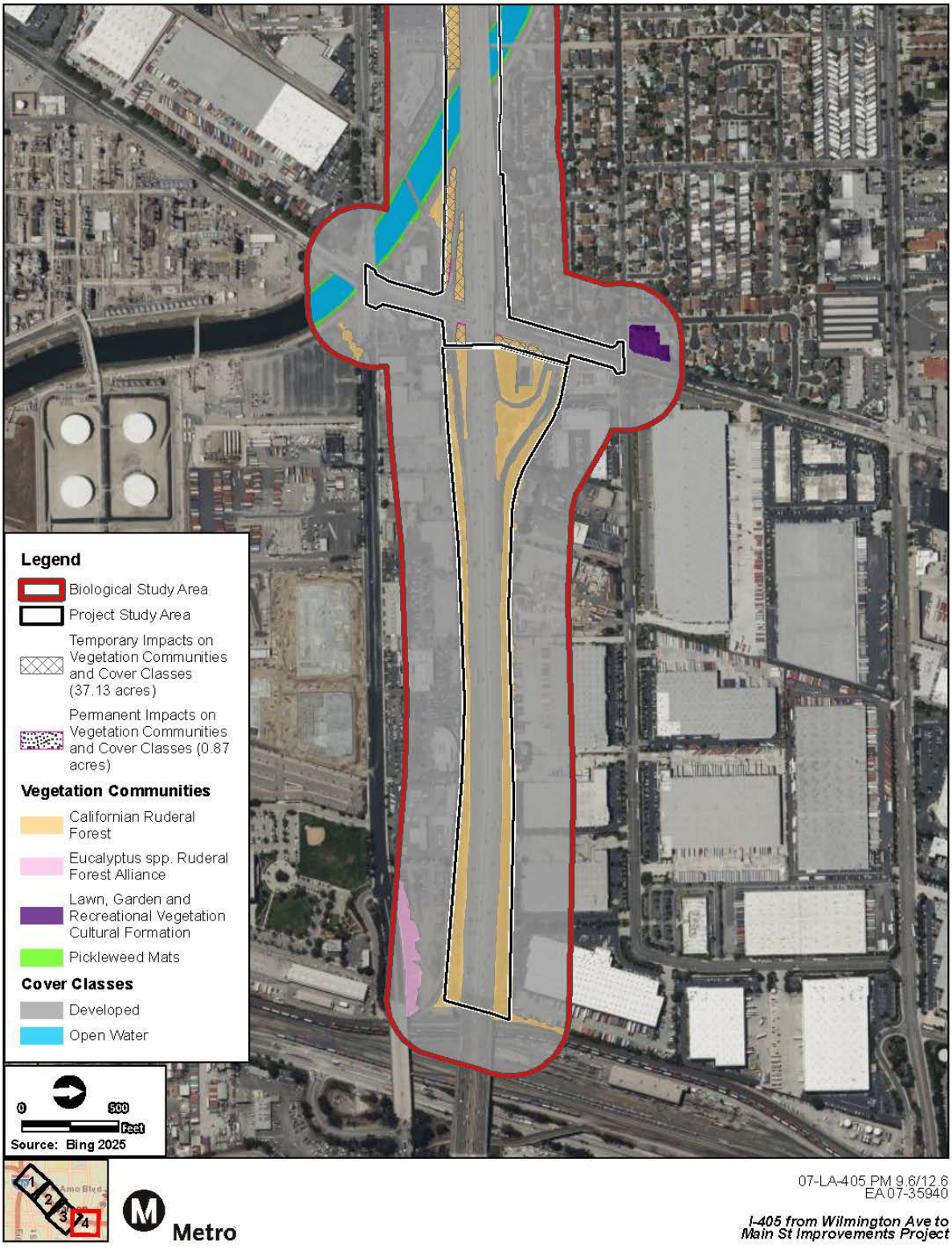

Figure 2.4.1-16: Impacts on Vegetation Communities and Cover Classes under Alternative 3 (Sheet 4 of 4)

Table 2.4.1-3: Alternative 3 – Impacts on Vegetation Communities in the Biological Study Area

Vegetation Community	Permanent Impacts (Acres)	Temporary Impacts (Acres)
Californian Ruderal Forest	0.72	32.83
Eucalyptus spp. Ruderal Forest Alliance	0.00	0.00
Hardstem and California Bulrush Marsh	0.00	0.00
Lawn, Garden and Recreational Vegetation Cultural Formation	0.04	1.83
Pickleweed Mats	0.00	0.00
Ruderal Annual Forb Meadow and Grassland	0.11	2.35
Ruderal Perennial Forb Meadow and Grassland	0.00	0.12
Total Impacts	0.87	37.13

Source: (GPA Consulting 2025)

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no long-term direct or indirect impacts on special-status natural communities would result from the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

As discussed above under construction impacts for Alternative 2, permanent direct and indirect impacts on Pickleweed Mats (0.01 acre) would be mitigated through Measure **NC-11**, which requires restoration or compensatory mitigation at a minimum 1:1 ratio. With implementation of Measure **NC-11**, no long-term direct or indirect impacts on Pickleweed Mat communities would result from operation of the proposed Project under Alternative 2.

Operation of the proposed Project would not introduce new sources of disturbance, alter hydrology, fragment habitat, or otherwise affect natural communities beyond those impacts addressed above under construction impacts. Improvements would remain within the existing transportation corridor and engineered channel margins. Therefore, no long-term direct or indirect adverse impacts on special-status natural communities would result from operation of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

As discussed above under construction impacts for Alternative 3, Alternative 3 would not result in permanent direct and indirect impacts on Pickleweed Mats or other special-status natural communities. Operation of Alternative 3 would not modify vegetation communities, hydrology, or habitat conditions beyond temporary construction effects. No new ongoing sources of disturbance would be introduced during operation.

Therefore, no long-term direct or indirect adverse impacts on special-status natural communities would result from operation of the proposed Project under Alternative 3.

2.4.1.3 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are proposed:

Measure NC-1 During construction, the California Department of Transportation's (Caltrans) Resident Engineer or designated contractor will ensure that vegetation removal and excavation would be reduced, to the extent feasible.

Measure NC-2 During construction, the California Department of Transportation's (Caltrans) Resident Engineer or designated contractor will ensure that pesticide/insecticide would not be used as a part of the Project.

Measure NC-3 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that work areas would be reduced to the maximum extent feasible.

Measure NC-4 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that equipment staging and storage areas for vehicles, equipment, material, fuels, lubricants, and solvents are restricted to paved areas and would be a minimum of 50 feet from jurisdictional features.

Measure NC-5 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that Best Management Practices (BMP), such as silt fencing, fiber rolls, straw bales, or other measures, would be implemented to minimize dust, dirt, and construction debris from entering the jurisdictional features, and/or leaving the construction area.

Measure NC-6 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that appropriate hazardous material BMPs would be implemented to reduce the potential for chemical spills or contaminant releases into the jurisdictional features including any non-stormwater discharge.

Measure NC-7 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that all equipment refueling, and maintenance would be conducted in the staging area away from jurisdictional features. In addition, vehicles and equipment would be checked daily for fluid and fuel leaks, and drip pans would be placed under all equipment that is parked and not in operation. Any leaking vehicle or equipment

would not be operated in the Project Study Area until repaired. All workers would be informed of the importance of preventing spills and the appropriate measures to take should a spill happen.

Measure NC-8 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that stationary equipment, such as motors, pumps, generators, compressors, and welders located within 100 feet of the jurisdictional features, would be positioned over drip-pans, including when in operation.

Measure NC-9 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that all temporarily disturbed areas would be restored to pre-project conditions or better.

Measure NC-10 During construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that High-visibility Environmental Sensitive Area (ESA) fencing is installed around Pickleweed Mats to prevent encroachment by crews or equipment.

The following mitigation measure is proposed:

Measure NC-11 Prior to or during construction, the California Department of Transportation's (Caltrans) Resident Engineer, or designated contractor, will ensure that mitigation for permanent impacts on jurisdictional features and Pickleweed Mats will be accomplished through the purchase of in-lieu fees, mitigation bank credits at an appropriate mitigation bank, on-site replanting, or other methods deemed acceptable by the regulatory agencies. Mitigation will be at a minimum ratio of 1:1; however, the final ratio will be established through consultation and coordination with regulatory agencies during the permitting process in the PS&E phase. If on-site replanting is implemented, the revegetated area would be within the Project Study Area and would be larger than the impacted area to account for potential variability in restoration success.

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2.4.2 Wetlands and Other Waters

2.4.2.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the CWA (33 USC 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce.

Section 404 of the CWA establishes a regulatory program which is run by the USACE with oversight by the USEPA. Certain permits require the identification of a "least environmentally damaging practicable alternative" to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences.

The EO for the Protection of Wetlands (11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 11990 states that a federal agency, such as the FHWA and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

At the State level, wetlands and waters are regulated primarily by the SWRCB, RWQCB, and the CDFW. RWQCB definitions of Waters of the State are also outlined in the SWRCB Procedures for Discharges of Dredge or Fill Material to Waters of the State. Waters of the U.S. are a subset of waters of the State. In certain circumstances, the California Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code (CFGC) require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) to oversee water quality. Discharges under the Porter-Cologne Act are permitted by waste discharge requirements and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the SWRCB (for projects that span more than one RWQCB region) and RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request.

2.4.2.2 Affected Environment

This section is based on the proposed Project's *Aquatic Resources Delineation Report* (ARDR) (GPA Consulting 2025a), completed in April 2025, and the NES[MI] (GPA Consulting 2025b), completed in July 2025.

The 550-acre BSA (see Figure 2.4.1-1 through Figure 2.4.1-4) spans along I-405 from PM 9.6 to PM 12.6 and extends 300 feet beyond the proposed Project Study Area to account for potential indirect impacts. Survey methodology and BSA parameters are described in further detail in Section 2.4.1, *Natural Communities.* The BSA was visually inspected for wetland characteristics, such as topography, flowing water, drainage patterns, and presence of wetland plants.

The definition and methodology for identifying wetland resources in the BSA can be found in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008b), which is a supplement to the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987). The delineation for waters was conducted in accordance with *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008a).The wetland indicator status of the plants was determined using the *National Wetland Plant List, Arid West Region* (USACE 2022).

Major aquatic features within the BSA include the Dominguez Channel and its engineered tributaries, the Torrance Lateral Channel, Del Amo Channel, and six concrete storm-drain channels (A through F). Two wetlands were identified within the BSA: Wetland One and the Dominguez Channel Wetland. Figure 2.4.2-1 through Figure 2.4.2-4, Figure 2.4.2-5 through Figure 2.4.2-8, and Figure 2.4.2-9 through Figure 2.4.2-12 depict the jurisdictional areas and Table 2.4.2-1 and Table 2.4.2-2 summarize the delineation results and the corresponding acreages per agency jurisdiction.

Jurisdictional Summary

US Army Corps of Engineers

The BSA was evaluated for waters under potential USACE jurisdiction by delineating the ordinary highwater mark (OHWM). In addition, potentially jurisdictional wetlands were identified by determining the presence of wetland vegetation, hydrology, and hydric soils within the OHWM. Within the BSA, the Dominguez Channel, which drains into the Pacific Ocean, is expected to fall under USACE jurisdiction as water of the U.S.

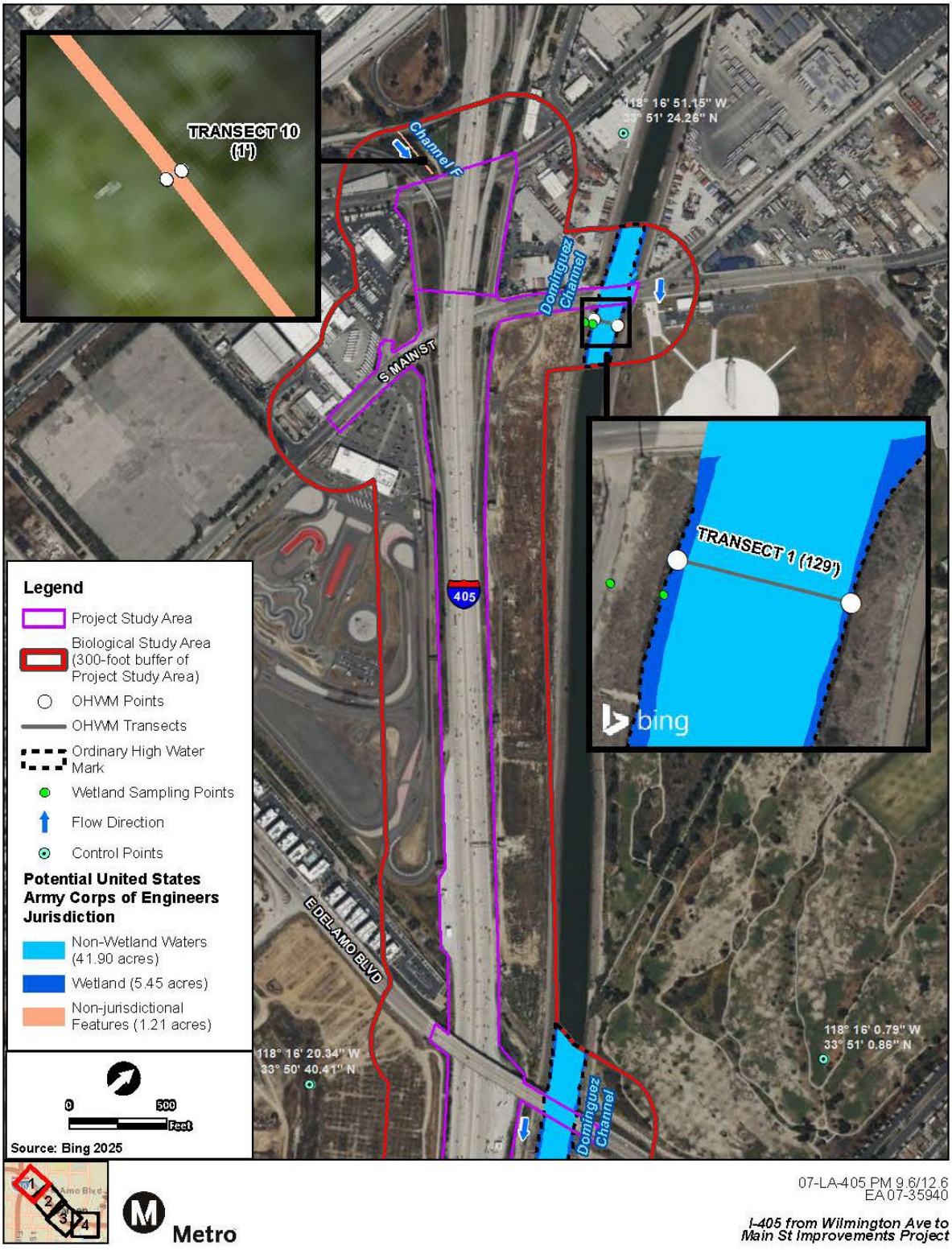

Figure 2.4.2-1: Potential United States Army Corps of Engineers Jurisdiction (Sheet 1 of 4)

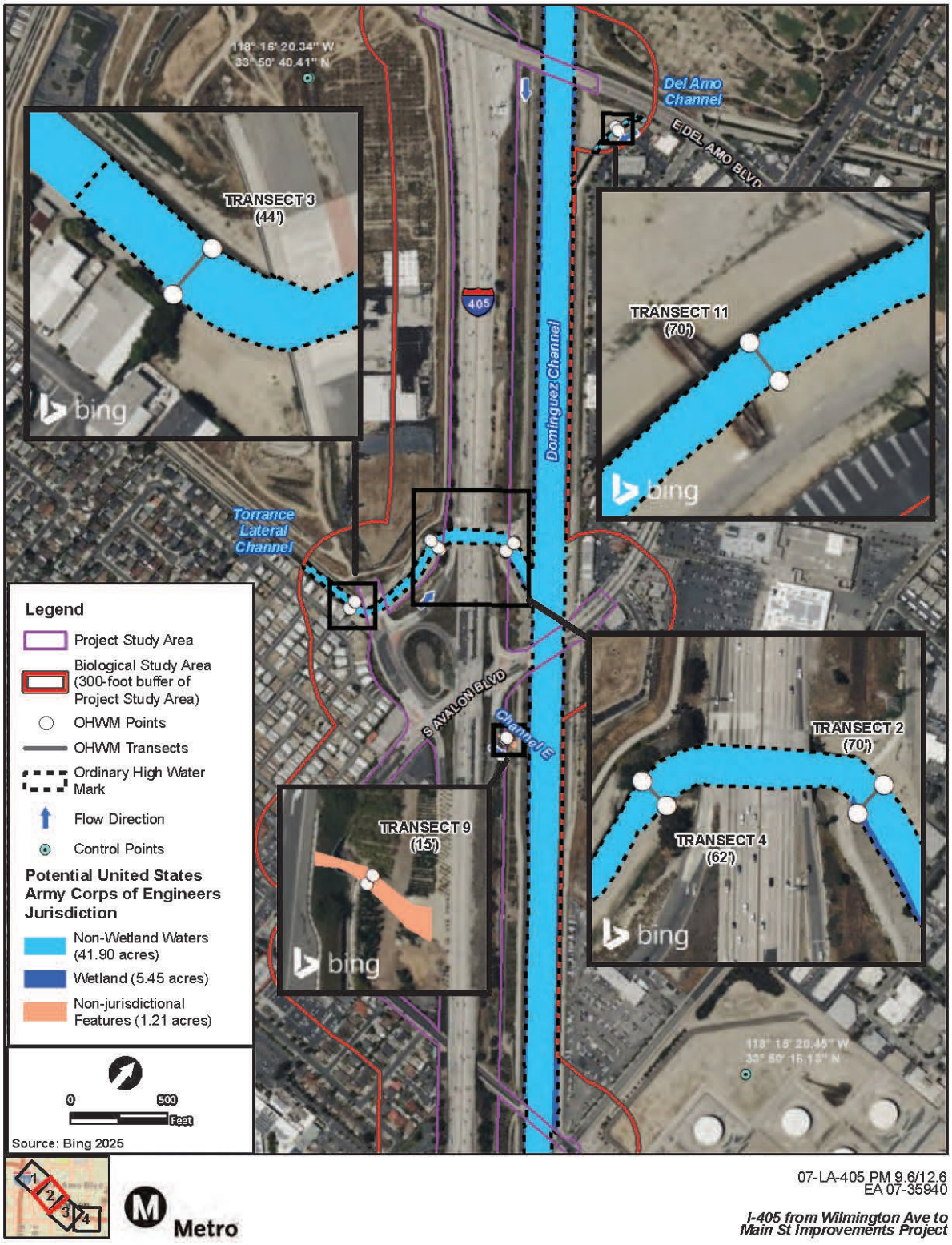

Figure 2.4.2-2: Potential United States Army Corps of Engineers Jurisdiction (Sheet 2 of 4)

Figure 2.4.2-3: Potential United States Army Corps of Engineers Jurisdiction (Sheet 3 of 4)

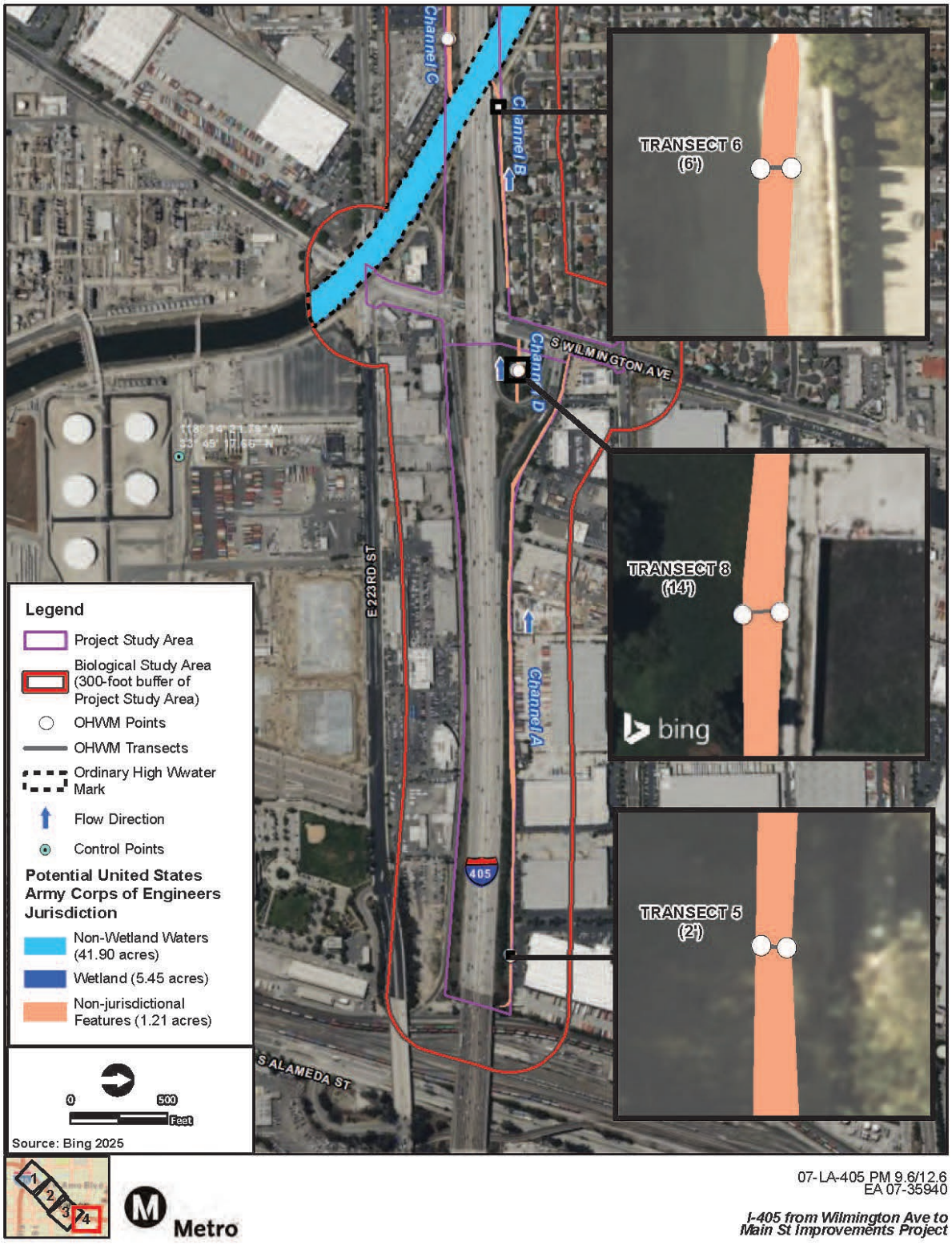

Figure 2.4.2-4: Potential United States Army Corps of Engineers Jurisdiction (Sheet 4 of 4)

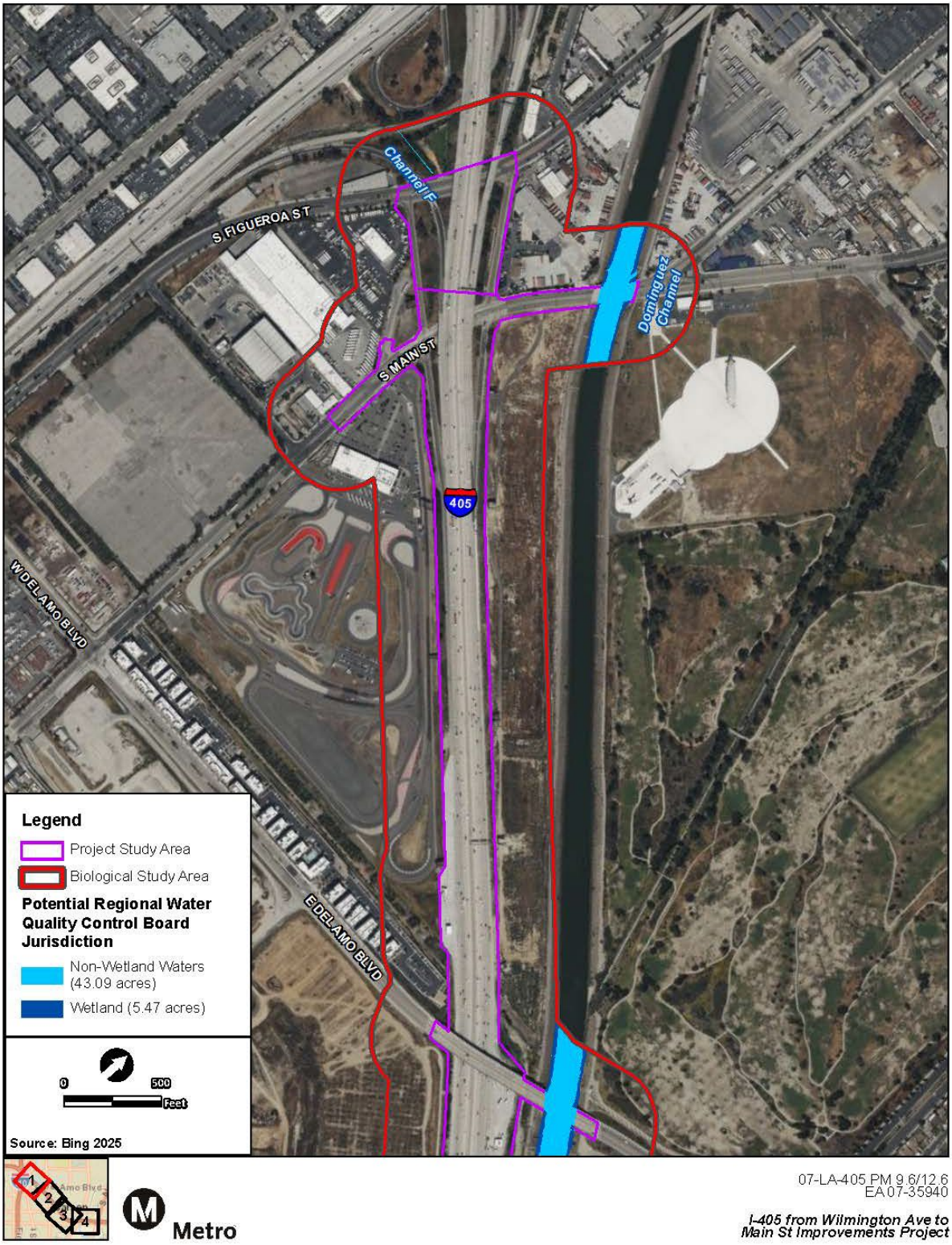

Figure 2.4.2-5: Potential Regional Water Quality Control Board Jurisdiction (Sheet 1 of 4)

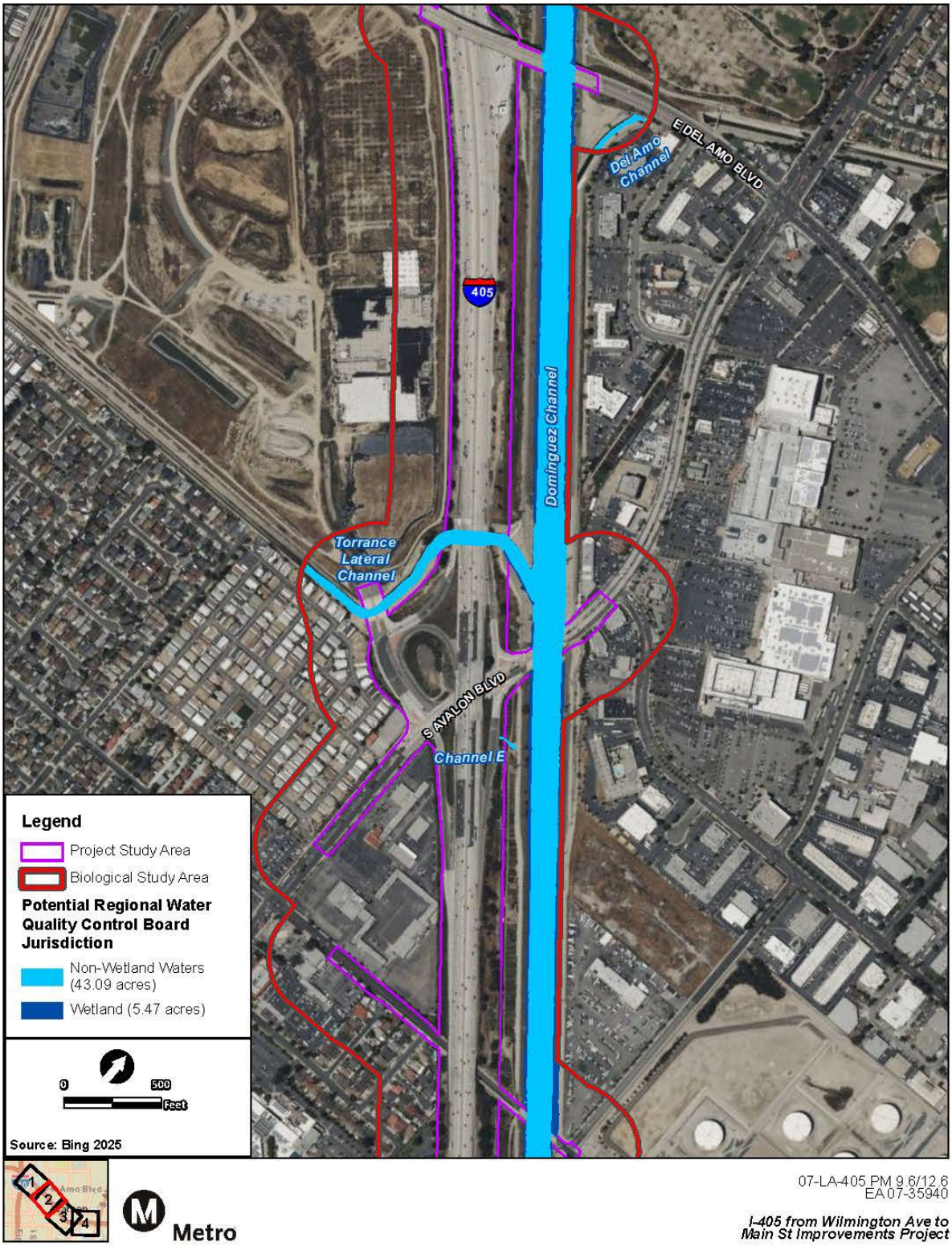

Figure 2.4.2-6: Potential Regional Water Quality Control Board Jurisdiction (Sheet 2 of 4)

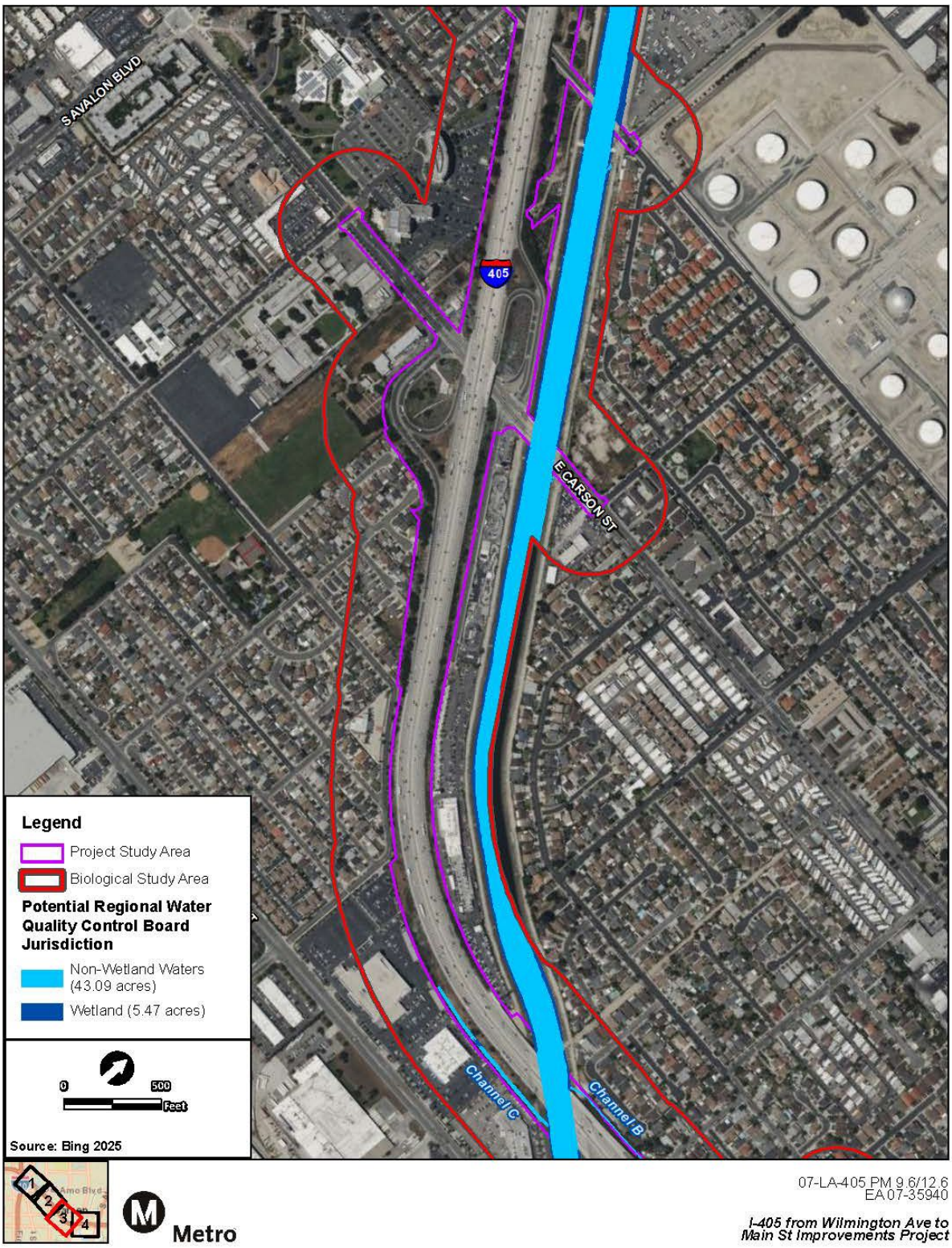

Figure 2.4.2-7: Potential Regional Water Quality Control Board Jurisdiction (Sheet 3 of 4)

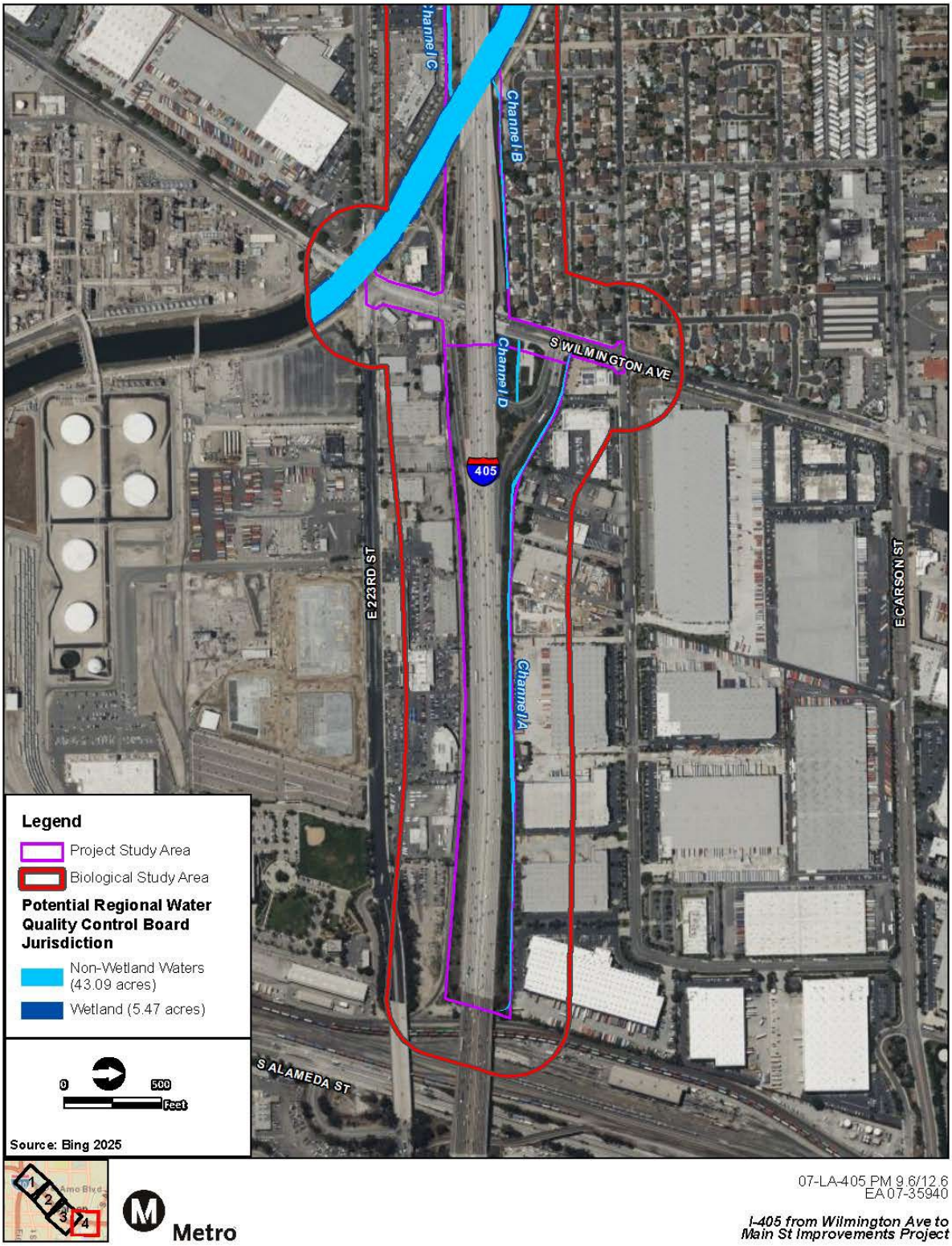

Figure 2.4.2-8: Potential Regional Water Quality Control Board Jurisdiction (Sheet 4 of 4)

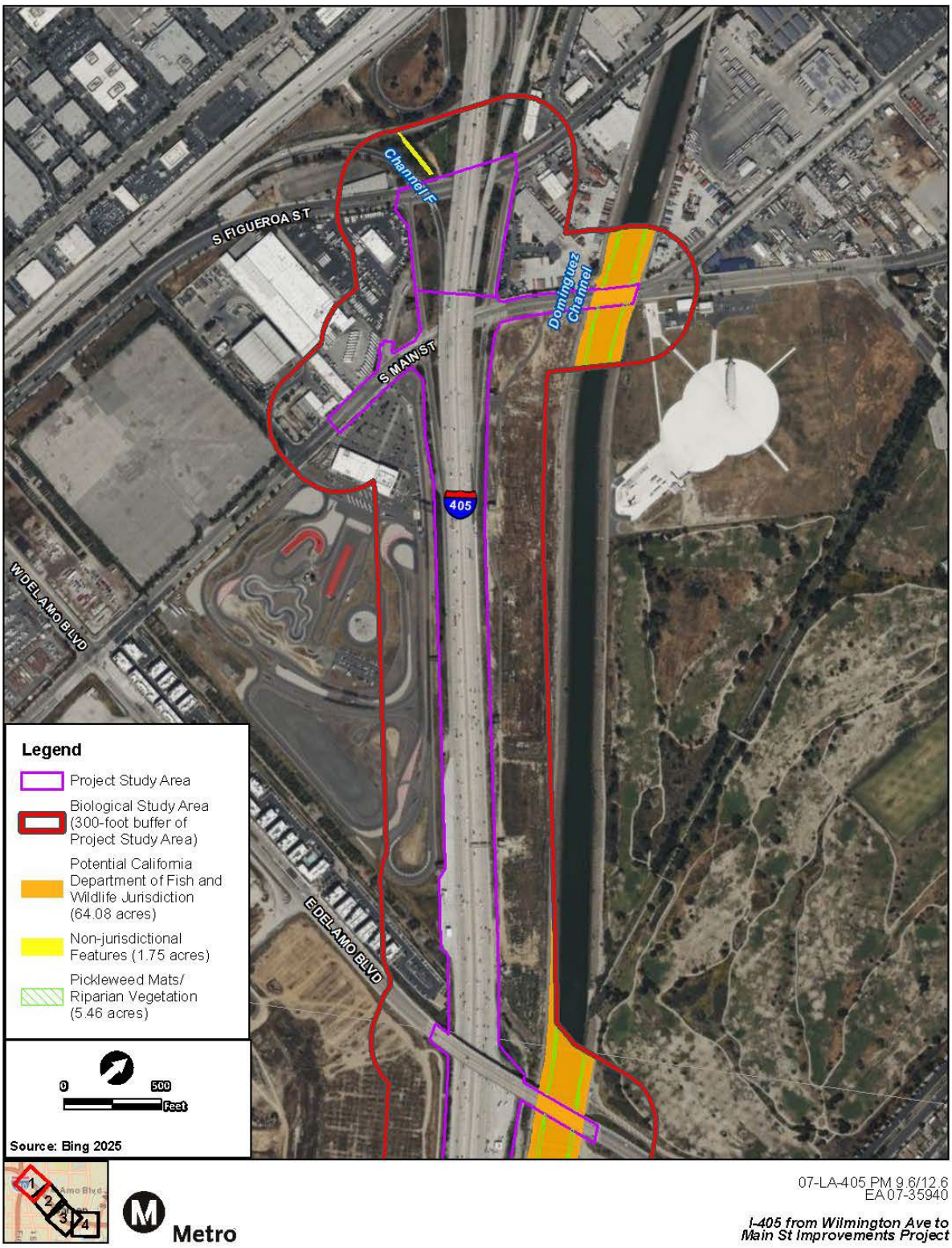

Figure 2.4.2-9: Potential California Department of Fish and Wildlife Jurisdiction (Sheet 1 of 4)

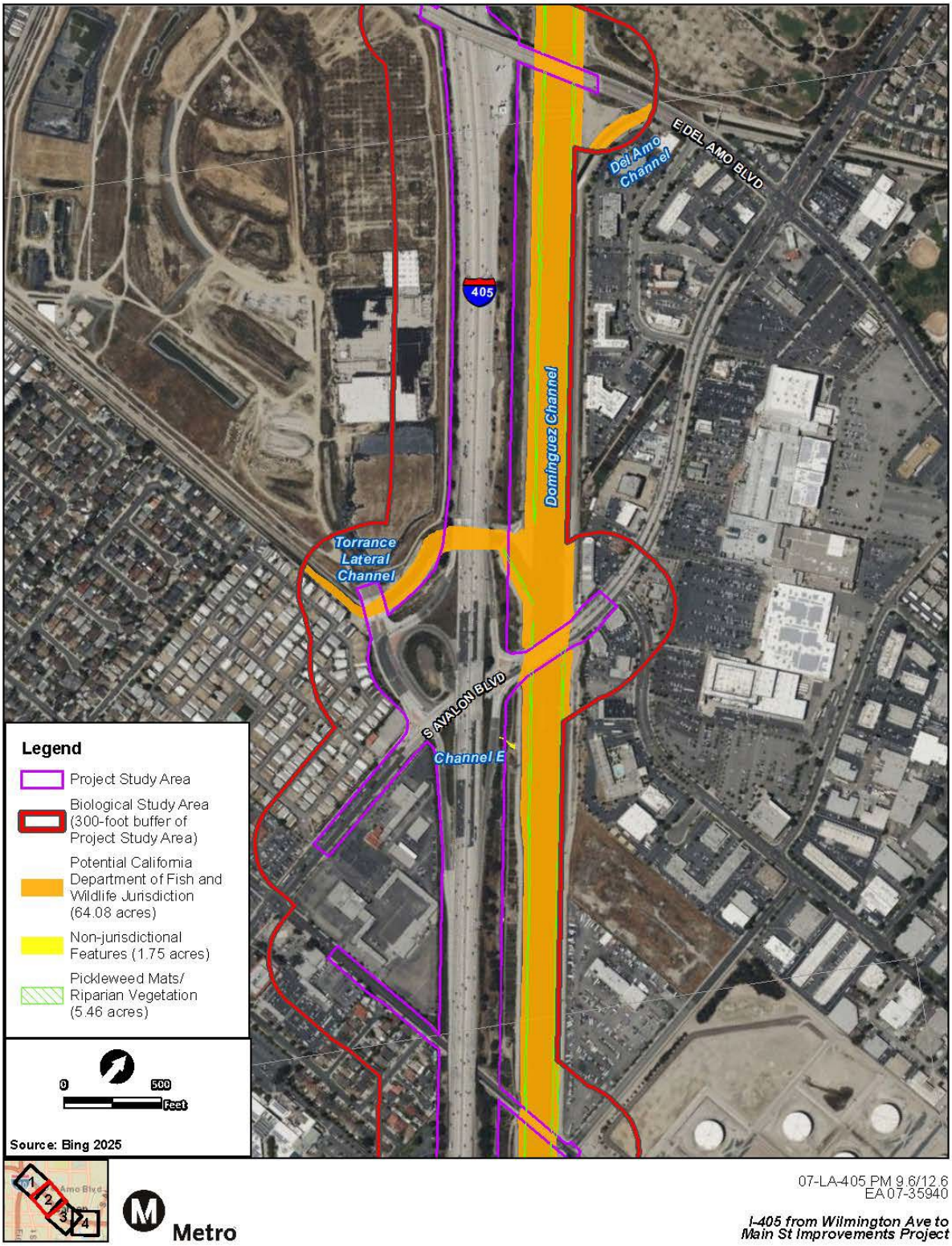

Figure 2.4.2-10: Potential California Department of Fish and Wildlife Jurisdiction (Sheet 2 of 4)

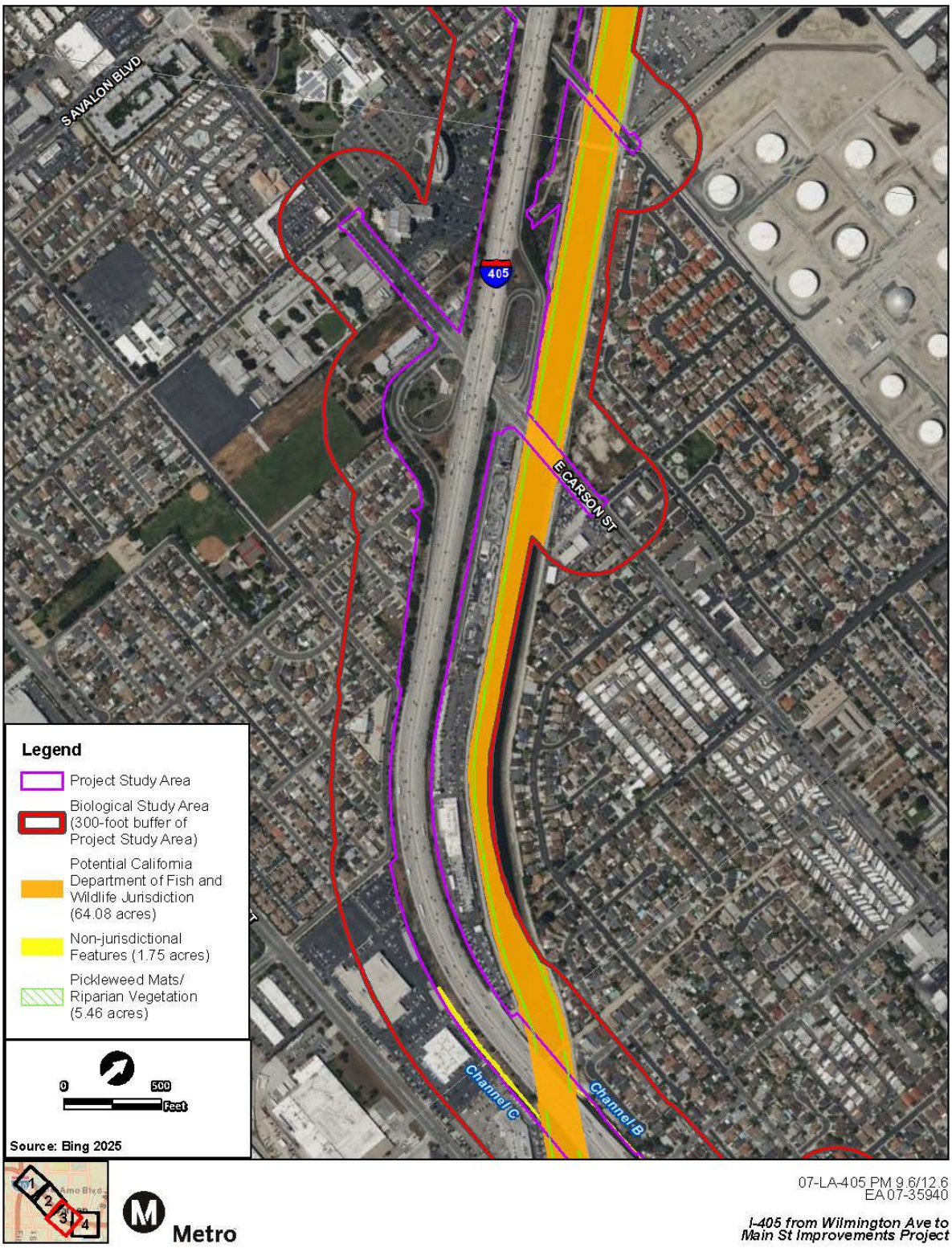

Figure 2.4.2-11: Potential California Department of Fish and Wildlife Jurisdiction (Sheet 3 of 4)

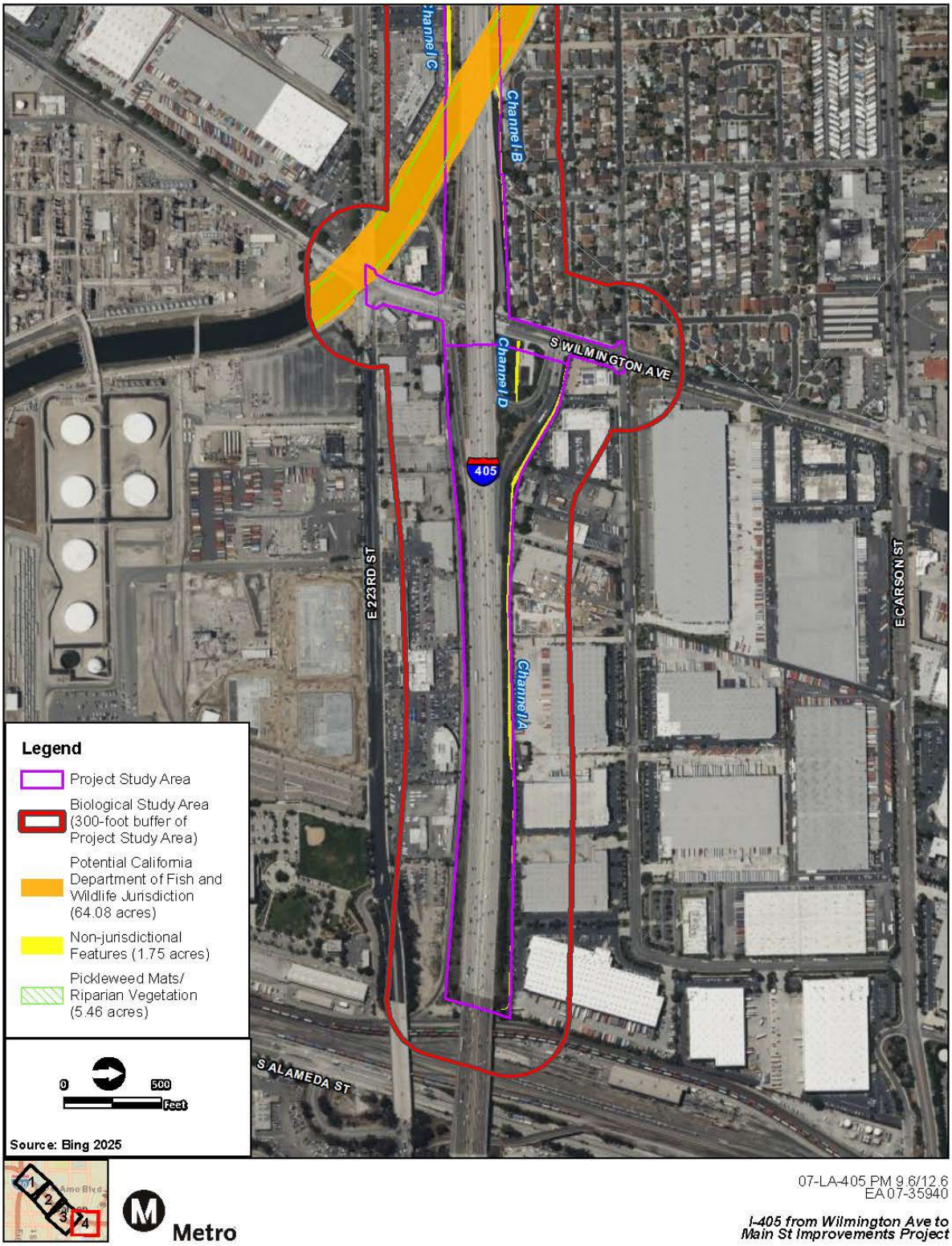

Figure 2.4.2-12: Potential California Department of Fish and Wildlife Jurisdiction (Sheet 4 of 4)

Table 2.4.2-1: Potential Jurisdictional Non-Wetland Waters within the Biological Study Area

Aquatic Resource	United States Army Corps of Engineers (Acres)	Regional Water Quality Control Board (Acres)	California Department of Fish and Wildlife (Acres)
Dominguez Channel	39.84	39.84	60.44*
Torrance Lateral Channel	1.90	1.90	3.02
Del Amo Channel	0.16	0.16	0.62
Channel A	0.00	0.63	0.00
Channel B	0.00	0.12	0.00
Channel C	0.00	0.31	0.00
Channel D	0.00	0.08	0.00
Channel E	0.00	0.03	0.00
Channel F	0.00	0.01	0.00
Total	***41.90***	***43.08***	***64.08***

Source:(GPA Consulting 2025a)
Note: *Of the total 60.44 acres under CDFW jurisdiction, 5.46 acres consist of riparian vegetation (Pickleweed Mats) and 54.98 acres are unvegetated.

Table 2.4.2-2: Potential Jurisdictional Wetland Waters within the Biological Study Area

Aquatic Resource	United States Army Corps of Engineers (Acres)	Regional Water Quality Control Board (Acres)	California Department of Fish and Wildlife (Acres)
Dominguez Channel	5.45	5.45	0.00
Wetland One	0.00	0.02	0.00
Total	***5.45***	***5.47***	***0.00***

Source:(GPA Consulting 2025a)

The Dominguez Channel is a human-made perennial channel that exhibits relatively permanent flows, a perceptible OHWM, and is identified as a Traditional Navigable Waterway regulated under Section 404 of the CWA. The Torrance Lateral Channel and Del Amo Channel are also expected to fall under USACE jurisdiction, exhibiting surface waters, an OHWM, and connectivity to the Dominguez Channel, qualifying as relatively permanent tributaries. The Dominguez Channel Wetland exhibited hydrophytic vegetation and hydrology and qualifies as waters of the U.S. regulated by USACE under Section 404 of the CWA. Therefore, waters of the U.S. within the BSA total approximately 47.35 acres and include approximately 41.90 acres of non-wetland waters and approximately 5.45 acres of wetlands (see Table 2.4.2-1, Table 2.4.2-2, and Figure 2.4.2-1 through Figure 2.4.2-4). Channels A through F are concrete structures constructed in upland areas and are designed to divert urban, residential, and roadway runoff. These features are ephemeral and intended solely for short-term stormwater management and do not maintain a consistent flow. Therefore, they are not expected to be jurisdictional under USACE. Wetland One exhibited hydrophytic vegetation and signs of hydrology. However, soils were disturbed because the area is within a concrete-lined channel and a soil sample was not feasible. Wetland One was observed within Channel C, which is potentially non-jurisdictional. Because Wetland One was observed within a

non-jurisdictional channel, the wetland was determined to be potentially non-jurisdictional to USACE. Therefore, Channels A through F and Wetland One are treated as non-jurisdictional for CWA purposes.

Regional Water Quality Control Board

Waterways with flowing surface water are expected to fall under RWQCB jurisdiction. The BSA was evaluated for wetlands and non-wetland waters potentially under RWQCB jurisdiction by delineating the OHWM and assessing the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. Within the BSA, the Dominguez Channel, Torrance Lateral Channel, Del Amo Channel, and Channels A through F exhibit signs of surface flow, OHWM, and aquatic or emergent vegetation, supporting their classification as Waters of the State under the Porter-Cologne Act and the CWA. Wetland One, located within Channel C, supports hydrophytic vegetation and displays surface hydrology. Although soil data could not be collected due to the concrete substrate, the feature satisfies two wetland criteria and falls within a jurisdictional channel and is expected to fall under RWQCB jurisdiction. Similarly, the Dominguez Channel Wetland exhibits hydrophytic vegetation and hydrology but soil sampling was not feasible due to rocky levees; therefore, it is considered jurisdictional for meeting two wetland criteria within a disturbed context. RWQCB waters of the State total approximately 48.56 acres, including approximately 43.09 acres of non-wetland waters and approximately 5.47 acres of wetlands (see Table 2.4.2-1, Table 2.4.2-2, and Figure 2.4.2-5 through Figure 2.4.2-8).

California Department of Fish and Wildlife

Waterways with a defined bed (streambed/riverine) and bank that support aquatic vegetation (riparian habitat) and wildlife are expected to fall under CDFW jurisdiction. Within the BSA, the Dominguez Channel and its tributaries, including the Torrance Lateral Channel and Del Amo Channel, exhibited evidence of flowing water, defined beds and banks, and support aquatic vegetation and wildlife, including Pickleweed Mats (see Section 2.4.1, *Natural Communities*), that are expected to fall under CDFW jurisdiction. In contrast, Channels A through F are concrete structures built with the purpose of diverting urban and roadway runoff. These features experience ephemeral flow. Because of their temporary and sporadic flow, the channels lack the necessary hydrological and ecological conditions required to support aquatic vegetation and wildlife. Therefore, these channels are not expected to be regulated by CDFW under Sections 1600 et seq. of the CFGC. Waters under jurisdiction of CDFW within the BSA total approximately 64.08 acres, including approximately 58.62 acres of unvegetated streambed and 5.46 acres of Pickleweed Mats/riparian (see Table 2.4.2-1 and Figure 2.4.2-9 through Figure 2.4.2-12).

2.4.2.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and Transportation Systems Management/Transportation Demand Management (TSM/TDM) elements would not be implemented. Therefore, no short-term direct or indirect impacts on wetlands or other waters would result from the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Under Alternative 2, the proposed Project would result in temporary direct impacts on the Dominguez Channel and the Torrance Lateral Channel from construction access, grading, and staging equipment, and temporary indirect impacts on the Del Amo Channel from dust generated from construction.

The proposed Project would result in approximately 1.30 acres of temporary direct impacts on non-wetland waters and approximately 0.07 acre of temporary direct impacts on wetland waters of the U.S. under USACE and RWQCB jurisdiction (see Figure 2.4.2-13 through Figure 2.4.2-16, and Table 2.4.2-3). In addition, the proposed Project under Alternative 2 would result in approximately 2.01 acres of temporary direct impacts on unvegetated streambed and approximately 0.07 acre of temporary direct impacts on Pickleweed Mats/riparian vegetation under CDFW jurisdiction (see Figure 2.4.2-17, Figure 2.4.2-18, and Table 2.4.2-3).

Table 2.4.2-3: Temporary Impacts on Potential Jurisdictional Waters in the Biological Study Area

Regulatory Agency	Alternative 2 Impacts (Acres)	Alternative 3 Impacts (Acres)
U.S. Army Corps of Engineers Non-Wetland Waters	1.30	0.00
U.S. Army Corps of Engineers Wetland Waters	0.07	0.00
Regional Water Quality Control Board Non-Wetland Waters	1.30	0.00
Regional Water Quality Control Board Wetland Waters	0.07	0.00
California Department of Fish and Wildlife Jurisdiction Unvegetated Streambed	2.01	0.00
California Department of Fish and Wildlife Jurisdiction Pickleweed Mats	0.07	0.00

Source: (GPA Consulting 2025b)

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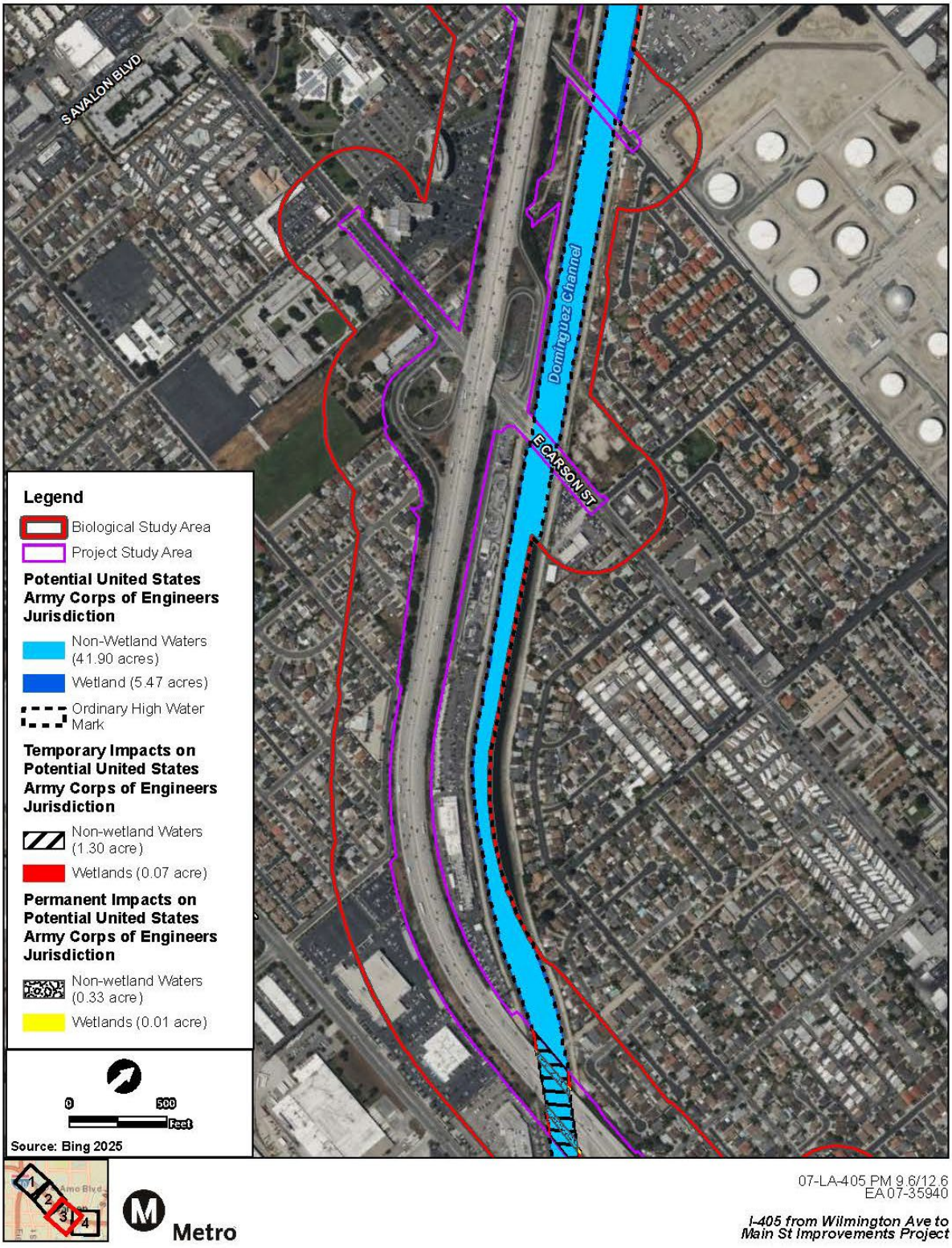

Figure 2.4.2-13: Impacts on Potential United States Army Corps of Engineers Jurisdiction – Alternative 2 (Sheet 1 of 2)

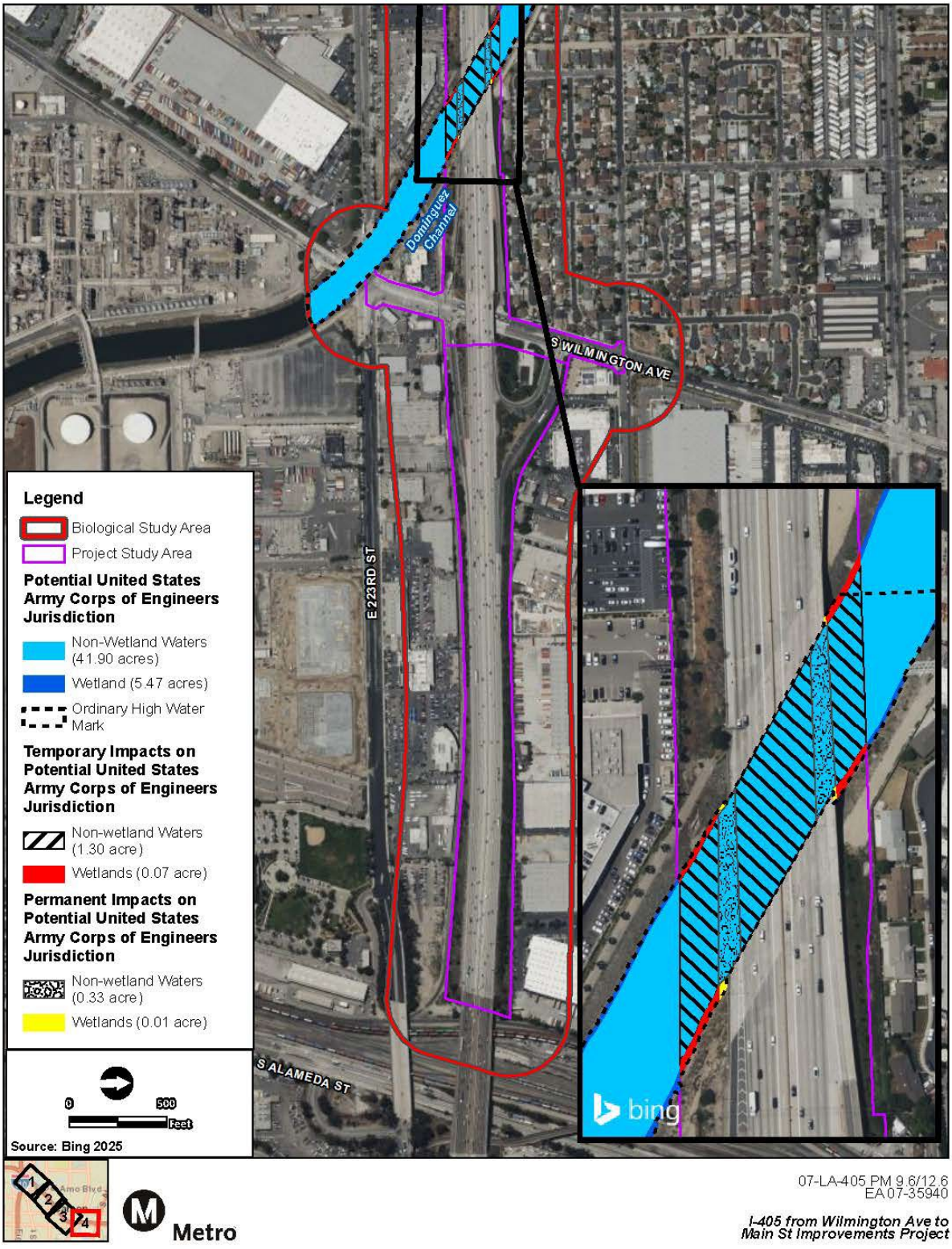

Figure 2.4.2-14: Impacts on Potential United States Army Corps of Engineers Jurisdiction – Alternative 2 (Sheet 2 of 2)

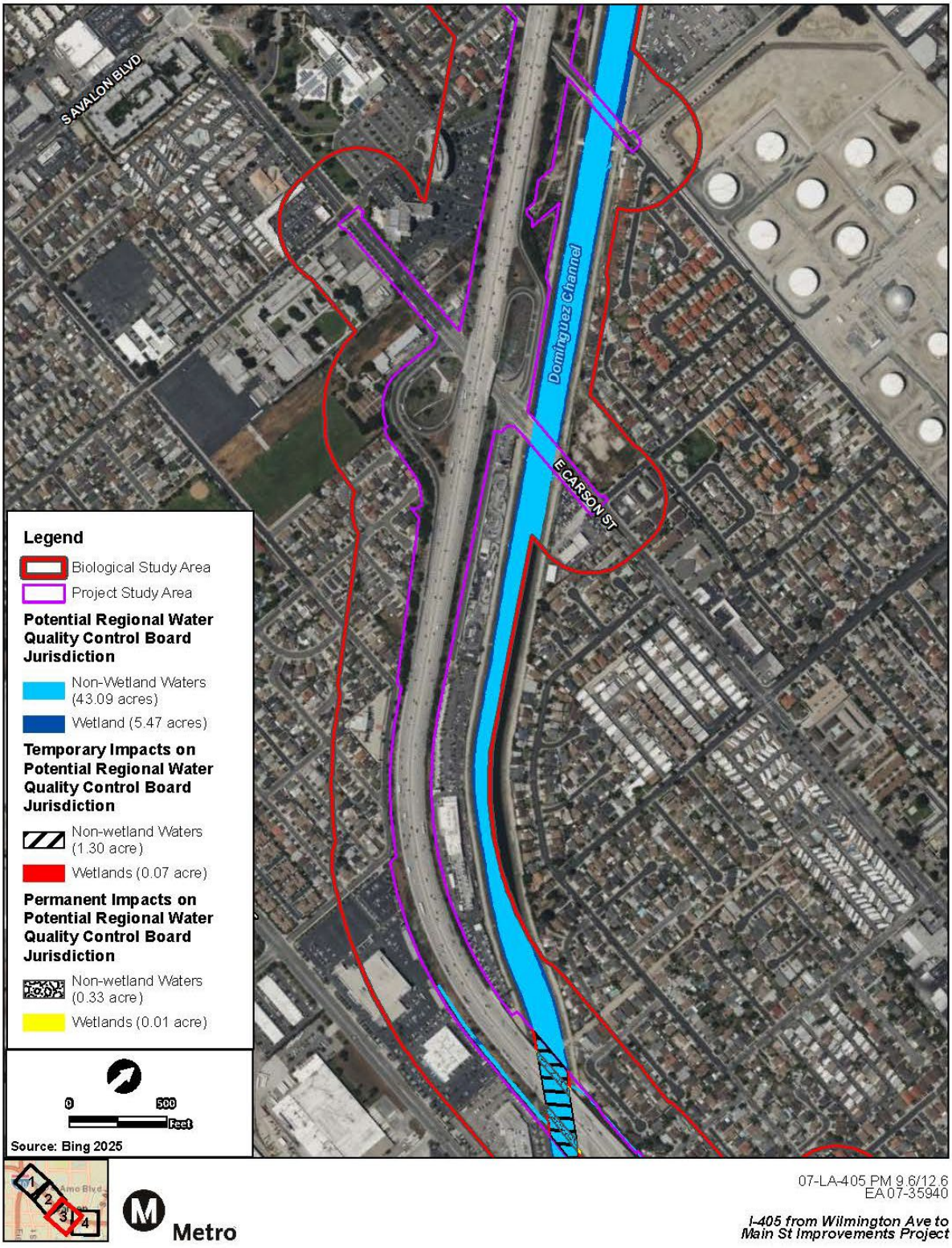

Figure 2.4.2-15: Impacts on Potential Regional Water Quality Control Board Jurisdiction – Alternative 2 (Sheet 1 of 2)

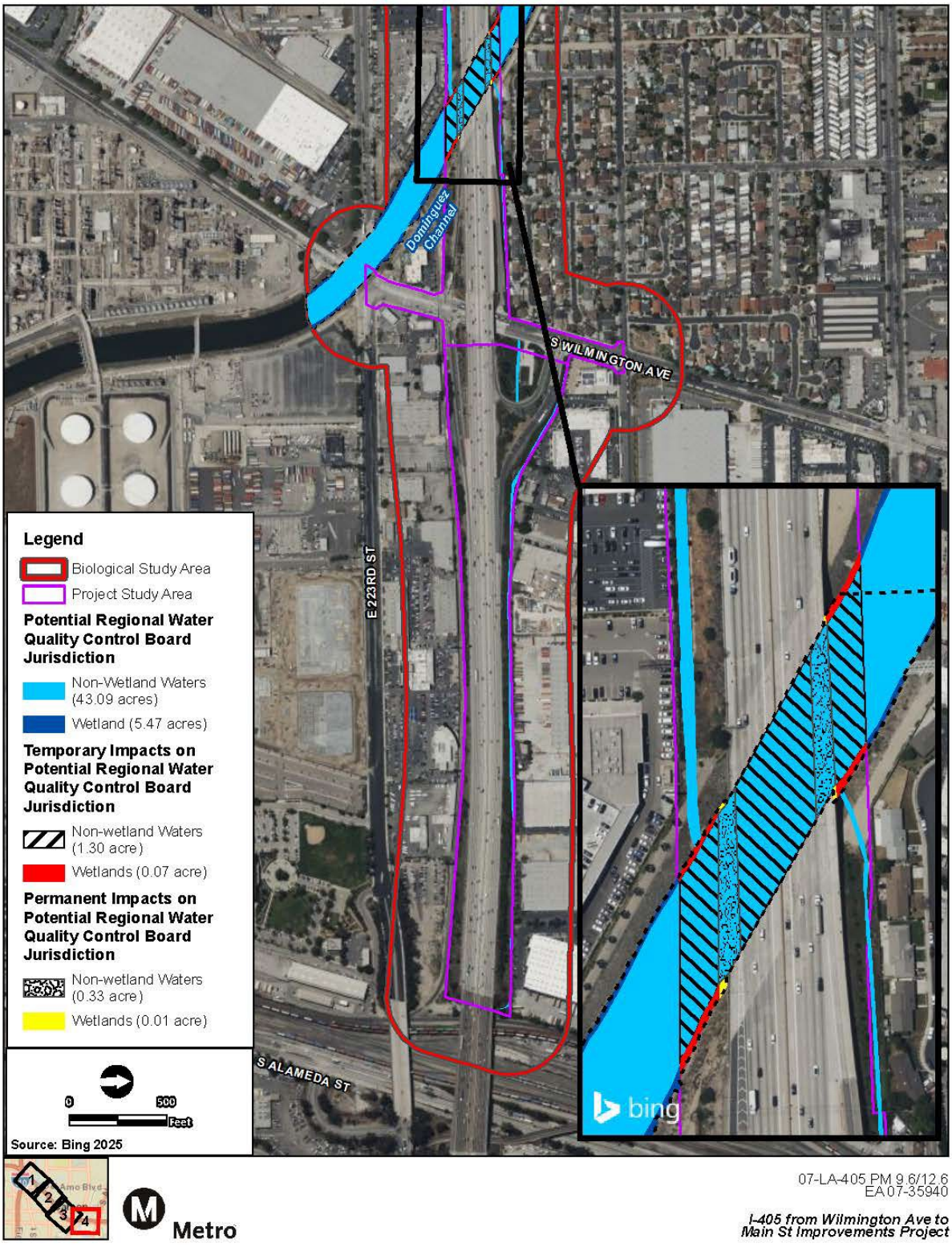

Figure 2.4.2-16: Impacts on Potential Regional Water Quality Control Board Jurisdiction – Alternative 2 (Sheet 2 of 2)

Figure 2.4.2-17: Impacts on Potential California Department of Fish and Wildlife Jurisdiction – Alternative 2 (Sheet 1 of 2)

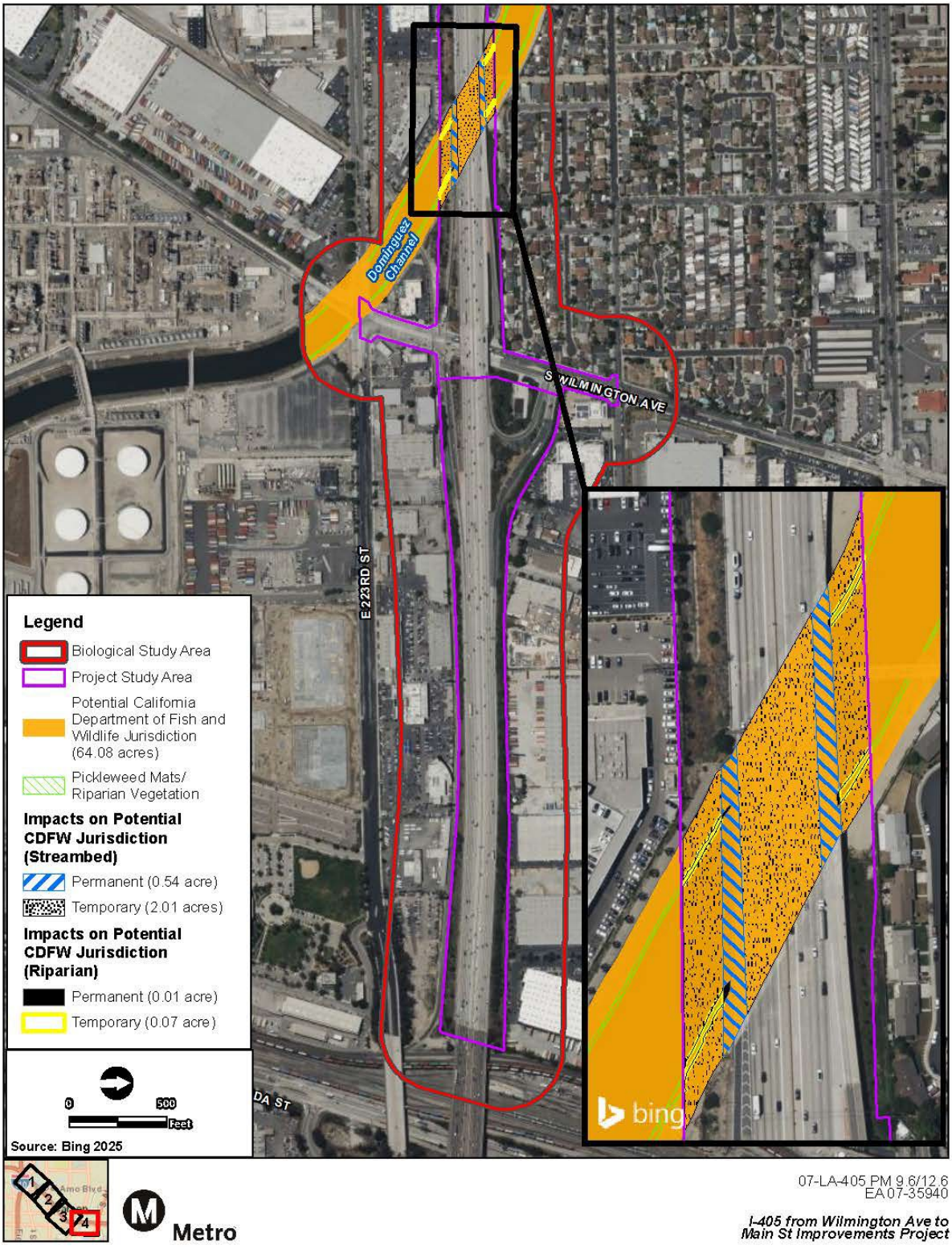

Figure 2.4.2-18: Impacts on Potential California Department of Fish and Wildlife Jurisdiction – Alternative 2 (Sheet 2 of 2)

Temporary indirect effects may occur within the Dominguez Channel, Torrance Lateral Channel, and Del Amo Channel from construction access, grading, and dust generation. The proposed Project would include implementation of **PF-WQ-2** through **PF-WQ-5**, and **PF-WQ-9** to avoid and minimize temporary impacts on wetland and non-wetland waters through construction-phase BMPs, seasonal phasing of soil-disturbing work, and slope stabilization to reduce erosion and sediment discharge during construction.

Measures **NC-1** through **NC-9** would be implemented to further minimize temporary direct and indirect impacts on wetland and non-wetland waters by limiting disturbance, maintaining buffers from jurisdictional features, implementing dust and erosion control BMPs, preventing spills, and restoring all temporary impact areas to pre-Project conditions or better. With implementation of these measures, no short-term direct or indirect adverse temporary impacts on wetlands and non-wetland waters would result from the proposed Project under Alternative 2.

Under Alternative 2, the proposed Project would also result in permanent direct impacts on the Dominguez Channel from the placement of cast-in-drilled-hole (CIDH) piles, bridge abutments, and widening of I-405. Construction of the proposed improvements under Alternative 2 would result in approximately 0.33 acre of permanent direct impacts on non-wetland waters and approximately 0.01 acre of permanent direct impacts on wetland waters of the U.S. under USACE and RWQCB jurisdiction (see Figure 2.4.2-13 through Figure 2.4.2-16 and Table 2.4.2-4). Additionally, the proposed Project under Alternative 2 would result in approximately 0.54 acre of permanent direct impacts on unvegetated streambed and approximately 0.01 acre of permanent direct impacts on Pickleweed Mats/riparian vegetation under CDFW jurisdiction (see Figure 2.4.2-17, Figure 2.4.2-18, and Table 2.4.2-4).

Table 2.4.2-4: Permanent Impacts on Potential Jurisdictional Waters in the Biological Study Area

Regulatory Agency	Alternative 2 Impacts (acres)	Alternative 3 Impacts (acres)
U.S. Army Corps of Engineers Non-Wetland Waters	0.33	0.00
U.S. Army Corps of Engineers Wetland Waters	0.01	0.00
Regional Water Quality Control Board Non-Wetland Waters	0.33	0.00
Regional Water Quality Control Board Wetland Waters	0.01	0.00
California Department of Fish and Wildlife Jurisdiction Unvegetated Streambed	0.54	0.00
California Department of Fish and Wildlife Jurisdiction Pickleweed Mats	0.01	0.00

Source: (GPA Consulting 2025b)

To minimize harm to jurisdictional waters and wetlands, the proposed Project would incorporate water quality Project Features **PF-WQ-1** through **PF-WQ-13** (see Section 1.4, *Project Alternatives*) which would control runoff, reduce erosion and sedimentation, preserve existing vegetation, and would ensure that the proposed Project is in

compliance with the RL 2 monitoring requirements of the CGP. In addition, bridge-specific Project Feature **PF-BR-1**, which would require bank protection (riprap, concrete walls, and sheet piling) to eliminate the possibility of enhanced bank erosion, is proposed to ensure channel bank protection and erosion control at bridge abutments and CIDH pile areas. Measures **NC-1** through **NC-9**, which would minimize work areas, prevent use of pesticides/insecticides, require equipment storage and staging away from sensitive natural communities, implement BMPs, and require restoration of temporary impact areas, and Mitigation Measure **NC-11**, which requires restoration or compensatory mitigation at a minimum 1:1 ratio, described in Section 2.4.1, would be implemented to further minimize and compensate permanent direct impacts on wetland and non-wetland waters. These measures include practices such as designating ESA, implementing erosion-control BMPs, and restricting construction activities near aquatic resources. The Project Features and avoidance and minimization measures are intended to avoid and minimize impacts during construction and ensure compliance with State and federal stormwater regulations throughout both the construction and post-construction phases of the proposed Project. With implementation of all measures listed above, no short-term direct or indirect adverse temporary or permanent impacts on wetlands and other waters would result from the proposed Project under Alternative 2.

Coordination with federal and State resource agencies would be required to obtain the necessary approvals for activities that may affect jurisdictional waters and wetlands. Based on the findings of the NES(MI) and the supporting ARDR, the proposed Project is anticipated to require a CWA Section 404 Nationwide Permit (NWP) (likely NWP 14) from USACE for the discharge of fill material into waters of the U.S.; a CWA Section 401 Water Quality Certification from the RWQCB for work affecting waters of the U.S. and waters of the State; and a CFGC Section 1602 Lake or Streambed Alteration Agreement from CDFW for work that may alter or disturb the bed, bank, or channel of the Dominguez Channel and its tributaries. Findings and conclusions presented herein are preliminary and subject to verification by the respective regulatory agencies during the permitting phase of the proposed Project during the PS&E phase.

Alternative 3 – Transportation Systems Management/Transportation Demand Management)

Under Alternative 3, there would be no temporary or permanent direct impacts on non-wetland or wetland waters under jurisdiction of the USACE, RWQCB, or CDFW (see Table 2.4.2-3 and Table 2.4.2-4). However, the proposed Project under Alternative 3 could result in temporary indirect impacts on the Del Amo Channel from dust generated from construction. However, with implementation of Measure **NC-5**, which includes BMPs to control dust, dirt, and construction debris, adverse impacts on jurisdictional features, including water quality, are not anticipated. With implementation of these measures, no short-term direct or indirect adverse impacts on wetlands and other waters would result from the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no long-term direct or indirect impacts on wetlands or other waters would result from the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Project improvements would be constructed within the existing transportation corridor and would include bridge widening, installation of cast-in-drilled-hole (CIDH) piles, and abutment modifications along the engineered margins of the Dominguez Channel. These features would be placed adjacent to existing piers and abutments within previously disturbed channel banks and would not introduce new channel constrictions, obstructions to flow, or changes to channel morphology. As a result, long-term operation of the proposed Project would not alter hydrologic connectivity, flow conditions, or the stability of wetlands and other waters within the Project Area. Therefore, no long-term direct or indirect adverse impacts on wetlands or other waters would result from operation of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management)

Operational activities under Alternative 3 would be limited to traffic management, signal optimization, and multimodal infrastructure use within existing disturbed areas. Operation of the proposed Project would not alter hydrologic connectivity, flow conditions, or the stability of wetlands and other waters within the Project Area. Therefore, no long-term direct or indirect adverse impacts on wetlands or other waters would result from operation of the proposed Project under Alternative 3.

2.4.2.4 Avoidance, Minimization, and/or Mitigation Measures

Measures **NC-1** through **NC-9** and **NC-11** from Section 2.4.1, *Natural Communities*, are proposed.

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2.4.3 Plant Species

2.4.3.1 Regulatory Setting

The United States Fish and Wildlife Service (USFWS) has regulatory responsibility for the protection of federally listed special-status plant species. “Special status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA).

At the state level, the CDFW has regulatory responsibility for special-status plant species protected by the California Endangered Species Act (CESA).

Please see Section 2.4.5, *Threatened and Endangered Species*, in this document for detailed information about these species.

This section of the document discusses all other special-status plant species, including USFWS candidate species, CDFW species of special concern, and CNPS rare plants.

2.4.3.2 Affected Environment

This section is based on the proposed Project’s NES[MI] (GPA Consulting 2025), which was completed in July 2025. The 550-acre BSA (see Section 2.4.1, *Natural Communities*) spans along I-405 from PM 9.6 to PM 12.6 and extends 300 feet beyond the proposed Project Study Area to account for potential indirect impacts. Survey methodology and BSA parameters are described in further detail in Section 2.4.1, *Natural Communities.*

“Special-status” in this section refers to species that are not formally listed as candidates, threatened, or endangered under FESA/CESA (see Section 2.4.5, *Threatened and Endangered Species*), but are otherwise rare or declining, including:

- CDFW Species of Special Concern or Watch List plants
- CNPS Rank 1B/2B/3 rare and endangered plants
- Locally important taxa identified by the City or Los Angeles County

Biological field surveys for plants and wildlife were conducted in November 2024 and February 2025 to characterize existing conditions and identify sensitive species. Surveys were conducted outside the peak blooming period for some annual and herbaceous species, which was noted as a limitation in the NES(MI).

According to the California Natural Diversity Database (CNDDB), CNPS, and USFWS Information for Planning and Consultation Database searches, 46 special-status plant species have the potential to be in the BSA based on recorded geographical

distribution. Based on the habitat requirements and field survey results, five special status plant species have the potential to be in the BSA, including lucky morning-glory (*Calystegia felix*), southern tarplant (*Centromadia parryi* ssp. *australis*), smooth tarplant (*Centromadia pungens* ssp. *laevis*), vernal barley (*Hordeum intercedens*), and Sanford's arrowhead (*Sagittaria sanfordii*).

Lucky Morning Glory

The lucky morning-glory, CNPS rank 1B.1, is an annual rhizomatous herb found in meadows, seeps, stream banks, and riparian scrub. This species is associated with somewhat poorly drained alkali silt loam substrate and is generally found in floodplains with an average slope of 1 percent. This species is endemic to the inland basins of the Los Angeles, San Gabriel, and Santa Ana River watersheds. The typical blooming period is from March to September, and this species is found at a typical elevation range of 98 to 705 feet. The Dominguez Channel and Torrance Lateral Channel (unvegetated streambed) provide suitable habitat for this species. Therefore, there is potential for this species to be in the BSA.

Southern Tarplant

The southern tarplant, CNPS rank 1B.1, is an annual herb found in vernally wet areas, such as along the edges of marshes and vernal pools, often in association with valley and foothill grasslands where competition from other plants is limited by alkalinity, seasonal soil saturation, or the effects of human disturbance. The typical blooming period is May to November, and this species is found at a typical elevation range of zero to 1,378 feet. The banks of the Dominguez Channel (unvegetated streambed) provide suitable habitat for this species. In addition, according to CNDDB, this species has been recorded within the Dominguez Channel in the BSA in 2009 (occurrence number 85). Therefore, although not observed during the biological surveys, which were conducted during the blooming period for this species, there is potential for this species to be in the BSA.

Smooth Tarplant

The smooth tarplant, CNPS rank 1B.1, is an annual herb found in alkali scrub, alkali playas, and grasslands with alkaline affinities. This species is found in poorly drained flats, depressions, waterway banks and beds, grasslands, and disturbed sites. This species is restricted to clay and alkaline, silty-clay soils. This species is found in Los Angeles, San Bernardino, Riverside, and San Diego Counties. The typical blooming period is April to September, and this species is found at a typical elevation range of zero to 2,099 feet. There are Ruderal Annual Forb Meadow and Grasslands, Ruderal Perennial Forb Meadow and Grasslands, and disturbed sites in the BSA. Therefore, there is potential for this species to be in the BSA.

Vernal Barley

The vernal barley, State rank S3S4 and CNPS rank 3.2, is an annual herb found in alkaline soils near seasonal flows and vernal pool habitats. This species is found in

coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), saline riverbeds, and vernal pools. The typical blooming period is March to June, and this species has a typical elevation range of zero to 3,281 feet. There are Ruderal Annual Forb Meadow and Grasslands and Ruderal Perennial Forb Meadow and Grasslands within the BSA; therefore, there is potential for this species to be in the BSA.

Sanford's Arrowhead

The Sanford's arrowhead, State rank S3 and CNPS rank 1B.2, is a perennial rhizomatous herb found in freshwater marshes and swamps. This species is found in standing or slow-moving freshwater ponds and ditches. The typical blooming period is May to October, and this species has a typical elevation range of zero to 2,133 feet. Sections of the Dominguez Channel, Torrance Lateral Channel, Del Amo Channel, and Channels A through F within the BSA have standing or slow-moving water that could provide suitable streambed habitat for this species. Therefore, there is potential for this species to be in the BSA.

2.4.3.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no short-term direct or indirect impacts on special-status plant species would result from the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Construction activities, such as grading, vegetation removal, and equipment operation, could result in direct and indirect impacts on special-status plant species, should they occur within the BSA. Direct impacts could include trampling or removal of individual plants, while indirect impacts could include dust deposition, soil compaction, or changes to surface hydrology that degrade suitable habitat.

Under Alternative 2, the proposed Project would result in approximately 2.01 acres of temporary direct impacts and 0.54 acre of permanent direct impacts on suitable Del Amo Channel and Torrance Lateral Channel streambank habitat for lucky morning-glory, southern tarplant, and Sanford's arrowhead, and approximately 2.47 acres of temporary direct and 0.19 acre of permanent direct impacts on suitable Ruderal Annual/Perennial Forb Meadow and Grassland habitat for vernal barley and smooth tarplant (see Section 2.4.1, *Natural Communities*, and Figure 2.4.1-9 through Figure 2.4.1-12).

Project design features (PF), including Project Features **PF-WQ-7**, **PF-WQ-9**, **PF-WQ-10**, and **PF-WQ-11** (see Section 1.4, *Project Alternatives*) which would preserve existing vegetation, promote revegetation of disturbed slopes, establish permanent erosion

control, and incorporate vegetation into long-term Design Pollution Prevention measures, would be implemented to minimize impacts on special-status plant species. Measures **PS-1**, which would require a pre-construction rare plant surveys within the Project Study Area during the appropriate blooming period, and **PS-2**, which would require implementation of a relocation plan for special-status plants observed within the Project Study Area, are proposed to further avoid and minimize impacts on special-status plants.

In addition, construction would be conducted in accordance with Measure **NC-5**, described in Section 2.4.1, *Natural Communities*, which requires applying dust-control measures, such as watering active work areas, stabilizing unpaved routes, and covering stockpiles to reduce indirect impacts such as airborne dust and debris on vegetation. With incorporation of these measures, no short-term direct or indirect adverse impacts on special-status plant species would result from the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Alternative 3 would result in no temporary or permanent direct or indirect impacts on suitable streambank habitat within Del Amo Channel and Torrance Lateral Channel for lucky morning-glory, southern tarplant, or Sanford's arrowhead. Alternative 3 would result in approximately 2.47 acres of temporary direct impacts and approximately 0.11 acre of permanent direct impacts on suitable Ruderal Annual/Perennial Forb Meadow and Grassland habitat for vernal barley and smooth tarplant (See Section 2.4.1, *Natural Communities*, and Figure 2.4.1-13 through Figure 2.4.1-16).

To minimize impacts on special-status plant species, Alternative 3 would implement the same avoidance, minimization, and mitigation measures (Measures **PS-1** and **PS-2**) described for Alternative 2 in Section 2.4.3.4 below, including pre-construction surveys and a relocation plan, if applicable.

Construction would also be conducted in accordance with Measure **NC-5**, described in Section 2.4.1, *Natural Communities*, which requires applying dust-control measures, such as watering active work areas, stabilizing unpaved routes, and covering stockpiles to reduce indirect impacts such as airborne dust and debris on vegetation. With incorporation of these measures, no short-term direct or indirect adverse impacts on special-status plant species would result from the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no long-term

direct or indirect impacts on special-status plant species would result from the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

No long-term operational impacts from the proposed Project are anticipated, because the improvements would occur within existing transportation corridors and engineered drainage systems. Operation of the proposed Project would not alter hydrology, vegetation, or other habitat conditions that support special-status plant species.

To avoid, minimize, and mitigate potential effects, the Project would implement Measures **PS-1** (pre-construction rare-plant surveys), **PS-2** (relocation plan if avoidance is not feasible), **NC-7** (dust-control measures), and Project Features **PF-WQ-7**, **PF-WQ-9**, **PF-WQ-10**, and **PF-WQ-11** to preserve vegetation, stabilize slopes, and incorporate long-term erosion control. With incorporation of these measures, no long-term direct or indirect adverse impacts on special-status plant species would result from operation of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

No long-term operational impacts from the proposed Project are anticipated, because the improvements would occur within existing transportation corridors and engineered drainage systems. Operation of the proposed Project would not alter hydrology, vegetation, or other habitat conditions that support special-status plant species.

As with Alternative 2, avoidance, minimization, and mitigation measures would be implemented, including Measures **PS-1**, **PS-2**, **NC-5,** and Project Features **PF-WQ-7**, **PF-WQ-9**, **PF-WQ-10**, and **PF-WQ-11** to ensure dust control, pre-construction surveys, and relocation if necessary. With incorporation of these measures, no long-term direct or indirect adverse impacts on special-status plant species would result from operation of the proposed Project under Alternative 3.

2.4.3.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and mitigation measures are proposed:

Measure PS-1 Prior to construction, the California Department of Transportation's (Caltrans) Resident Engineer or designated contractor, will ensure that a qualified biologist conducts rare plant surveys within the Project Study Area. Surveys would be conducted during the appropriate blooming period for species with potential to be in the Project Study Area.

Measure PS-2 During Construction, Caltrans' Resident Engineer or designated contractor, with the coordination of a qualified biologist, will ensure that if the special-status plants cannot be avoided, or if monitoring determines that the plants are being adversely affected by

construction activities, these activities would be suspended, and a Relocation Plan would be developed by a qualified biologist to relocate the plants to a suitable location and monitor their survival. The Relocation Plan would include, at a minimum, details on the relocation site, the methods for relocation, methods for monitoring, and survival criteria. The relocated plants would be monitored for a period of time sufficient to confirm they have survived the transplanting, as specified in the Relocation Plan. If plant relocation survival is low, supplemental plantings (e.g., container plants and/or hydroseeding) would be implemented to help meet the established success criteria.

Measures **NC-5** and **NC-7** from Section 2.4.1, *Natural Communities*, are also proposed.

2.4.4 Animal Species

2.4.4.1 Regulatory Setting

Federal laws and regulations relevant to wildlife include the following:

- NEPA
- Migratory Bird Treaty Act (MBTA)
- Fish and Wildlife Coordination Act (FWCA)

USFWS and National Oceanic and Atmospheric Administration (NOAA) Fisheries are responsible for implementing these laws.

State laws and regulations relevant to wildlife include the following:

- CEQA
- Sections 1600–1603 of the CFGC
- Sections 4150 and 4152 of the CFGC

CDFW is responsible for implementing these laws.

This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under FESA or CESA. Permits would be obtained in the PS&E phase. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.4.5, *Threatened and Endangered Species*. All other special-status animal species are discussed here, including USFWS or NOAA Fisheries candidate species and CDFW fully protected species and species of special concern.

2.4.4.2 Affected Environment

This section is based on the proposed Project's NES[MI] (GPA Consulting 2025), which was completed in July 2025. The 550-acre BSA (see Section 2.4.1, *Natural Communities*) spans along I-405 from PM 9.6 to PM 12.6 and extends 300 feet beyond the proposed Project Study Area to account for potential indirect impacts. Survey methodology and BSA parameters are described in further detail in Section 2.4.1, *Natural Communities.*

The areas surrounding the Dominguez Channel and vegetation within the nurseries parallel to I-405 could provide local foraging, nesting, and roosting habitat for wildlife within and around the BSA. Wildlife species observed during the biological surveys include common cormorant (*Phalacrocorax carbo)*, killdeer (*Charadrius vociferus*), American coot (*Fulica americana*), Say's phoebe (*Sayornis saya*), song sparrow (*Melospiza melodia*), American kestrel (*Falco sparverius*), California ground squirrel

(*Otospermophilus beecheyi*), California towhee (*Melozone crissalis*), European starling (*Sturnus vulgaris*), cottontail rabbit (*Sylvilagus spp.*), great egret (*Ardea alba*), red-shouldered hawk (*Buteo lineatus*), black-crowned night heron (*Nycticorax nycticorax*), Cassin's kingbird (*Tyrannus vociferans*), mallard (*Anas platyrhynchos*), pie-billed grebe (*Podilymbus podiceps*), lesser yellowlegs (*Tringa flavipes*), snowy egret (*Egretta thula*), black-necked stilt (*Himantopus mexicanus*), rock pigeon (*Columba livia*), western fence lizard (*Sceloporus occidentalis*), monarch butterfly (*Danaus plexippus*), northern mockingbird (*Mimus polyglottos*), belted kingfisher (*Megaceryle alcyon*), and unknown fish species. Potential habitat for bats was observed in several areas throughout the BSA, mainly within bridge structures that provide crevices, expansion joints, and cover suitable for roosting species.

According to the CNDDB, USFWS Information for Planning and Consultation Database, and NOAA Fisheries searches, 54 special-status wildlife species have potential to be in the BSA based on recorded geographical distribution. However, based on the habitat requirements and field survey results, six special status wildlife species have the potential to be in the BSA, including Crotch's bumble bee (*Bombus crotchii),* American bumble bee (*Bombus pensylvanicus),* monarch California overwintering population *(Danaus plexippus plexippus* pop. 1*),* Southern California legless lizard *(Anniella stebbinsi*), burrowing owl (*Athene cunicularia*), and Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*). The Belding's Savannah sparrow is a state endangered species, monarch butterfly is a federally proposed threatened species, and Crotch's bumble bee and burrowing owl are both state candidate endangered species. These species are discussed further in Section 2.4.5, *Threatened and Endangered Species.* Bats are protected under the CFGC as nongame mammals, which prohibits their take or the destruction of active roosts without authorization (CFGC Section 2126).

American Bumble Bee

The American bumble bee (State rank S2) is found in open areas, such as fields, farmlands, temperate grasslands, meadows, deserts, and natural areas within otherwise urban settings. Historically, the species was found throughout much of California; however, it has lost its entire range in California's Central Valley. The current known range for this species is restricted to coastal southern California, with current sightings in Ventura, Los Angeles, Orange, and San Diego Counties. The species is a generalist forager of a wide variety of flowering plants, including those associated with open or disturbed habitats and agricultural crops. They have been found to nest on the surface of the ground among tall grass in grasslands and open farmland but may sometimes nest underground. Little is known of the species' underground nesting sites, but typical bumble bee underground nests have included pre-existing mammal holes and depressions. Little is known of the species' overwintering sites, but bumble bee queens are known to overwinter in soft soil, under leaf litter/debris, or in small cavities just below or on the ground surface. The flight period for queens is from May 1 to September 30, and the flight period for workers and male bees is from June 1 to October 31. There are weedy and disturbed areas along the bike path adjacent to the Dominguez Channel within the BSA. Small mammal burrows were observed between Del Amo Boulevard and northwest of the Torrance Lateral Channel. East of I-405 and west of the

Dominguez Channel could provide suitable nesting habitat. Therefore, the American bumble bee has the potential to be in Ruderal Annual Forb Meadow and Grassland and Ruderal Perennial Forb Grassland and Shrubland vegetation communities within the BSA.

Southern California Legless Lizard

The southern California legless lizard, a State Species of Special Concern, is generally found south of the Transverse Range, extending to northwestern Baja California. This species is found in a variety of habitats in sandy or loose, loamy soils with high moisture content under sparse vegetation. This species is often locally abundant with specimens found in coastal sand dunes and a variety of interior habitats, including sandy washes and alluvial fans. This species is often found in leaf litter under trees and shrubs, in sunny areas, and in dunes stabilized with bush lupine and mock heather. Additionally, this species can be found in suburban gardens. The southern California legless lizard can also be found under surface objects, such as rocks, boards, driftwood, and logs. The adjacent residences located in the BSA can provide suburban garden habitat for this species. Therefore, there is potential for this species to be in the BSA.

Migratory Birds

There is the potential for migratory birds to nest within the trees and vegetation and on bridge structures in the BSA and construction area during construction. In addition, during the biological survey, 18 bird species were observed foraging or flying over the BSA. A complete list of bird species observed in the BSA is included in the NES(MI) (GPA Consulting 2025).

Bats

All bat species in California are protected as nongame mammals under the CFGC, which prohibits their take or the destruction of active roosts. During the biological field surveys, no direct evidence of bat activity, such as guano, staining, urine deposits, vocalizations, or visible bats, was observed on structures or within the surrounding vegetation of the Project Study Area and BSA. However, visual observations conducted during the surveys indicated that some structural features (e.g., expansion joints, gaps between concrete elements) on the existing bridge structures may provide marginal roosting opportunities for common bat species. Therefore, the potential for bats to roost within the Project Study Area cannot be entirely ruled out. Species such as Myotis *spp.*, big brown bat (*Eptesicus fuscus*), and Mexican free-tailed bat (*Tadarida brasiliensis*) are known to roost in bridge structures when suitable habitat is present.

2.4.4.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented; therefore, no short-term

direct or indirect impacts on special-status animal species would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Construction activities, such as grading, excavation, vegetation removal, and operation of heavy equipment, could result in direct and indirect impacts on special-status animal species within the BSA. Direct impacts could include disturbance or temporary displacement of wildlife, while indirect impacts on suitable habitat could result from dust, noise, and vibration during active construction.

American Bumble Bee

Under Alternative 2, the proposed Project would result in approximately 2.47 acres of temporary direct impacts and approximately 0.19 acre of permanent direct impacts on suitable habitat for American bumble bee (see Section 2.4.1, *Natural Communities*; Table 2.4.1-2; and Figure 2.4.1-9 through Figure 2.4.1-12). Indirect impacts from noise and dust could reduce foraging activity near construction zones. Measures **AQ-2** through **AQ-6** and **AQ-12** from Section 2.3.6, *Air Quality*, which would minimize impacts on air quality that could affect foraging American bumble bees would be implemented reduce indirect impacts from dust and airborne particles during construction, which would minimize impacts on air quality that could affect foraging American bumble bees. Project Features **PF-WQ-7, PF-WQ-9, PF-WQ-10**, and **PF-WQ-11** protect and enhance vegetation by promoting revegetation of disturbed areas, establishing long-term erosion control, and preserving existing vegetation to the extent feasible. Project Feature **PF-VIS-1**, which requires the use of native, drought-tolerant plantings, would be implemented to support American bumble bee habitat. Project Features **PF-NOI-1** through **PF-NOI-5**, which would minimize construction noise, would be implemented to minimize noise impacts near American bumble bee foraging areas. The proposed Project would include avoidance and minimization measures (Measures **AS-1** and **NC-1** though **NC-2** from Section 2.4.1, *Natural Communities*), to reduce vegetation removal, prohibit pesticide use, and restore temporarily disturbed areas with native, pollinator-supportive species. With implementation of these measures, no short-term direct or indirect adverse impacts on American bumble bee would result from the proposed Project under Alternative 2.

Southern California Legless Lizard

The southern California legless lizard forages in moist, sandy, or loose-soil habitats with sparse vegetation cover. No suitable microhabitats of this type were observed within the BSA. Residential areas within the BSA, including gardens and landscaped parcels, may provide marginal habitat; however, these areas would not be disturbed by Project activities. Therefore, no short-term direct or indirect adverse impacts on California legless lizard would result from the proposed Project under Alternative 2.

Migratory Birds

Construction activities could affect nesting or foraging migratory birds if active nests are within the bridge structure over the Dominguz Channel or near the Project Study Area. Direct impacts may include the loss of suitable foraging and nesting habitat within the bridge structure or associated vegetation as a result of bridge widening and vegetation removal activities. Indirect impacts could include temporary displacement as a result of noise or vibration. Project Features **PF-BIO-1** and **PF-BIO-2** (see Section 1.4, *Project Alternatives*), which would require qualified biologist to conduct pre-construction nesting bird surveys and establish exclusionary buffers if active nests are found, would be implemented to minimize impacts on nesting migratory birds. Project Features **PF-NOI-1** through **PF-NOI-5**, which would further minimize disturbance by controlling construction noise and vibration near active nests, while Project Features **PF-WQ-11** and **PF-VIS-1**, which would preserve and restore vegetation, maintaining suitable nesting and foraging habitat for migratory birds would minimize impacts on habitat for migratory birds. With the proposed Project Features, the proposed Project would remain in compliance with the MBTA and the CFGC, and no short-term direct or indirect adverse impacts on migratory birds would result from the proposed Project under Alternative 2.

Bats

Although no direct evidence of bats (e.g., guano, staining, visible individuals) was observed during field surveys, certain bridge features (e.g., expansion joints, concrete gaps) could provide marginal roosting habitat for common species, such as *Myotis spp.*, big brown bat, and Mexican free-tailed bat. Potential direct impacts from the proposed Project include the physical alteration or removal of potential roosting habitat during bridge modifications, such as sealing expansion joints or filling concrete gaps, which could result in long-term habitat loss or direct harm to individual bats if roosts are present and not properly identified and avoided. Indirect impacts may arise from construction-related noise, vibration, and artificial lighting during nighttime activities, which could disrupt bat behaviors, such as emergence, foraging, or roost fidelity, particularly during sensitive periods like the maternity season. To minimize these potential impacts, the proposed Project includes avoidance and minimization measures (Measures **AS-2** through **AS-3**). These measures require pre-construction bat habitat assessments, emergence surveys to confirm presence or absence, and directional lighting controls during night work. With implementation of these measures, no short-term direct or indirect adverse impacts on bats would result from the proposed Project under Alternative 2.

<u>Alternative 3 – Transportation Systems Management/Transportation Demand Management</u>

Construction activities, including localized grading, roadway and sidewalk improvements, and upgrades to traffic flow and multimodal infrastructure, could result in temporary indirect impacts on wildlife from dust, noise, vibration, and limited vegetation

removal. No new major ground disturbance would occur; therefore, direct impacts on special-status animal species are not anticipated.

American Bumble Bee

Under Alternative 3, the proposed Project would result in approximately 2.47 acres of temporary direct impacts and 0.11 acre of permanent direct impacts on suitable habitat for American bumble bee (see Section 2.4.1, *Natural Communities*; Table 2.4.1-3; and Figure 2.4.1-13 through Figure 2.4.1-16). Indirect impacts as a result of noise, dust, and vibration could reduce foraging activity near construction areas. To mitigate and/or minimize impacts, Measure **AS-1**, described in Section 2.4.4.4 below, and Measures **NC-1** though **NC-2** from Section 2.4.1, *Natural Communities* are proposed. These measures include reducing vegetation removal, prohibiting pesticide use, and restoring disturbed areas with native, pollinator supportive vegetation. Additionally, Measures **AQ-2** through **AQ-6** and **AQ-12** from Section 2.3.6, *Air Quality*, would minimize dust emissions during construction. Project Features **PF-WQ-9**, **PF-WQ-10**, **PF-WQ-11**, and **PF-VIS-1** would preserve and restore vegetation through slope stabilization, erosion control, and use of native, drought-tolerant plantings compatible with pollinator habitat. With implementation of these measures, no short-term direct or indirect adverse impacts on American bumble bee would result from the proposed Project under Alternative 3.

Southern California Legless Lizard

As stated under Alternative 2, the southern California legless lizard does not have suitable habitat within the BSA. Limited microhabitat occurs within landscaped residential areas outside the disturbance limits. Therefore, no short-term direct or indirect adverse impacts on southern California legless lizards would result from the proposed Project under Alternative 3.

Migratory Birds

Construction could affect nesting or foraging migratory birds if active nests are within or near the Project Study Area. Direct impacts could include vegetation trimming or disturbance of nesting individuals, while indirect impacts could include temporary displacement caused by equipment noise or vibration. Project Features **PF-BIO-1** and **PF-BIO-2** from Section 1.4, *Project Alternatives*, would minimize impacts on nesting migratory birds by requiring a qualified biologist to conduct pre-construction nesting bird surveys and establish exclusionary buffers if active nests are found. Project Features **PF-NOI-1** through **PF-NOI-5** would further minimize disturbance by controlling construction noise and vibration near active nests, while Project Features **PF-WQ-11** and **PF-VIS-1** would preserve and restore vegetation, maintaining suitable nesting and foraging habitat for migratory birds. With the proposed Project Features, the proposed Project would remain in compliance with the MBTA and CFGC, and no short-term direct or indirect adverse impacts on migratory birds would result from the proposed Project under Alternative 3.

Bats

Construction of Alternative 3 would not include modifications of structures that could support bat roosting; therefore, direct impacts on roosting habitat are not expected. However, if nighttime work or lighting installation is required under Alternative 3, Measures **AS-2** and **AS-3** are proposed. These measures require pre-construction bat habitat assessments and emergence surveys and ensuring that lighting is directed away from vegetated or open areas. With implementation of these measures, no short-term direct or indirect adverse impacts on bats would result from the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented; therefore, no long-term direct or indirect impacts on special-status animal species would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

American Bumble Bee

Operation of Alternative 2 would occur within the existing transportation corridor and would not introduce new sources of habitat disturbance beyond those addressed during construction impacts. Long-term roadway operation and routine vegetation maintenance would not substantially alter the availability or function of suitable foraging or nesting habitat for American bumble bee. With implementation of Measure **AS-1**, described in Section 2.4.4.4 below and Measures **NC-1** though **NC-2** from Section 2.4.1, *Natural Communities*, along with Project Features that promote revegetation and vegetation stability (**PF-WQ-7**, **PF-WQ-9**, **PF-WQ-10**, **PF-WQ-11**, and **PF-VIS-1**), no long-term direct or indirect adverse impacts on American bumble bee would result from operation of the proposed Project under Alternative 2.

Southern California Legless Lizard

Operational activities under Alternative 2 would not result in ground disturbance or changes to substrate conditions within the BSA. No suitable habitat would be affected, and maintenance activities would remain confined to developed right-of-way areas. Therefore, no long-term direct or indirect adverse impacts on southern California legless lizard would result from operation of the proposed Project under Alternative 2.

Migratory Birds

Operation of Alternative 2 would not remove vegetation, modify bridge structures, or introduce conditions that would reduce nesting or foraging opportunities beyond those addressed during construction impacts. Routine roadway use and maintenance would not interfere with migratory bird movement or nesting behavior. With compliance with

the MBTA and CFGC, no long-term direct or indirect adverse impacts on migratory birds would result from operation of the proposed Project under Alternative 2.

Bats

Operation of Alternative 2 would not involve further modification of bridge structures or lighting that would affect potential bat roosting habitat beyond those addressed during construction impacts. Therefore, no long-term direct or indirect adverse impacts on bats would result from operation of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

American Bumble Bee

Operation of Alternative 3 would be limited to traffic management and multimodal improvements within existing developed areas. These activities would not result in long-term habitat modification or disruption of foraging or nesting habitat for American bumble bee. With implementation of Project Features that promote revegetation and vegetation stability (**PF-WQ-7**, **PF-WQ-9**, **PF-WQ-10**, **PF-WQ-11**, and **PF-VIS-1**), no long-term direct or indirect adverse impacts on American bumble bee would result from operation of the proposed Project under Alternative 3.

Southern California Legless Lizard

Alternative 3 would not involve ongoing activities that disturb soil or vegetation within potential habitat areas. Operational conditions would remain similar to existing conditions; therefore, no long-term direct or indirect adverse impacts on southern California legless lizard would result from operation of the proposed Project under Alternative 3.

Migratory Birds

Operation of Alternative 3 would not result in new barriers to movement or long-term disturbance of nesting or foraging habitat beyond those addressed during construction impacts. Routine traffic operations and TSM/TDM elements would not alter habitat conditions. With compliance with the MBTA and CFGC, no long-term direct or indirect adverse impacts on migratory birds would result from operation of the proposed Project under Alternative 3.

Bats

Operational activities under Alternative 3 would not include long-term lighting or structural changes that could disturb bat roosting or foraging behavior beyond those addressed during construction impacts. Therefore, no long-term direct or indirect adverse impacts on bats would result from operation of the proposed Project under Alternative 3.

2.4.4.4 Avoidance, Minimization, and/or Mitigation Measures

To mitigate potential impacts on American Bumble bee, the following measure is proposed:

Measure AS-1 During and after construction, Caltrans' Resident Engineer or designated contractor will ensure that areas temporarily disturbed during construction would be restored using native species, where feasible and appropriate, as determined by a qualified biologist in coordination with the landscape architect and agency-approved restoration or landscaping plans. To support pollinator habitat, restoration areas will include at least two native flowering species, such as coffeeberry (*Frangula californica*) and toyon (*Heteromeles arbutifolia*), which are included in the current landscaping concept, if suitable for site conditions.

To avoid and/or minimize impacts on bat species, the following measures are proposed:

Measure AS-2 Prior to the start of construction during the active season (typically March through August), Caltrans' Resident Engineer or designated contractor will ensure that a qualified biologist conducts a daytime bat habitat assessment of trees and structures within 100 feet of the Project Study Area. If potential roosting habitat is identified, evening emergence surveys will be conducted to determine presence or absence of bats. Based on the results, additional avoidance or minimization measures may be implemented, as needed.

Measure AS-3 During and prior to construction, Caltrans' Resident Engineer or designated contractor will ensure that a buffer will be established if a maternal colony is discovered, and work within the buffer area will be postponed until the colony has dispersed, or as directed by a qualified biologist.

Measure AS-4 During construction, Caltrans' Resident Engineer or designated contractor will ensure that night work will be avoided to the extent feasible. If required, construction lighting will be directed downward and away from vegetated or open areas to minimize disturbance.

Measures **NC-1** though **NC-2** from Section 2.4.1, *Natural Communities*, and Measures **AQ-2** through **AQ-6** and **AQ-12** from Section 2.3.6, *Air Quality*, are also proposed.

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2.4.5 Threatened and Endangered Species

2.4.5.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the FESA. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies are required to consult with the USFWS and the NOAA Fisheries to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species.

California has enacted a similar law at the state level, the CESA, CFGC Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States.

2.4.5.2 Affected Environment

This section is based on the proposed Project's NES[MI] (GPA Consulting 2025), which was completed in July 2025. The 550-acre BSA (see Section 2.4.1, *Natural Communities*) spans along I-405 from PM 9.6 to PM 12.6 and extends 300 feet beyond the proposed Project Study Area to account for potential indirect impacts. Survey methodology and BSA parameters are described in further detail in Section 2.4.1, *Natural Communities.*

According to the CNDDB, USFWS Information for Planning and Consultation Database, and NOAA Fisheries searches, 47 federally or state-listed endangered, threatened, or candidate species have the potential to be in the BSA based on recorded geographical distribution. However, based on the habitat requirements and field survey results, four federally or state threatened or endangered wildlife species have the potential to be in the BSA, including the monarch butterly California overwintering population *(Danaus plexippus plexippus* pop. 1*),* Crotch's bumble bee (*Bombus crotchii),* burrowing owl (*Athene cunicularia*), and Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*). The Belding's Savannah sparrow is a state endangered species, monarch butterfly is a federally proposed threatened species, and Crotch's bumble bee and burrowing owl are both state candidate endangered species. No designated or proposed critical habitat or Essential Fish Habitat for any federally or state-listed species occurs within the BSA.

Monarch – California Overwintering Population

The monarch butterfly is currently a federal proposed threatened species under FESA. The monarch butterfly requires closed-cone coniferous forests for breeding and milkweed (*Asclepias* sp.) as a food source for larvae. This species roosts in eucalyptus, Monterey pines, and Monterey cypresses groves in California. Nectar and nearby water sources are required. Monarch butterflies migrate each year to congregate at a few forested overwintering sites in the mountains of central Mexico and coastal California. Overwintering populations are in areas of moderate temperatures to avoid freezing (USFWS 2024). There are eucalyptus trees northwest of Alameda Street that could provide suitable roosting habitat. Although there are eucalyptus trees within the BSA, there are no previously recorded overwintering populations within the BSA. The closest known overwintering population is at Hopkins Wilderness Park in Torrance. There is no critical habitat for monarch butterfly in the BSA; the closest critical habitat is in Ventura County. A monarch butterfly was observed flying through the BSA during the reconnaissance surveys; however, milkweed, a required food source for larvae, was not observed within the BSA. Therefore, there is potential for this species to forage but not breed or overwinter in the BSA.

Crotch's Bumble Bee

The Crotch's bumble bee is found in open grassland and scrub habitats. The species is found primarily in California, with the current known range extending southward from Redding to the Mexican border, including the coasts and central valley east of the Sierra Nevada. The species is a generalist forager of flowering plants and known to have a strong association with some weedy and/or disturbance associated plants. Plant families most commonly visited include *Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, Hydrophyllacae, Asclepiadaceae,* and *Boraginaceae*. Nesting sites are typically underground and may be reliant on sufficient rodent and/or other animal burrows. Little is known of the species' overwintering sites, but bumble bee queens are known to overwinter in soft soil, under leaf litter/debris, or in small cavities just below or on the ground surface. The typical flight period for queens is February 15 to October 31 and for workers/males it is March 1 to September 1. There are weedy and disturbed areas along the bike path adjacent to the Dominguez Channel within the BSA. Small mammal burrows were observed between Del Amo Boulevard and northwest of the Torrance Lateral Channel. East of I-405 and west of the Dominguez Channel could provide suitable nesting habitat. Therefore, there is potential foraging and nesting habitat for this species in the BSA.

Burrowing Owl

The burrowing owl is found in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. This species is a subterranean nester and is dependent upon burrowing mammals, most notably the California ground squirrel. This species is also common in disturbed areas, including roadsides, and may develop burrows in debris piles. This species is an opportunistic feeder that preys upon insects, scorpions, small mammals, birds, amphibians, and reptiles. There is an open lot

adjacent to Main Street and west of Del Amo Boulevard with low-growing vegetation in the BSA that could provide suitable habitat for the burrowing owl. Therefore, there is potential for this species to forage and nest in the BSA.

Belding's Savannah Sparrow

The Belding's Savannah sparrow is endemic to the upper littoral region of salt marshes and is associated with dense pickleweed, particularly *Salicornia virginica*, which is where most nests are found. Pickleweed Mats were observed at the toe of the Dominguez Channel along with other halophytes, such as saltgrass, alkali heath, marsh jaumea, and California sea lavender (*Limonium californicum*), which may provide suitable foraging habitat for this species. However, these Pickleweed Mats are thin and not dense enough to support nesting and do not provide sufficient cover from predators. In addition, the area is subject to inundation from the Dominguez Channel and is located within a highly urbanized and disturbed setting. Therefore, while foraging habitat is present, nesting is unlikely within the BSA.

2.4.5.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no short-term direct or indirect impacts on threatened and endangered species would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Monarch – California Overwintering Population and Crotch's Bumble Bee

Staging, vehicle movement, and grading could result in direct impacts on monarch butterfly – California overwintering population and Crotch's bumble bee, if construction activities were to be conducted while individuals are within or adjacent to the construction areas at the Dominguez Channel, the Torrance Lateral Channel, and Del Amo Boulevard. Indirect impacts include noise from operating machinery and dust, which could disrupt foraging. Crotch's bumble bees have the potential to be within Ruderal Annual Forb Meadow and Grassland and Ruderal Perennial Forb Grassland and Shrubland vegetation communities.

Alternative 2 would result in approximately 1.86 acres of temporary direct impacts and approximately 0.07 acre of permanent direct impacts on suitable foraging habitat for monarch butterfly and approximately 2.47 acres of temporary direct impacts and approximately 0.19 acre of permanent direct impacts on suitable habitat for Crotch's bumble bee (see Section 2.4.1, *Natural Communities*; Figure 2.4.1-9 through Figure 2.4.1-12; and Table 2.4.1-2). To minimize direct impacts, the proposed Project includes Measure **TE-1**, which would require pre-construction surveys for Monarch butterflies, Measure **TE-2**, which would require a 100-foot buffer around any monarch

butterflies found in the BSA, Measure **TE-3**, which requires preparation and implementation of a Workers Environmental Awareness Training, Measure **TE-4**, which requires a pre-construction survey for Crotch's bumble bee, Measure **TE-5**, which requires a 50-foot buffer if a Crotch's bumble bee nest is observed, and **TE-6**, which requires temporarily pausing work if a Crotch's bumble bee is observed away from a nest, would be implemented to avoid impacts on threatened and endangered species. In addition, Measures **NC-1** through **NC-3** and **NC-9** found in Section 2.4.1, *Natural Communities*, which would minimize work areas and require restoration of temporarily disturbed areas, Measure **AS-1**, which would require areas temporarily disturbed during construction to be restored using native species, and Measures **AQ-2** through **AQ-6** and **AQ-12** from Section 2.3.6, *Air Quality*, which reduce vegetation removal, prohibit pesticide use, and restore temporarily disturbed areas with native and pollinator-supportive species would be implemented to further avoid impacts on threatened and endangered species.

Although limited ruderal and landscaped vegetation will be disturbed, these areas do not contain milkweed or other essential habitat features necessary for breeding or overwintering monarch butterflies, and no eucalyptus trees suitable for roosting would be removed. In addition, there are no previously recorded overwintering populations within the BSA; the closest known overwintering population is at Hopkins Wilderness Park in Torrance. With the proposed avoidance and minimization measures, the proposed Project would have no effect on the federally proposed threatened monarch butterfly, and consultation with USFWS is not required under Alternative 2. Therefore, no short-term direct or indirect adverse impacts on monarch butterfly would result from the proposed Project under Alternative 2.

With implementation of the proposed mitigation and avoidance measures, take of the state candidate endangered Crotch's bumble bee is not expected, and an incidental take permit from CDFW is not anticipated under Alternative 2. Permits would be obtained in the PS&E phase. Therefore, no short-term direct or indirect adverse impacts on Crotch's bumble bee would result from the proposed Project under Alternative 2.

Burrowing owl and Belding's Savannah sparrow

Construction activities would include grading, excavation, vegetation removal, and vehicle movement, which could result in direct and indirect impacts on the burrowing owl and Belding's Savannah sparrow, should they be in the BSA. Direct impacts on burrowing owl may include the trampling nests, which could result in mortality and/or nest destruction. Nesting by Belding's Savannah sparrow is unlikely within the BSA due to the current levels of noise, vibration, and human activity in the existing environment; however, if a nest were to occur, trampling or disturbance could also result in mortality and/or nest destruction. Indirect impacts could include increased noise, vibration, and human activity during construction activities, which could result in disturbance, disruption of foraging, and/or nest abandonment.

Alternative 2 would result in approximately 2.46 acres of temporary direct impacts and approximately 0.20 acre of permanent direct impacts on suitable habitat for burrowing

owl and approximately 0.07 acre of temporary direct impacts and approximately 0.01 acre of permanent direct impacts on suitable foraging habitat for Belding's Savannah sparrow (see Section 2.4.1, *Natural Communities*; Figure 2.4.1-9 through Figure 2.4.1-12; and Table 2.4.1-2). To minimize direct impacts, the proposed Project would include Measures **TE-7**, which would require a pre-construction burrowing owl survey, and through **TE-8**, which would require establishment of a buffer if burrowing owls are observed within 500 feet of the Project Study Area. In addition, Project Features **PF-BIO-1** and **PF-BIO-2** from Section 1.4, *Project Alternatives*, which include pre-construction nesting bird surveys, establishment of exclusion buffers, and use of qualified biologists during vegetation removal and bridge work would avoid direct Project impacts on burrowing owl and Belding's Savannah sparrow. Project Features **PF-NOI-1** through **PF-NOI-5** would further minimize disturbance by controlling construction noise and vibration near active nests, while Project Features **PF-WQ-11**, and **PF-VIS-1** would preserve and restore vegetation. These features would maintain suitable nesting and foraging habitat for burrowing owl and Belding's Savannah sparrow.

With the implementation of proposed measures, no short-term direct or indirect adverse impacts on burrowing owl or Belding's Savannah sparrow, and take under CESA, would result from the proposed Project under Alternative 2.

<u>Alternative 3 – Transportation Systems Management/Transportation Demand Management</u>

Monarch – California Overwintering Population and Crotch's Bumble Bee

Alternative 3 would result in approximately 1.83 acres of temporary direct impacts and approximately 0.04 acre of permanent direct impacts on suitable foraging habitat for monarch butterfly and approximately 2.47 acres of temporary direct impacts and approximately 0.11 acre of permanent direct impacts on suitable habitat for Crotch's bumble bee (see Section 2.4.1, *Natural Communities*; Figure 2.4.1-13 through Figure 2.4.1-16; and Table 2.4.1-3).

The same avoidance and minimization measures described for Alternative 2 (i.e., Measures **TE-1** through **TE-6**, **AS-1**, **NC-1** through **NC-3, NC-9**, **AQ-2** through **AQ-6**, and **AQ-12**) are proposed under Alternative 3. Because Alternative 3 involves a slightly smaller construction footprint and applies identical environmental protection measures, the proposed Project is expected to have no effect on the federally candidate monarch butterfly and no adverse effect or take of Crotch's bumble bee under Alternative 3. Therefore, no short-term direct or adverse impacts on Crotch's bumble bee would result from the proposed Project under Alternative 3.

Burrowing Owl and Belding's Savannah Sparrow

Alternative 3 would result in approximately 2.46 acres of temporary direct impacts and approximately 0.20 acre of permanent direct impacts on suitable habitat for burrowing owl and no temporary or permanent direct impacts on suitable foraging habitat for

Belding's Savannah sparrow (see Section 2.4.1, *Natural Communities*; Figure 2.4.1-13 through Figure 2.4.1-16; and Table 2.4.1-3).

The same avoidance and minimization measures (Measures **TE-7** through **TE-8**), and Project Features **PF-BIO-1** through **PF-BIO-2**, **PF-NOI-1** through **PF-NOI-5**, **PF-WQ-11**, and **PF-VIS-1** described for Alternative 2 would are proposed under Alternative 3. With implementation of the avoidance and minimization measures, no short-term direct or indirect adverse impacts on burrowing owl and Belding's Savannah sparrow, and take under CESA, would result from the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no long-term direct or indirect impacts on threatened and endangered species would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Monarch – California Overwintering Population and Crotch's Bumble Bee

Operational activities under Alternative 2 would occur within the existing transportation corridor and would not involve additional vegetation removal, ground disturbance, or pesticide use beyond typical roadway operation and maintenance. Operation of the proposed Project would not alter hydrology, vegetation composition, or habitat conditions that support monarch butterfly foraging or potential overwintering, nor would it modify foraging or nesting habitat conditions for Crotch's bumble bee beyond those addressed during construction impacts. As a result, no long-term direct or indirect adverse impacts on the monarch butterfly California overwintering population or Crotch's bumble bee would result from operation of the proposed Project under Alternative 2.

Burrowing Owl and Belding's Savannah Sparrow

Operational activities under Alternative 2 would not involve grading, excavation, vegetation removal, or other ground-disturbing activities that could affect burrowing owl habitat. Operation of the proposed Project would also not alter pickleweed mats vegetation that provides limited foraging habitat for the Belding's Savannah sparrow. Hydrologic conditions, vegetation structure, and habitat connectivity would remain consistent with post-construction conditions. Therefore, no long-term direct or indirect adverse impacts on burrowing owl or Belding's Savannah sparrow would result from operation of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Monarch – California Overwintering Population and Crotch's Bumble Bee

Operational activities under Alternative 3 would be limited to traffic management, signal optimization, and multimodal infrastructure use within existing disturbed areas. Operation of the proposed Project would not introduce new sources of habitat disturbance, vegetation removal, or pesticide application beyond standard maintenance activities. As a result, operation under Alternative 3 would not affect forage availability, nesting conditions, or overwintering habitat for the monarch butterfly or Crotch's bumble bee. No long-term direct or indirect adverse impacts on monarch butterfly or Crotch's bumble bee would result from operation of the proposed Project under Alternative 3.

Burrowing Owl and Belding's Savannah Sparrow

Operation of Alternative 3 would not involve activities that disturb soil, remove vegetation, or modify habitat features that could support burrowing owl or Belding's Savannah sparrow. No changes to hydrology, pickleweed mats, or adjacent vegetation communities would occur during operation. Therefore, no long-term direct or indirect adverse impacts on burrowing owl or Belding's Savannah sparrow would result from operation of the proposed Project under Alternative 3.

2.4.5.4 Avoidance, Minimization, and/or Mitigation Measures

To avoid and/or minimize potential impacts on the monarch butterfly – California overwintering population and Crotch's bumble bee, the following measures are proposed:

Measure TE-1 Prior to construction, the California Department of Transportation's (Caltrans) Resident Engineer or designated contractor will ensure that a qualified biologist surveys all suitable refuge sites for monarch butterflies (typically eucalyptus trees) within 48 hours of construction and within 100 feet from where tree removal and tree trimming or excavation would be conducted.

Measure TE-2 During construction, Caltrans' Resident Engineer or designated contractor, in coordination with a qualified biologist, will ensure that if monarch butterflies are found roosting in the BSA, measures would be implemented to avoid impacts on the monarch butterfly, including but not limited to, installation and maintenance of a 100-foot buffer around the roost sites. Construction activities would not be allowed within the buffer area until a qualified biologist confirms that the monarch butterflies have left the area.

Measure TE-3 Prior to construction, Caltrans' Resident Engineer or designated contractor will ensure that a Workers Environmental Awareness Training for federal and state-listed species with potential to be in

the Project Study Area would be given to all personnel working on site. The training would include the ecology of the species, the sensitivity of the species to anthropogenic activities, legal protection afforded to the species, penalties for violations of federal and state laws, reporting requirements, and project features designed to reduce impacts on the species. The training would be conducted by a qualified biologist who is knowledgeable in the biology of the federal and state-listed species with potential to be in the Project Study Area.

Measure TE-4 During construction, Caltrans' Resident Engineer or designated contractor will ensure that, if feasible, initial ground disturbance and vegetation removal would be conducted September 2 through February 28, which is outside the typical Crotch's bumble bee colony flight period (March 1 through September 1). If initial ground disturbance and/or vegetation removal would be conducted during the typical Crotch's flight period, a qualified biologist would conduct protocol bumble bee surveys in compliance with the methodologies developed by the California Bumble Bee Atlas and in consideration of the methodologies described in the June 2023 Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species to identify Crotch's bumble bee nests or foraging individuals. Up to three surveys would be conducted, spaced one to four weeks apart, during the colony flight period. If a Crotch's bumble bee or nest is identified during survey efforts, CDFW must be notified to discuss how to avoid take. If take cannot be avoided, CESA consultation would be required prior to project initiation.

Measure TE-5 During construction, Caltrans' Resident Engineer or designated contractor will ensure that if a Crotch's bumble bee nest is observed, work would temporarily pause in the immediate vicinity of the nest. A minimum 50-foot avoidance buffer (or suitable distance determined by the qualified biologist) would be established using orange flagging/fencing or similar. This buffer would be installed and maintained throughout the duration of construction or until nesting activity has ended, as determined in coordination with the qualified biologist and regulatory agencies, as appropriate. CDFW would be notified upon discovery of the nest.

Measure TE-6 During construction, Caltrans' Resident Engineer or designated contractor will ensure that if Crotch's bumble bee is observed away from a nest, work would temporarily pause in the immediate vicinity until the animal has left the work area of its own volition. CDFW would be notified for additional guidance.

To avoid and/or minimize impacts on the burrowing owl and Belding's Savannah sparrow, the following measures are proposed:

Measure TE-7 Prior to construction, Caltrans' Resident Engineer or designated contractor will ensure that a pre-construction take avoidance survey for burrowing owl would be conducted by a qualified biologist. The survey efforts would include a single site visit conducted no more than 14 days prior to ground or vegetation disturbing activities and would include a thorough examination of all suitable habitat within the Project Study Area and vicinity for burrowing owl or its sign. The survey would be conducted using the methodologies consistent with CDFW's March 7, 2012, Staff Report on Burrowing Owl Mitigation or the most current CDFW survey guidance publication at the time of the survey initiation.

Measure TE-8 During construction, Caltrans' Resident Engineer or designated contractor will ensure that if occupied burrows or signs of occupied burrowing owl habitat (including debris piles) are observed within 500 feet of the Project Study Area, a 165-foot buffer would be installed and maintained during the non-breeding season (typically October 1 to January 31). The buffer size may be modified, under direction of a qualified biologist, and CDFW if appropriate, if it is determined that construction activities would not likely have adverse effects on the owls. Work within the buffer area would only resume once a qualified biologist confirms that the burrow is no longer occupied or that CDFW provides authorization to proceed.

Measures **NC-1** though **NC-3** and **NC-9** from Section 2.4.1, *Natural Communities*, Measure **AS-1** from Section 2.4.4, *Animal Species*, and Measures **AQ-2** through **AQ-6** and **AQ-12** from Section 2.3.6, *Air Quality*, are also proposed.

2.4.5.5 Determinations

Based on the analysis provided in the NES(MI), the proposed Project is expected to have no effect on federally listed species. Table 2.4.5-1 summarizes the listed and proposed species and/or designated critical habitats that were identified on the federal species list and displays determinations of effect for each species. With the proposed avoidance and minimization measures, the Project would have no effect on any federally listed species, and consultation with USFWS is not required.

Table 2.4.5-1: Effect Findings Under Federal Endangered Species Act

Scientific Name	Common Name	Federal Status	Critical Habitat	Determination
Plants				
Astragalus pycnostachyus var. *lanosissimus*	Ventura marsh milk-vetch	Endangered	Absent	No effect

Scientific Name	Common Name	Federal Status	Critical Habitat	Determination
Astragalus tener var. *titi*	coastal dunes milk-vetch	Endangered	Absent	No effect
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	Endangered	Absent	No effect
Eryngium aristulatum var. *parishii*	San Diego button-celery	Endangered	Absent	No effect
Nasturtium gambelii	Gambel's water cress	Endangered	Absent	No effect
Navarretia fossalis	spreading navarretia	Threatened	Absent	No effect
Orcuttia calfiornica	California orcutt grass	Endangered	Absent	No effect
Pentachaeta lyonia	Lyon's pentachaeta	Endangered	Absent	No effect
Invertebrates				
Danaus plexippus plexippus pop. 1	Monarch Butterfly – California overwintering population	Candidate Endangered	Absent	No effect
Haliotis cracherodii	black abalone	Endangered	Absent	No effect
Haliotis sorenseni	white abalone	Endangered	Absent	No effect
Crustaceans				
Streptocephalus woottoni	Riverside fairy shrimp	Endangered	Absent	No effect
Fish				
Acipenser medirostris pop. 1	green sturgeon southern Distinct Population Segment	Threatened	Absent	No effect
Oncorhyncus mykiss irideus pop. 10	steelhead – southern California Distinct population segment	Endangered	Absent	No effect
Amphibians				
Spea hammondii	western spadefoot toad	Proposed Threatened	Absent	No effect
Reptiles				
Actinemys pallida	southwestern pond turtle	Proposed Threatened	Absent	No effect
Dermochelys coriacea	leatherback sea turtle	Endangered	Absent	No effect
Caretta Caretta	north Pacific loggerhead sea	Endangered	Absent	No effect

Scientific Name	Common Name	Federal Status	Critical Habitat	Determination
	turtle			
Chelonia mydas	green sea turtle	Proposed Threatened	Absent	No effect
Lepidochelys olivacea	olive ridley sea turtle	Threatened	Absent	No effect
Birds				
Charadrius nivosus nivosus	western snowy plover	Threatened	Absent	No effect
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Threatened	Absent	No effect
Empidonax traillii extimus	southwestern willow flycatcher	Endangered	Absent	No effect
Polioptila californica californica	coastal California gnatcatcher	Threatened	Absent	No effect
Rallus obsoletus levipes	light-footed Ridgway's rail	Endangered	Absent	No effect
Sternula antillarum browni	California least tern	Endangered	Absent	No effect
Vireo bellii pusillus	least Bell's vireo	Endangered	Absent	No effect
Mammals				
Arctocephalus townsendii	Guadalupe fur seal	Threatened	Absent	No effect
Balaenoptera musculus	blue whale	Endangered	Absent	No effect
Balaenoptera borealis	sei whale	Endangered	Absent	No effect
Balaenoptera physalus	fin whale	Endangered	Absent	No effect
Eubalaena japonica	north Pacific right whale	Endangered	Absent	No effect
Megaptera novaeangliae	humpback whale	Endangered	Absent	No effect
Orcinus orca	southern resident killer whale	Endangered	Absent	No effect
Perognathus longimembris pacificus	Pacific pocket mouse	Endangered	Absent	No effect
Physeter macrocephalus	sperm whale	Endangered	Absent	No effect

Sources: (United States Fish and Wildlife Service 2025) and (National Marine Fisheries Service 2016).

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2.4.6 Invasive Species

2.4.6.1 Regulatory Setting

On February 3, 1999, President William J. Clinton signed EO 13112 requiring Federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." FHWA guidance issued August 10, 1999, directs the use of the State's invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the NEPA analysis for a proposed project.

2.4.6.2 Affected Environment

This section is based on the proposed Project's NES[MI] (GPA Consulting 2025), which was completed in July 2025. The 550-acre BSA (see Section 2.4.1, *Natural Communities*) spans along I-405 from PM 9.6 to PM 12.6 and extends 300 feet beyond the proposed Project Study Area limits to account for potential indirect impacts. Survey methodology and BSA parameters are described in further detail in Section 2.4.1, *Natural Communities.*

There are several species growing in the BSA that are listed by the Invasive Species Council of California (Cal-IPC) as invasive (California Invasive Plant Council, 2019), including wild oat (*Avena fatua*)(Cal-IPC rating: Moderate), ripgut brome (*Bromus diandrus*) (Cal-IPC rating: Moderate), Bermuda grass (*Cynodon dactylon*) (Cal-IPC rating: Moderate), black mustard (*Brassica nigra*) (Cal-IPC rating: Moderate), and common burdock (*Arctium minus)* (Cal-IPC rating: Moderate). Invasive species are often found in disturbed areas, and proposed Project activities would have the potential to spread invasive species through further disturbance of the BSA. These species could also be spread through the improper disposal of the graded and excavated soils onsite or offsite, or through landscaping with invasive species.

2.4.6.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no short-term direct or indirect impacts associated with the introduction or spread of invasive species would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Construction activities under Alternative 2, including grading, excavation, vegetation removal, vehicle movement, and equipment staging, have the potential to facilitate the spread of invasive plant species within the Project Study Area. Ground-disturbing

activities could expose soils and create conditions favorable for invasive species establishment, particularly in areas already characterized by disturbed or ruderal vegetation. Invasive species could also be introduced or spread through contaminated construction equipment, improper handling or disposal of excavated soils, or the use of erosion control or landscaping materials containing invasive species.

To minimize the potential introduction or spread of invasive species during construction of the proposed Project, Measure **INV-1** would be implemented, consistent with EO 13112 and FHWA guidance. Measure **INV-1** includes restrictions on the use of invasive species in landscaping and erosion control, inspection and cleaning of construction equipment, and implementation of site-specific precautions in areas where invasive species are present. With implementation of Measure **INV-1**, construction-related impacts associated with the spread of invasive species would be minimized to the extent feasible. Therefore, no short-term direct or indirect adverse impacts associated with the introduction or spread of invasive species would result from the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Construction activities under Alternative 3 would include limited and localized ground disturbance associated with multimodal improvements, roadway and sidewalk modifications, and installation of traffic management infrastructure. These activities could temporarily disturb soils and vegetation in previously disturbed areas, which could create conditions conducive to the establishment or spread of invasive plant species. Potential pathways for invasive species spread include movement of construction equipment, handling of soils, and temporary exposure of disturbed surfaces.

Similar to Alternative 2, Measure **INV-1** would be implemented, consistent with EO 13112 and FHWA guidance compliance with EO 13112, to reduce the potential for invasive species introduction or spread. Construction equipment would be inspected and cleaned as necessary, invasive species would not be used in erosion control or landscaping, and disturbed areas would be monitored to address invasive species if detected. With implementation of Measure **INV-1**, construction-related impacts associated with invasive species under Alternative 3 would be minimized to the extent feasible. Therefore, no short-term direct or indirect adverse impacts associated with the introduction or spread of invasive species would result from the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, no long-term direct or indirect impacts associated with the introduction or spread of invasive species would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Operational activities under Alternative 2 would consist of routine roadway use and standard maintenance within the existing transportation corridor. Operation of the proposed Project would not involve landscaping with invasive plant species, stockpiling of soils, or other activities that would increase the risk of introducing or spreading invasive species beyond conditions addressed during construction. Long-term operation would include maintenance practices consistent with Caltrans' Integrated Vegetation Management policies, which prohibit the use of species listed by the California Invasive Plant Council for erosion control or landscaping. Therefore, no long-term impacts related to invasive species would result from operation of the proposed Project under Alternative 2.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Operational activities under Alternative 3 would be limited to traffic management, multimodal facility use, and routine maintenance within previously disturbed areas. Operation of the proposed Project would not introduce new disturbance, soil movement, or vegetation conversion that could facilitate the spread of invasive species. Landscaping and erosion control associated with operation would remain consistent with Caltrans standards and EO 13112 requirements. As a result, no long-term impacts related to invasive species would result from operation of the proposed Project under Alternative 3.

2.4.6.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measure is proposed:

Measure INV-1 During construction, Caltrans' Resident Engineer or designated contractor, will ensure that existing vegetation would be preserved to the extent feasible, and Best Management Practices, such as identification of existing invasive species, avoidance of invasive species in erosion control, staff training, equipment cleaning, and monitoring, would be implemented in accordance with EO 13112.

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Chapter 3 CEQA Evaluation

3.1 DETERMINING SIGNIFICANCE UNDER CEQA

The Project is a joint project by Caltrans and FHWA and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the CEQA and NEPA. FHWA's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated May 27, 2022, and executed by FHWA and Caltrans. Caltrans is the lead agency under CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement, or a lower level of documentation, will be required. NEPA requires that an Environmental Impact Statement be prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an Environmental Impact Statement, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. See the Standard Environmental Reference (SER), Volume 1, Chapter 36, "Environmental Impact Reports" for more information. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this Project and CEQA significance.

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3.2 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

This section presents a summary comparison of the overall potential environmental impacts of the proposed Project in order to identify an environmentally superior alternative under the CEQA. The goal of identifying an environmentally superior alternative is to assist decision-makers in considering the proposed Project for approval. CEQA does not require that an agency select the environmentally superior alternative.

It is important to recognize that the selection of the environmentally superior alternative is not always a straight-forward exercise. Where no alternative clearly stands out as eliminating all potentially significant impacts, considerable weighing among the severity of the Project alternatives and the professional judgment of the lead agency becomes necessary.

According to CEQA Guidelines, if the environmentally superior alternative is the "no project" alternative (i.e., No-Build), then the EIR shall identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6[e][2]). Here, Alternative 1 (No-Build Alternative) would clearly qualify as the environmentally superior alternative because it would result in the fewest impacts on the physical environment. However, the No-Build Alternative would not meet the Project's objectives. Specifically, the No-Build Alternative would not improve safety, travel time reliability, or multi-modal access within the Project Study Area.

As discussed in Section 3.7, *CEQA Environmental Checklist*, none of the Build Alternatives would result in a significant environmental impact with mitigation incorporated. All Build Alternatives would result in potentially significant impacts on air quality and biological resources. However, with the implementation of the mitigation measures described in Section 3.7, these impacts would be less than significant under all Build Alternatives.

For the following reasons, among the Build Alternatives, Alternative 3 was identified as the environmentally superior alternative:

- *Air Quality*: Alternative 3 would result in less construction and similar operational emissions as Alternative 2. In addition, due to bridge widening, Alternative 2 could disturb ACM and require further abatement.

- *Biological Resources:* Alternative 3 would result in slightly less impacts on suitable habitat for the Crotch's bumble bee (*Bombus crotchii*) and the monarch butterfly (*Danaus plexippus plexippus* pop. 1) than Alternative 2. Alternative 2 would also widen the Dominguez Channel Bridge, resulting in temporary and permanent impacts on wetland and non-wetland waters and pickleweed mats. Unlike Alternative 3, Alternative 2 would require a Clean Water Act Section 404 permit, Section 401 water quality certification, and a Section 1602 streambed alternation agreement. Alternative 3 would not impact jurisdictional waters.

- *Cultural Resources:* Alternative 2 would widen the Dominguez Channel Bridge, which would require construction activities and permanent improvements within the Dominguez Channel Historic District. Although these impacts would not be significant, Alternative 3 would not directly impact the district.

- *Greenhouse Gas (GHG) Emissions:* Alternative 2 would emit approximately more metric tons of carbon dioxide equivalent (CO_2e) during construction than Alternative 3. However, both Alternative 2 and Alternative 3 would reduce operational GHG emissions compared to existing conditions.

- *Hazardous Waste/Materials:* Alternatives 2 and 3 are both located on and/or within the immediate vicinity of a site enumerated under Section 65962.5 of the Government Code ("Cortese" list). Unlike Alternative 3, Alternative 2 would widen bridge widening, which could disturb ACM and LBP, and require the acquisition of ROW within the Dominguez Channel, which reportedly received industrial waste discharges during the Twentieth Century. For these reasons, the Caltrans Office of Environmental Engineering determined the proposed ROW acquisitions under Alternative 2 would have a "high" risk.

- *Water Quality and Hydrology:* Alternative 3 would have a smaller DSA (12.70 acres) than Alternative 2 (30.98 acres). Alternative 3 would also add less net new impervious surface area (5.33 acres) than Alternative 2 (7.43 acres). Unlike Alternative 3, Alternative 2 would also require an encroachment permit from the Los Angeles County Flood Control District for work within the Dominguez Channel.

3.3 CLIMATE CHANGE

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the Earth's climate system. The Intergovernmental Panel on Climate Change, established by the United Nations and World Meteorological Organization in 1988, is devoted to GHG emissions reduction and climate change research and policy. Research published by the Intergovernmental Panel on Climate Change and other scientists over recent decades has shown an accelerated rate of climatological changes over the past 150 years, attributed to GHG emissions generated from the production and use of fossil fuels.

The impacts of climate change are already being observed in the form of sea level rise, drought, extended and severe fire seasons, and historic flooding from changing storm patterns. The most important strategy to address climate change is to reduce GHG emissions. Additional strategies are necessary to mitigate and adapt to these impacts. In the context of climate change, “mitigation” involves actions to reduce GHG emissions to lessen adverse impacts that are likely to occur. “Adaptation” is planning for and responding to impacts to reduce vulnerability to harm, such as by adjusting transportation design standards to withstand more intense storms, heat, and higher sea levels. This analysis will include a discussion of both in the context of this transportation project.

3.3.1 Regulatory Setting

For a full list of laws, regulations, and guidance related to climate change (GHGs and adaptation), please refer to SER, Chapter 16, Climate Change.

3.3.2 Environmental Setting

The proposed Project is in an urban area of Los Angeles County with a well-developed road and street network. The Project area includes a mix of residential, industrial, and commercial land uses. I-405 throughout the Project Study Area is heavily used during peak and off-peak hours. A semi-permanent, subtropical high-pressure zone over the Pacific Ocean primarily controls the climate in the area. The mild climate is occasionally disrupted by periods of hot weather, winter storms, and Santa Ana winds. The proposed Project area is in a region with a Mediterranean climate with hot dry summers and mild, wet winters. Vegetation communities near the Project area include non-native woodland and grassland, in addition to landscaped garden and recreational areas. Nearby waterways include the Dominguez Channel.

3.3.2.1 GHG Inventories

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals.

3.3.2.2 Regional Plans

As required by *The Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375)*, California ARB sets regional GHG reduction targets for California's 18 MPOs to achieve through planning future projects that will cumulatively achieve those goals and reporting how they will be met in the RTP/SCS. Targets are set as a percentage reduction in passenger vehicle GHG emissions per person, based on 2005 levels.

The proposed Project is located within Southern California Association of Governments (SCAG's) jurisdiction. SCAG's RTP/SCS titled Connect SoCal 2024 is a long-range plan that guides transportation development for the region's growth to 2050 (see Table 3.3-1). The plan's Environment element addresses GHGs in the Project area. The regional reduction target for the SCAG Region is 19 percent by 2035 (ARB 2021).

Table 3.3-1: Regional and Local Greenhouse Gas Reduction Plans

Title	GHG Reduction Policies or Strategies
SCAG 2024-2050 RTP/SCS (April 2024)	**Mobility:** Build and maintain an integrated multimodal transportation network **Communities:** Develop, connect and sustain livable and thriving communities **Environment:** Create a healthy region for the people of today and tomorrow **Economy:** Support a sustainable, efficient and productive regional economic environment that provides opportunities for all people in the region
City of Carson Climate Action Plan (2017)	**Measure LUT:** D2—Improve Design Development

Sources: (SCAG 2024); (City of Carson 2017)
Notes: GHG = Greenhouse Gas; RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy; Southern California Association of Governments=SCAG

In 2017, the City adopted a Climate Action Plan (CAP) developed through the South Bay Cities Council of Governments (SBCCOG) that identifies community-wide strategies to lower GHG emissions (see Table 3.3-1). The CAP includes emissions reductions from transportation, land use, energy generation and consumption, water consumption, and waste generation. The City completed inventories for 2005, 2007, 2010, and 2012 with a baseline year of 2005. The City has not updated its CAP since it was first published in 2017.

In 2015, the City set GHG emission reduction goals consistent with the State's AB 32 GHG emission reduction targets relevant for that time. The City's target was calculated as a 15 percent reduction below 2005 levels by 2020 and a longer-term goal of 49 percent below 2005 levels by 2035. However, as stated above, the most recent scoping plan has a statutory reduction goal of 85 percent below 1990 levels and achieve carbon neutrality no later than 2045, in accordance with AB 1279 (ARB 2022a). As such, the City's CAP is outdated and no longer relevant.

3.3.3 Project Analysis

GHG emissions from transportation projects can be divided into those produced during operation and use of the State Highway System (operational emissions) and those produced during construction. The primary GHGs produced by the transportation sector are carbon dioxide (CO_2), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, and various hydrofluorocarbons. CO_2 emissions are a product of burning gasoline or diesel fuel in internal combustion engines, along with relatively small amounts of methane and nitrous oxide. Additionally, the transportation sector emits a minor amount of hydrofluorocarbon emissions, which are related to refrigeration and air conditioning systems used in vehicles.

GHGs vary in their ability to trap heat in the atmosphere, a characteristic known as global warming potential. CO_2 is the most significant GHG due to its abundance and impact, and thus, the amounts of other gases are expressed relative to CO_2 using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned as a value of 1, and the global warming potential of other gases is assigned as multiples of CO_2. Both operational and construction emissions associated with the proposed project are analyzed in the sections below and emission values, if required, are expressed in CO_2e to provide a standardized measure of their impact.

The CEQA Guidelines generally address GHG emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code [PRC], § 21083(b)(2)). As the California Supreme Court explained, "because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself." (Cleveland National Forest Foundation v. San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512). In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the Project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.

3.3.3.1 Operational Emissions

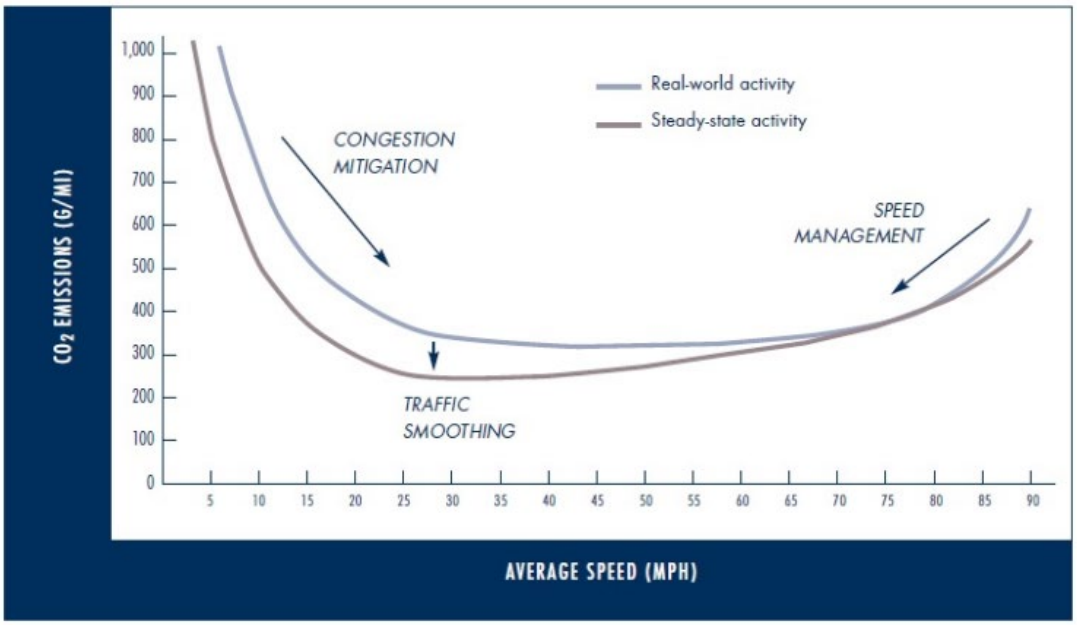
The purpose of the proposed Project is to improve freeway operations and safety along both directions of I-405 from Wilmington Avenue to Main Street. Alternative 2 would add auxiliary lanes between on- and off-ramps to improve weaving, merging, and diverging operations, which would increase roadway capacity. However, because the proposed Project would not increase the number of travel lanes on I-405, no increase in VMT would occur. While some GHG emissions during the construction period would be unavoidable, no increase in operational GHG emissions is expected.

However, there would be long-term GHG benefits from enhanced operational efficiency by less vehicle weaving, merging and diverging. The National GHG Inventory for 2022

reported that 80 percent of all U.S. GHG emissions in 2022 consisted of CO_2, and fossil fuel combustion for transportation accounted for 35 percent of those CO_2 emissions. Most (37 percent) transportation-related CO_2 was from operating light-duty trucks, 23 percent from medium- and heavy-duty trucks and buses, and 20 percent from passenger cars. The remainder of emissions came from other modes and off-road sources (U.S. EPA 2024). Because CO_2 emissions represent the greatest percentage of GHG emissions, it has been selected as a proxy for the following analysis for potential climate change impacts.

The highest levels of CO_2 from mobile sources such as automobiles occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour. See Figure 3.3-1 below titled "Possible Use of Traffic Operation Strategies in Reducing On-road CO_2 Emissions." To the extent that a project enhances operational efficiency and improves travel times in high-congestion travel corridors, GHG emissions, particularly CO_2, may be reduced, provided that improved travel times do not induce additional VMT.

Four primary strategies can reduce GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity, (3) transitioning to lower GHG emitting fuels, and (4) improving vehicle technologies through fleet mix and improving efficiency by reducing carbon footprints through the use of new pavement technologies. To be most effective, all four strategies should be pursued concurrently.



Source: (Barth and Boriboonsomsin 2010)

Figure 3.3-19: Possible Use of Traffic Operation Strategies in Reducing On-road CO_2 Emissions

The proposed Project is located within the SCAG region and is consistent with the goals and strategies outlined in SCAG's 2024–2050 RTP/SCS, which aims to improve mobility, reduce GHG emissions, and promote sustainable, multi-modal transportation. The proposed Project is specifically identified in SCAG's RTP/SCS and FTIP under ID LA9918955, affirming its role in the region's long-term transportation planning. By adding auxiliary lanes along both directions of the I-405 Project limits, the proposed Project is expected to enhance freeway efficiency and reduce congestion-related idling and emissions. Additionally, the implementation of Complete Street improvements, such as upgraded pedestrian and bicycle infrastructure, will promote active transportation and provide safer, more accessible travel alternatives. Together, these enhancements support SCAG's broader SB 375 objectives to reduce vehicle-related GHG emissions by improving operational performance and encouraging mode shift away from single-occupancy vehicles.

Quantitative Analysis

California ARB developed the EMission FACtors (EMFAC) model to facilitate preparation of statewide and regional mobile source emissions inventories. The model generates emissions rates that can be multiplied by vehicle activity data from all motor vehicles, from passenger cars to heavy-duty trucks, operating on highways, freeways, and local roads in California. EMFAC has a rigorous scientific foundation, has been approved by U.S. EPA, and has been vetted through multiple stakeholder reviews. Caltrans developed CT-EMFAC based on data derived from California ARB's EMFAC model and ancillary datasets to estimate project-level emissions from on-road mobile sources.

EMFAC's GHG emission rates are based on tailpipe emissions test data and the model does not account for factors such as the rate of acceleration and vehicle aerodynamics, which influence the amount of emissions generated by a vehicle. GHG emissions quantified using CT-EMFAC are therefore estimates and may not reflect actual on-road emissions. Nevertheless, modeling estimated GHG emissions with EMFAC or CT-EMFAC remains the most precise means of estimating future greenhouse gas emissions. While CT-EMFAC is currently the best available tool for calculating GHG emissions from mobile sources, it is important to note that the GHG results are only useful for a comparison of alternatives.

EMFAC2021 and VMT by speed-bin data were used to assess GHG emissions within the Project Study Area for Opening Year (2030), Design Year (2050), and existing conditions. VMT and GHG emissions estimates are shown below in Table 3.3-2.

Table 3.3-2: Modeled Annual CO2e Emissions and Vehicle Miles Traveled by Alternative

Alternative	Modeled CO_2e Emissions (metric tons/year)	Difference Build versus No- Build (metric tons/year)	Change from Existing/Baseline + or - (metric tons/year)	Annual Vehicle Miles Traveled[a]
Existing/Baseline Year (2024)	2,158,857	N/A	N/A	5,982,758,513
Opening Year (2030)				
No-Build Alternative 1	1,890,190	N/A	-268,667	5,959,543,172
Build Alternative 2	1,890,190	0	-268,667	5,959,543,172
Build Alternative 3	1,890,190	0	-268,667	5,959,543,172
Design Year (2050)				
No-Build Alternative 1	1,632,617	N/A	-526,240	5,904,081,468
Build Alternative 2	1,632,617	0	-526,240	5,904,081,468
Build Alternative 3	1,632,617	0	-526,240	5,904,081,468

Source: EMFAC2021
CO2 = carbon dioxide;
CO2e = CO2, nitrous oxide, methane; N/A=Not Applicable
[a] Annual vehicle miles traveled (VMT) values derived from Daily VMT values multiplied by 347, per ARB methodology (ARB 2008: I-19).

The modeled CO_2e emissions for existing conditions (2024) total approximately 2,158,857 metric tons per year, with an annual VMT of about 5.98 billion miles. In comparison, emissions in the Opening Year (2030) are expected to decrease to 1,890,190 metric tons under all scenarios, including No-Build and both Build Alternatives, representing a reduction of 268,667 metric tons per year compared to existing conditions. The reduction in CO_2e emissions compared to existing conditions is due to improvements in vehicle fuel efficiency and emissions technology.

By the Design Year (2050), GHG emissions are projected to further decline to 1,632,617 metric tons annually for all alternatives, representing a total decrease of 526,240 metric tons per year from existing conditions. Again, this decline is expected to occur across both No-Build and Build Alternatives (Alternatives 2 and 3) and aligns with anticipated VMT reductions as well as advancements in vehicle technology and stricter emissions standards over time.

The Build Alternatives do not differ from the No-Build scenario in either the Opening Year or Design Year in terms of modeled CO_2e emissions. This suggests that while the proposed Project may improve operational efficiency and support multi-modal travel through auxiliary lanes and Complete Street elements, these benefits do not significantly shift regional VMT or emissions at the modeled scale.

The purpose of the proposed Project is to provide improved connectivity and increase multi-modal access within the Project corridor and to accommodate the planned

economic development within the Project Study Area. The proposed Project under the Build Alternatives would not increase VMT. While some GHG emissions during the construction of the proposed Project would be unavoidable, no increase in operational GHG emissions is expected.

3.3.3.2 Construction Emissions

Construction GHG emissions would result from material processing and transportation, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. While construction GHG emissions are only produced for a short time, they have long-term effects in the atmosphere, so cannot be considered "temporary" in the same way as criteria pollutants that subside after construction is completed.

Use of long-life pavement, improved traffic management plans, and changes in materials can also help offset GHG emissions produced during construction by allowing longer intervals between maintenance and rehabilitation activities. Table 3.3-3 summarizes estimated construction-related GHG emissions in metric tons per year.

Table 3.3-3: Construction-related CO_2e Emissions by Alternative

Year	Alternative 2	Alternative 3
2028	9	28
2029	1,325	241
2030	284	30
Total	**1,618**	**299**

Source: (HDR 2026)
Note: Units for alternatives are in metric tons of CO_2e (carbon dioxide equivalent) per year

Based on the best available data at the time this report was prepared, the proposed Project has a total construction GHG emissions of approximately 1,618 metric tons of CO_2e under Alternative 2 and approximately 299 metric tons of CO_2e under Alternative 3 (HDR 2026). Construction-related CO_2e emissions for Alternatives 2 and 3 were evaluated through modeling using the California Emission Estimator Model (CalEEMod) and Project-specific vehicle activity data.

All construction contracts include Caltrans Standard Specifications related to air quality. Section 7-1.02A and 7-1.02C, Emissions Reduction, requires contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all California ARB emission reduction regulations. Section 14-9.02, Air Pollution Control, requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions. Standardized measures that have been deemed applicable to Alternatives 2 and 3 are provided in Section 3.3.4.2, *Project-Level GHG Reduction Strategies*.

3.3.3.3 CEQA Conclusion

Would the project:

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

Construction-related GHG emissions would be generated from several sources, including material production and transport, the operation of on-site construction equipment, and traffic delays caused by construction activities. Based on the best available data at the time of the analysis, the proposed Project would generate a total of approximately 1,618 metric tons and 299 metric tons of construction-related CO_2e emissions over the course of Project construction under Alternative 2 and Alternative 3, respectively (HDR 2025). Measures to reduce construction-related GHG emissions are required for all Caltrans projects (Caltrans 2019). The proposed Project includes several standardized measures, identified as Project design features, which would help control GHG emissions during construction. Caltrans Standard Specification 14-9 would require construction contractors to comply with all applicable air pollution control rules, regulations, ordinances, and statutes. Mitigation is not proposed.

The Build Alternatives would reduce CO2e emissions by 268,667 metric tons per year in the Opening Year (2030) and 526,240 metric tons per year by the Design Year (2050) compared to existing conditions. Therefore, the GHG emissions associated with the Build Alternatives in both the Opening Year and Horizon Year are projected to be lower than existing conditions. GHG emissions associated with the Build Alternatives are also not expected to exceed those of the No-Build Alternative in either analysis year. These operational reductions would offset any GHG emitted during construction.

GHG emissions associated with Build Alternatives in both the Opening Year and Design Year are projected to be lower than existing conditions, and the Build Alternatives emissions are not expected to exceed those of the No-Build Alternative in either analysis year. The proposed Project includes several standardized measures, identified as Project design features, that would help control GHG emissions during construction. In accordance with Caltrans' interim guidance (Caltrans 2019), impacts would be less than significant. No mitigation is required.

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

This proposed transportation Project is included in SCAG 2024–2050 RTP/SCS under Project ID LA9918955, aligning with the plan's objective to reduce transportation sector GHG emissions. Adding auxiliary lanes in both directions along the I-405 within the Project Study Area under Alternative 2, aims to improve freeway operations that would reduce congestion-related emissions. The inclusion of Complete Streets elements, such as enhanced pedestrian and bicycle facilities under the Build Alternatives, would further support a shift toward active transportation modes, offering safer and more accessible alternatives to single-occupancy vehicle use. These combined improvements advance SCAG's SB 375 goals by reducing vehicle-related GHG emissions through enhanced

efficiency and mode diversification. The proposed Project would not conflict with any applicable plan, policy, or regulation aimed at reducing GHG emissions and, therefore, its impact on climate change would be less than significant. No mitigation is required.

Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

3.3.4 Greenhouse Gas Reduction Strategies

3.3.4.1 Statewide Efforts

In response to AB 32, the Global Warming Solutions Act, California is implementing measures to achieve emission reductions of GHGs that cause climate change. Additionally, Caltrans has enacted policies and initiatives to reduce GHG emissions in transportation to reach the state's climate goals. For a full list of statewide and Caltrans GHG reduction strategies, refer to SER, Chapter 16, Climate Change.

3.3.4.2 Project-Level GHG Reduction Strategies

The following measures will be implemented in the Project to reduce GHG emissions and potential climate change impacts from the Project:

- Measure **AQ-1** (see Section 2.3.6, *Air Quality*)
- Measure **AQ-5** (see Section 2.3.6, *Air Quality*)
- Measure **AQ-6** (see Section 2.3.6, *Air Quality*)
- Measure **AQ-12** (see Section 2.3.6, *Air Quality*)
- Measure **AQ-13** (see Section 2.3.6, *Air Quality*)
- Measure **ENR-1** (see Section 2.3.8, *Energy*)
- Measure **ENR-2** (see Section 2.3.8, *Energy*)
- Measure **ENR-3** (see Section 2.3.8, *Energy*)
- Measure **NC-1** (see Section 2.4.1, *Natural Communities*)
- Measure **NC-3** (see Section 2.4.1, *Natural Communities*)
- Measure **NC-9** (see Section 2.4.1, *Natural Communities*)

Implementation of Measure **AQ-1**, requiring the use of Tier 4 equipment (see Section 2.3.6, *Air Quality*), would not reduce short-term GHG emissions (HDR 2025).

The Project also includes several standard project design features that would be implemented, which could reduce GHG emissions and potential climate change impacts from the proposed Project (see Section 1.4, *Project Alternatives*). This includes the following:

- Project Feature **PF-EN-1**
- Project Feature **PF-EN-2**
- Project Feature **PF-VIS-1**
- Project Feature **PF-WQ-1**

3.3.5 Adaptation

While reducing GHG emissions is crucial in combating climate change, it is only one part of the solution. Caltrans must proactively plan for the impact of climate change on California's transportation infrastructure. This involves modifying and protecting facilities to reduce potential damage and build resilience against future climate-related challenges.

Caltrans has conducted District Climate Change Vulnerability Assessments to identify segments of the State Highway System that are vulnerable to climate change impacts, such as sea level rise, increased temperatures, and extreme weather events. These assessments help prioritize areas for adaptation efforts and inform the development of strategies to enhance the resilience of critical infrastructure.

Additionally, Caltrans periodically prepares a Sustainability Roadmap, which outlines the agency's strategic plans and progress reports aimed at achieving state sustainability goals. The roadmap is a two-year progress report on several important milestones achieved by Caltrans while implementing Executive Orders B-16-12, B-18-12, and the adaptation planning process of Executive Orders B-30-15, N-19-19, and N-82-20.

Refer to SER, Chapter 16, Climate Change for additional information regarding federal, state, and Caltrans adaptation efforts.

3.3.5.1 Project Adaptation Analysis

EO B-30-15 requires that all projects consider future climate conditions in the planning and design decisions. With regard to the proposed Project, the following topics are covered below: sea level rise, precipitation and flooding, wildfire, and temperature.

Sea Level Rise

As shown below in Figure 3.3-2, the proposed Project is outside the coastal zone and not in an area subject to sea level rise. Accordingly, direct impacts to transportation facilities due to projected sea level rise are not expected.

Source: Caltrans Environmental GIS Viewer, 2025

Figure 3.3-20: NOAA 10 Foot Sea Level Rise Visualization

Precipitation and Flooding

The Project Study Area experiences an annual average rainfall of 12 inches, as recorded at Long Beach Daugherty Field Airport, with the majority of precipitation occurring during winter months. Climate change is expected to elevate several flood risk factors in Carson, California. Increased frequency and intensity of extreme rainfall events can overwhelm the city's stormwater infrastructure, leading to more frequent and severe urban flooding. Carson's flat terrain and high concentration of impervious surfaces further reduce the area's ability to absorb excess water, compounding runoff during storms. Additionally, rising sea levels and potential changes in groundwater levels may contribute to higher base flood elevations and exacerbate drainage issues, especially in low-lying parts of the Dominguez Channel watershed.

To enhance the flood risk resilience of the proposed Project, several adaptation strategies can be integrated into the design and construction. Alternatives 2 and 3 would require upgrading stormwater infrastructure – including bioswales and design pollution prevention infiltration areas – to assist in managing more intense rainfall and reduce flood risks. Pavement durability can be improved through the use of heat- and moisture-resistant materials and enhanced subbase drainage. In addition, auxiliary lanes, which are proposed under Alternative 2, can also support emergency access and evacuation during extreme weather events.

Wildfire

The City of Carson currently faces a very low wildfire risk that is attributed to the city's dense urban development and limited wildland-urban interface. The proposed Project would be located outside of a State Responsibility Area and, therefore, would not be located within a very high FHSZ (CAL FIRE 2025). See Section 3.5, *Wildfire*, for additional information. However, climate change is altering wildfire dynamics across California. Rising temperatures, prolonged droughts, and reduced precipitation have increased the frequency and intensity of wildfires statewide. While the city's immediate wildfire risk remains low, the broader regional escalation in wildfire activity could have indirect effects such as deteriorated air quality from smoke drift, and strains on emergency services.

Temperature

The District Climate Change Vulnerability Assessment (Caltrans 2019) indicates a maximum temperature increase of approximately 5.2 degrees Fahrenheit during the proposed Project's design life (2055). The temperature change during the Project's design life would not require adaptive changes in pavement design or maintenance practices.

3.4 SENATE BILL 743/INDUCED DEMAND ANALYSIS

SB 743 (2013) amended CEQA to allow the Governor's Office of Planning and Research to develop new guidelines under CEQA establishing alternative metrics to levels of service for the analysis of transportation impacts. On December 28th, 2018, the Office of Administrative Law approved the amendments to the CEQA Guidelines including changes related to SB 743. The amended CEQA Guidelines add a new section on determining the significance of transportation impacts, and generally specify VMT as the most appropriate measure of transportation impacts. In 2020, Caltrans prepared guidance documents for the implementation of SB 743 and adopted VMT as the CEQA transportation metric. These documents, the "Transportation Analysis Framework" (TAF) and "Transportation Analysis under CEQA" (TAC), along with other information can be found on the Caltrans SB 743 website.

As documented in the *VMT Screening Memorandum* prepared for the Project and completed in May 2024 (Fehr & Peers 2024), the proposed Project under Alternatives 2 and 3 is a type of project identified by the TAC as a project not likely to lead to a measurable and substantial increase in VMT. The proposed Project consists of the addition of auxiliary lanes and Complete Streets elements and TSM and TDM systems. The proposed Project would not change traffic speed or volume. Section 5.1.1 (ii) of the TAC states that a project for the "addition of an auxiliary lane of less than one mile in length designed to improve roadway safety" are a type of project not likely to lead to a measurable and substantial increase in vehicle travel. Alternative 2 would construct two auxiliary lanes on NB I-405 and two auxiliary lanes on SB I-405. The individual length of the auxiliary lanes designed to improve roadway safety, as well as the combined length of the auxiliary lanes in either direction of travel, is less than 1 lane mile. The series of auxiliary lanes would operate independently and would address localized safety and operational issues by allowing entrance ramp traffic to accelerate to a higher speed before merging with mainline traffic, providing more opportunities to merge, and thereby reducing the potential for speed differentials and maintaining more uniform travel speeds on the freeway mainline. Additionally, under Alternatives 2 and 3, the proposed Project would construct and implement Complete Streets elements as well as TSM and TDM systems, where feasible, throughout the Project Study Area. The Complete Streets elements aim to reduce vehicle travel by improving non-vehicular multimodal operations, consistent with Caltrans' CAPTI goals. The proposed TSM and TDM systems would use intelligent transportation systems to improve traffic surveillance, communication, and wayfinding; none of which would lead to a measurable and substantial increase in vehicular travel. Therefore, the proposed Project qualifies for screening from an induced demand analysis/VMT assessment.

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3.5 WILDFIRE

3.5.1 Regulatory Setting

SB 1241 required the Office of Planning and Research, the Natural Resources Agency, and the CAL FIRE to develop amendments to the "CEQA Checklist" for the inclusion of questions related to fire hazard impacts for projects located on lands classified as very high FHSZ. The 2018 updates to the CEQA Guidelines expanded this to include projects "near" these very high FHSZs.

3.5.2 Affected Environment

The Project Study Area is not located within or near a very high, high, or moderate FHSZ (CAL FIRE n.d.). The nearest FHSZ is located approximately 3.3 miles southwest of the Project Study Area and consists of a moderate FHSZ in a local responsibility area.

3.5.3 Environmental Consequences

Construction Impacts

Alternative 1 – No-Build

The Project Study Area is not located within or near a very high, high, or moderate FHSZ (CAL FIRE n.d.). Therefore, no short-term direct or indirect impacts related to wildfire risks would occur as a result of the proposed Project under Alternative 1.

Alternative 2 – Auxiliary Lanes and Complete Streets

The Project Study Area is not located within or near a very high, high, or moderate FHSZ (CAL FIRE n.d.). Therefore, no short-term direct or indirect impacts related to wildfire risks would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

The Project Study Area is not located within or near a very high, high, or moderate FHSZ (CAL FIRE n.d.). Therefore, no short-term direct or indirect impacts related to wildfire risks would occur as a result of the proposed Project under Alternative 3.

Operational Impacts

Alternative 1 – No-Build

The Project Study Area is not located within or near a very high, high, or moderate FHSZ (CAL FIRE n.d.). Therefore, no long-term direct or indirect impacts related to wildfire risks would occur as a result of the proposed Project under Alternative 1.

Alternative 2 – Auxiliary Lanes and Complete Streets

The Project Study Area is not located within or near a very high, high, or moderate FHSZ (CAL FIRE n.d.). Therefore, no long-term direct or indirect impacts related to wildfire risks would occur as a result of the proposed Project under Alternative 2.

Alternative 3 – Transportation System Management/Transportation Demand Management

The Project Study Area is not located within or near a very high, high, or moderate FHSZ (CAL FIRE n.d.). Therefore, no long-term direct or indirect impacts related to wildfire risks would occur as a result of the proposed Project under Alternative 3.

3.5.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are proposed.

3.6 CUMULATIVE IMPACTS

3.6.1 Regulatory Setting

Under CEQA (Guidelines Section 15355), “cumulative impacts” refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Cumulative impacts on resources in the project area may result from residential, commercial, industrial, and highway development. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts.

3.6.2 Resources Considered for Cumulative Impact Analysis

This section is based on the findings provided in Section 3.7, *CEQA Environmental Checklist*.

3.6.2.1 Resources Not Carried Forward for a Cumulative Impact Analysis

Resources with no impact have been dismissed from consideration because they would have no impact on resources within the Project Study Area, and therefore, would not result in cumulative impacts on the surrounding community. For resources that are less than significant, the proposed Project’s impact and existing cumulative condition were considered. The following environmental issues have not been carried forward for a detailed cumulative impact analysis, and no further discussion is required.

Agriculture and Forestry Resources

The cumulative setting for agriculture and forestry resources is the Project Study Area. There are no farmland or forestry resources located within or near the Project Study

Area. Therefore, the proposed Project would not result in any cumulative impacts on agriculture or forestry resources.

Land Use and Planning

The cumulative setting for land use and planning is the Project Study Area. The proposed Project would not physically divide an established community or conflict with local policies and regulations adopted for the purpose of avoiding or mitigating changes in land use or planning. No residences or business would be displaced. Therefore, the proposed Project would not result in any cumulative impacts on land use and planning.

Mineral Resources

The cumulative setting for mineral resources is the Project Study Area. Per the California Geological Survey Map of Aggregate Sustainability in California and the Carson 2040 General Plan, there are no mineral resources identified in the Project Study Area (California Geological Survey 2018) (City of Carson 2023). Therefore, the proposed Project would not result in any cumulative impacts on mineral resources.

Population and Housing

The cumulative setting for population and housing is the Project Study Area. The proposed Project would not result in construction of new homes and businesses. Although the Project is a roadway capacity enhancing project, it is not expected to induce vehicle miles traveled and would not lead to population growth. The proposed Project would not result in any residential or business relocations within the Project Study Area. Therefore, the proposed Project would not result in any cumulative impacts on population and housing.

Recreation

The cumulative setting for recreational resources is the Project Study Area. The nearest recreational facilities to the proposed Project include Perry Mini-Street Park and Calas Park, which are located approximately 0.15 and 0.17 mile from the Project Study Area, respectively. Alternative 2 and Alternative 3 accommodate growth but would not increase the use of existing parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated. Access to recreational facilities would be maintained during construction and operation of the proposed Project. Additionally, Alternative 2 and Alternative 3 do not include recreational facilities or require the construction or expansion of recreational facilities. Therefore, the proposed Project would not result in any cumulative impacts on recreation.

Tribal Cultural Resources

The cumulative setting for tribal cultural resources is the APE. No tribal cultural resources were identified in the APE. The possibility exists that previously unknown buried resources could be discovered during construction. Should archaeological resources or human remains be discovered during construction of either Build

Alternative, all work would stop within the vicinity of the discovery in accordance with Caltrans Standard Specification 14-2.03A (see Section 1.4, *Project Alternatives*, for Project Features **PF-CUL-1** and **PF-CUL-2**). Other projects are required to comply with standard regulations requiring the protection of tribal cultural resources. With compliance with standard regulations, potential impacts on tribal cultural resources would be expected to be avoided, minimized, or mitigated. Therefore, the proposed Project would not result in any cumulative impacts on tribal cultural resources.

Utilities and Service Systems

The cumulative setting for utilities and service systems is the Project Study Area. Utilities are present in the Project Study Area; however, users would not experience utility disruptions as part of the proposed Project. The proposed Project is not growth-inducing and would not require the construction of new or expanded utility facilities. Furthermore, like the proposed Project, other projects are required to comply with standard regulations regarding solid waste. Therefore, the proposed Project would not result in any cumulatively considerable impacts on utilities and service systems.

Wildfire

The cumulative setting for wildfire is the Project Study Area. The Project Study Area is not located within or near a very high, high, or moderate fire hazard severity zone. The proposed Project would not exacerbate wildfire risks or expose people or structures to the risk of wildfire. Therefore, the proposed Project would not result in any cumulative impacts on wildfire.

3.6.2.2 Resources Carried Forward for a Cumulative Impact Analysis

Under CEQA, all resources for which the proposed Project's impacts are less than significant with mitigation incorporated or significant and unavoidable must be included in the cumulative impact analysis. Resources for which the proposed Project's impacts are less than significant need to be reviewed to evaluate the proposed Project's impact and the existing cumulative condition. The following resources are carried forward for a cumulative impact analysis and are discussed below in Section 3.6.3: Aesthetics, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Public Services, and Transportation.

The cumulative impact analysis is limited to the City's plans and programs to best reflect the environment that the proposed Project could cumulatively impact. There are several projects located within a 3-mile radius of the Project Study Area and within Carson (see Figure 3.6-1 and Table 3.6-1).

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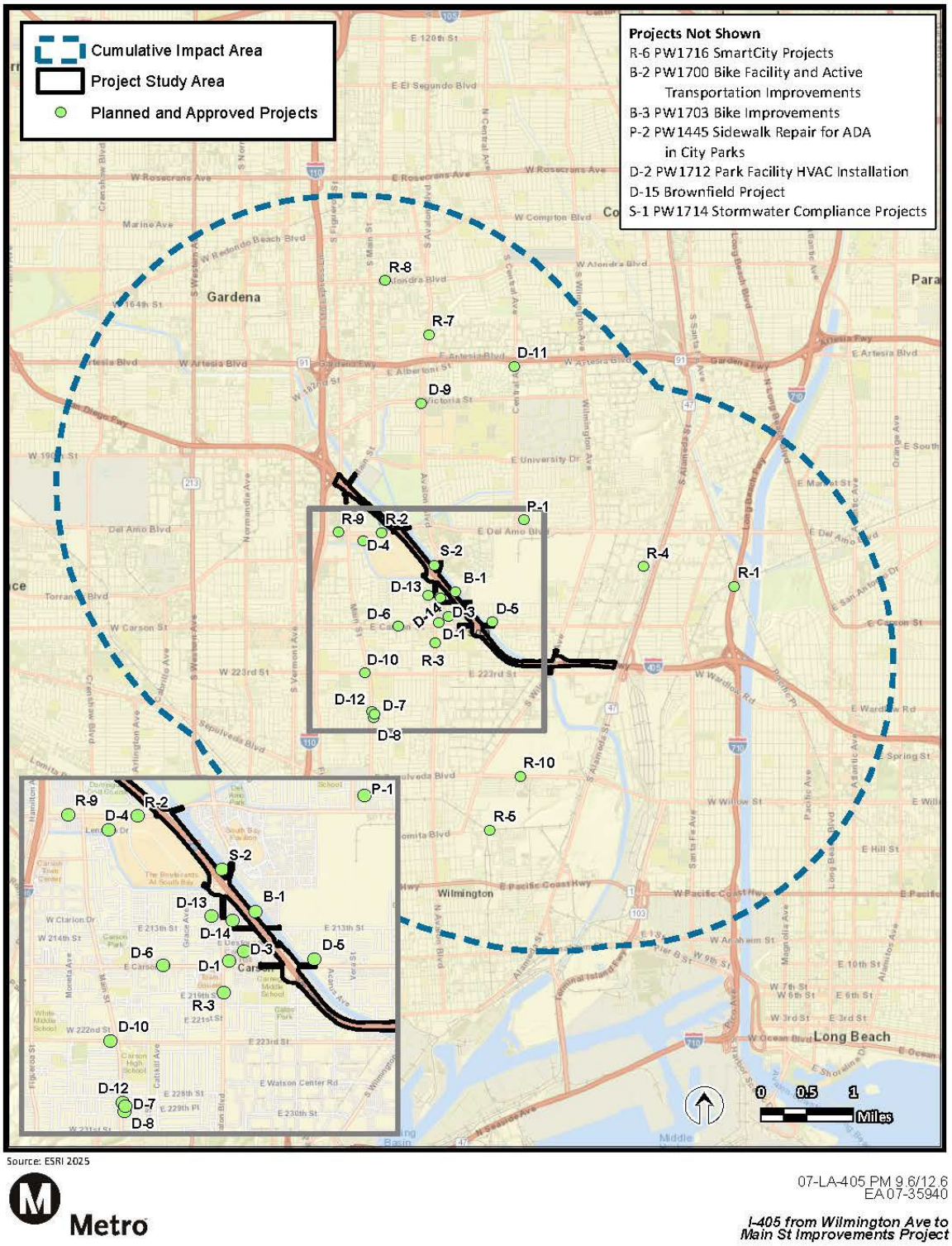

Figure 3.6-1: Planned and Approved Projects in the Cumulative Impact Area

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Table 3.6-1: Planned and Approved Projects in the Cumulative Impact Area

Project ID	Name	Jurisdiction	Location	Proposed Uses	Status
Roadway Projects (R-X)					
R-1	I-710 Soundwalls Project	Metro	Along the I-710 corridor from State Route-60 to Pacific Coast Highway, Carson, CA	Components of this project include construction of 5 miles of new sound walls along I-710 as well as an additional 7 miles of existing walls that would be aesthetically treated to match the new walls.	Design is currently under review
R-2	PW1617 Leonardo Drive	City of Carson	City of Carson, Leonardo Drive	Components of this project include construction of new roadway to serve the 157-acre site development.	Design
R-3	PW1691 Annual Pavement Overlay	City of Carson	City of Carson, Avalon Boulevard Street Rehabilitation from Carson Street to 223rd Street	Components of this project include street rehabilitation, such as asphalt pavement grind and overlay, local removal, and replacement of roadway section. It would also include concrete reconstruction, tree removal and replacement, repair of damaged sidewalks, driveway approaches, curbs and gutters, access ramps.	Planned
R-4	PW1116 209th Street /Brant Ave/Lamberton Ave/Maciel Ave – Selective Roadway	City of Carson	City of Carson, 209th Street, Brant Avenue, Lamberton Avenue, and Maciel Avenue Improvement	Components of this project include removal and reconstruction of curb and gutter, installation of streetlights, and pavement rehabilitation. Potential right-of-way acquisition along Maciel Avenue may be necessary. 209th Street, Brant Avenue, Lamberton Avenue, and Maciel Avenue Improvement.	Planned
R-5	PW1702 Lomita Boulevard Safety Improvements – Wilmington to Alameda	City of Carson	City of Carson, Lomita Boulevard from Wilmington to Alameda	Components of this project include street reconstruction of Lomita Boulevard (Carson side).	Planned

Project ID	Name	Jurisdiction	Location	Proposed Uses	Status
R-6	PW1716 SmartCity Projects	City of Carson	City of Carson	Components of this project include the design and installation of a Fiber Optic Backbone System in targeted areas for roadways.	Planned
R-7	PW1751 Avalon Boulevard – Victoria to Alondra	City of Carson	City of Carson, Avalon Boulevard Street Improvement from Victoria to Alondra	Components of this project include improvements, such as asphalt pavement grind and overlay, local removal, and replacement of roadway section. It would also include concrete reconstruction, tree removal and replacement, repair of damaged sidewalk, driveway approaches, curbs and gutters, access ramps.	Planned
R-8	PW1759 Alondra Boulevard – Figueroa to Avalon	City of Carson	City of Carson, Avalon Boulevard from Figueroa to Avalon	Components of this project include 1 mile of improvements, such as asphalt pavement grind and overlay, local removal, and replacement of roadway section. It would also include concrete reconstruction, tree removal and replacement, repair of damaged sidewalk, driveway approaches, curbs and gutters, access ramps.	Planned
R-9	PW1760 Del Amo – Figueroa and Main St.	City of Carson	City of Carson, Del Amo Boulevard from Figueroa to Main Street	Components of this project include asphalt pavement grind and overlay, local removal, and replacement of roadway section. It would also include concrete reconstruction, tree removal and replacement, repair of damaged sidewalk, driveway approaches, curbs and gutters, access ramps.	Planned

Project ID	Name	Jurisdiction	Location	Proposed Uses	Status
R-10	PW1761 Sepulveda Boulevard – Avalon to Alameda	City of Carson	Sepulveda Boulevard from Avalon Street to Alameda Street, Carson, CA	Components of this project include asphalt pavement grind and overlay, local removal, and replacement of roadway section. It would also include concrete reconstruction, tree removal and replacement, repair of damaged sidewalk, driveway approaches, curbs and gutters, and access ramps.	Planned
Bike Improvements (B-X)					
B-1	PW1600 Dominguez Channel Bike Path II	City of Carson	City of Carson along Dominguez Channel from Avalon to Carson Street	Components of this project include a bike path installation along the Dominguez Channel.	Planned
B-2	PW1700 Construction of Bike Facility and Active Transportation Improvements	City of Carson	Throughout City of Carson	Components of this project include construction of 30 miles of bike facilities and active transportation improvements.	Planned
B-3	PW1703 Design and Construct Bike improvements	City of Carson	City of Carson	Components of this project include the design and construction of the balance of the improvements described in the bike master plan, which is approximately 58 miles of bike improvements.	Planned

Project ID	Name	Jurisdiction	Location	Proposed Uses	Status
Parks and Recreation (P-X)					
P-1	PW1636 Mills Park Renovations	City of Carson	City of Carson	Components of this project include the installation of new shade structure over picnic shelters and outdoor exercise equipment. Construction of Unisex restrooms (prefabrication) for public use, monument sign, and wading pool demo – Per Capita Grant.	Planned
P-2	PW1445 Sidewalk Repair for ADA in City Parks	City of Carson	City of Carson	Components of this project include the repair of walkways for Americans with Disabilities Act (ADA) compliance in various City parks.	Planned
Development, Rehabilitation, and Improvement Projects (D-X)					
D-1	PW1662 City Hall Renovation (HVAC & Roof)	City of Carson	701 East Carson Street, Carson, CA 90745	Components of this project include upgraded heating, ventilation, and air conditioning (HVAC) and the roof at City Hall and Community Center.	Planned
D-2	PW1712 Park Facility HVAC Installation	City of Carson	City of Carson	Components of this project include the design and construction of a $750k per Gymnasium and Facility.	Planned
D-3	PW1725 Community Center – Teen/Innovation Center Expansion	City of Carson	801 Carson St, Carson, CA 90745	Components of this project include building out the Community Center campus to include a full-service Teen/Innovation Center focused on the needs of Carson's youth.	Planned

Project ID	Name	Jurisdiction	Location	Proposed Uses	Status
D-4	The District at South Bay	RE Solutions	Between Del Amo and Avalon Boulevards, fronting on the I-405 Freeway and less than 1 mile from the I-110 Freeway, Carson, CA	Components of this project include a 157-acre brownfield project that would transform the former landfill into a vibrant mixed-use development.	Planned
D-5	Perry Street Residences	21611 Perry Street, LLC	21611 Perry Street Carson, CA 90745	Components of this project include a 62-unit 3-story residential condominium townhome development that would contain ten residential buildings, private and common open space, off-street parking, internal roadway, infrastructure connections, and landscaping.	Under Review
D-6	Anastasi Development	Anastasi Development	336 East Carson Street Carson, CA 90745	Components of this project include a 50-unit residential townhome development that would contain 10 residential buildings that are 35 feet high, private and common open space, off-street parking, internal roadway, infrastructure connections, and landscaping.	Under Review

Project ID	Name	Jurisdiction	Location	Proposed Uses	Status
D-7	Figueroa Street Business Park	WPT	20601 Main Street, Carson, CA	Components of this project include the development of a business park campus that would accommodate a range of uses that includes offices, research and development, e-commerce, and light industrial uses in three structures totaling approximately 303,490 square feet and one general commercial/retail structure totaling approximately 2,700 square feet (all four structures would include a total building area of 306,190 square feet) in accordance with the proposed Figueroa Street Business Park Specific Plan and Development Agreement.	Under Review
D-8	Griffith Street BESS Development	VESI LLC	18800 Broadway, Carson, CA	Components of this project include redevelopment of the approximately 3-acre project site with a Battery Energy Storage System (BESS) and associated infrastructure. Lithium-ion batteries would be stored within modular outdoor enclosures, and power that is released or captured by the batteries would be transferred to and from the Southern California Edison (SCE) Nola Substation via an underground 66-kilovolt generation transmission (gen-tie) line.	Under Review

Project ID	Name	Jurisdiction	Location	Proposed Uses	Status
D-9	SyWest Development	SyWest Development	20151 Main Street, Carson, CA	Components of this project include a retail Shopping Center (Preferred Land Use Scenario)–approximately 233,000-square-foot retail shopping center anchored by an approximately 153,000-square-foot warehouse-style big box store, approximately 50,000-square-foot mid-size junior anchor, approximately 15,000-square-foot small anchor, and three restaurant or retail pads ranging from approximately 4,800 to 5,200 square feet—and commerce Center (Secondary Land Use Scenario)—Approximately 532,390 square foot industrial warehouse/distribution facility, including logistic use, spread among two buildings.	Under Review
D-10	18101 Avalon Blvd	Ventus Group	18101 Avalon Boulevard, Carson, CA	Components of this project include the demolition of an existing church and new construction of a 30-unit condominium development.	Under Review
D-11	138 W 223rd Street	Golden State Alliance, LLC	138 W 223rd Street, Carson, CA	Components of this project include new construction of an 11-unit apartment development.	Under Review
D-12	Chevron Gas Use Expansion	Max Netty	17453-55 Central Avenue, Carson, CA	Components of this project include the addition of a new automatic, drive-through carwash and new gas pump island for large-body trucks to an existing gas station with a convenience store and restaurant with a drive-through, as well as additional site improvements.	Under Review

Project ID	Name	Jurisdiction	Location	Proposed Uses	Status
D-13	Carson Country Mart	City of Carson	20400 E. Main Street, Carson, CA	Components of this project include the development of a 96-acre portion of the 157-acre site, formerly the Cal-Compact Landfill, into residential (1,250 units), regional commercial (696,500 square feet), and restaurant (15,000 square feet) planning areas.	Approved
D-14	Imperial Avalon Mixed Use	City of Carson	21207 South Avalon Boulevard, Carson, CA	Components of this project include the development of 27.21 acres from regional commercial and low density residential to urban residential. The residential unit mix would include 764 multifamily apartment units, of which 83 would be rented to senior and/or veterans; 28 detached townhome units; and 323 attached townhome units. The project would also include 10,000 square feet of restaurant uses and 111,581 square feet of publicly accessible and privately maintained open space (including a 22,859-square-foot park).	Approved
D-15	Carson Triangle Project	City of Carson	21140, 21212, and 21126 Avalon Boulevard, Carson, CA	Components of this project include a residential development consisting of 32 affordable apartments and 283 market-rate townhouses. The site would ultimately contain 52 residential buildings, a community pool building, private and common open spaces, landscaping, off-street parking, internal roadways, infrastructure connections, and landscaping.	Approved

Project ID	Name	Jurisdiction	Location	Proposed Uses	Status
Stormwater Projects (S-X).					
S-1	PW1714 Stormwater Compliance Projects	City of Carson	Throughout City of Carson	Components of this project include the clean-up of the Dominguez Channel, correcting the hydraulic inefficiencies, planting trees and native plants to allow infill treatment and infiltration, and installing lighting and fencing to comply with the State Water Resources Control Board Permit requirements.	Planned
S-2	Dominguez Channel Parkway BMP Project, I-185	City of Torrance	City of Carson, City of Torrance	Components of this project include the improvement of water quality at the Dominguez Channel and Torrance Lateral.	Planned

Source: (GPA Consulting 2025)

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3.6.3 Resource-by-Resource Cumulative Impact Analysis

The following environmental issues were determined to have a less than significant impact, less than significant impact with mitigation, or significant impact under CEQA, and therefore, further discussion is required:

3.6.3.1 Aesthetics

The cumulative setting for aesthetics is the AVE.

Current Conditions and Historical Context

Visual resources are not prevalent within the AVE due to urbanization in the region. There are no scenic vistas or officially designated or eligible scenic highways within the AVE. There is minor landscaping present within the AVE along the shoulders of I-405 that would be impacted by the proposed Project. All of the projects listed in Table 3.6-1, specifically roadway projects such as R-1 (I-710 Soundwalls Project) and R-2 (PW1617 Leonardo Drive) within the AVE, may introduce further deterioration to landscaping.

Project Impacts

Given that the AVE does not consist of any scenic vistas or other resources, most project-related impacts described in Section 3.7.1, *Aesthetics*, primarily landscaping, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved, and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged, and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would require the removal of approximately 114 existing trees. However, during final design, a highway landscape plan would be prepared in compliance with all applicable Caltrans and City regulations governing landscaping, and 542 trees would be planted in the Project Study Area following construction. Avoidance and Minimization Measure **VIS-1** would be implemented to verify that the design avoids removing or negatively affecting visual resources, such as mature trees and shrub groupings, to the extent feasible. If removal of mature trees and shrub groupings cannot be avoided, additional landscape improvements would be incorporated into final design so the areas would be revegetated to account for the loss of mature vegetation. Under Alternative 2, I-405 would maintain its classification as a Classified Landscape Freeway. Measure **VIS-2** would require a Hardscape Plan to be prepared that would implement attractive bridge, tunnel, medians, retaining walls, sound barriers, and other aesthetic treatments. Nighttime construction is anticipated, and Measure **VIS-3** would require that a Lighting Plan be prepared to ensure lighting fixtures are selected and installed to minimize glare on adjacent properties and into the night sky. During final design, a Highway Landscape

Plan would be prepared in compliance with all applicable Caltrans and City regulations concerning landscaping (Project Feature **PF-VIS-1**). Other planned and approved projects are expected to introduce similar measures, if required. Other planned or approved projects listed in Table 3.6-1 would be expected to determine mitigation/minimization measures to reduce impacts from the projects. With compliance with standard regulations, potential impacts on aesthetics would be expected to be avoided, minimized, or mitigated. Therefore, Alternative 2 would not have cumulatively considerable impacts on aesthetics.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Alternative 3 would largely not change landscape or vegetation compared to existing conditions. Complete Streets elements would contribute positively to the overall visual character and quality in the AVE. Similarly to Alternative 2, Measures **VIS-1** through **VIS-3** and Project Feature **PF-VIS-1** would be implemented. Other planned or approved projects listed in Table 3.6-1 would be expected to determine mitigation/minimization measures to reduce impacts from the projects. With compliance with standard regulations, potential impacts on aesthetics would be expected to be avoided, minimized, or mitigated. Therefore, Alternative 3 would not have cumulatively considerable impacts on aesthetics.

3.6.3.2 Air Quality

The cumulative setting for the air quality analysis is the SCAB.

Current Conditions and Historical Context

Air quality within the SCAB is managed by the SCAQMD in cooperation with the SCAG, local governments, and the private sector. The 2022 AQMP provides the blueprint for meeting state and federal ambient air quality standards. Air quality within the SCAB is highly affected by transportation because more automobiles use roadways in the region every year. All of the projects listed in Table 3.6-1, specifically transportation projects within the SCAB, such as R-2 (PW1617 Leonard Drive), may introduce increased air quality emissions.

Project Impacts

Given the existing air quality in the SCAB due to decades of increased automobile use, most project-related impacts should be considered cumulative in nature. Even small-scale or temporary effects contribute incrementally to the ongoing deterioration in air quality. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing

conditions would remain unchanged and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

As discussed in Section 3.7.3, *Air Quality*, the proposed Project would not result in a long-term impact on the region's ability to meet state and federal air quality standards. The proposed Project's long-term influence would be consistent with the goals and policies of the SCAQMD's AQMP as well as the SCAG RTP and FTIP, both of which conform to the SCAQMD AQMP. Although the proposed Project is a roadway capacity enhancing project, it is not expected to induce vehicle miles traveled, would have no impact on traffic volumes, and would not result in substantial operational emissions during the Opening Year or Design Year compared to existing conditions. However, construction of Alternative 2 would result in the temporary increase in daily emissions of ROG, CO, N_2O, PM_{10} and $PM_{2.5}$.

The proposed Project is listed in the 2024–2050 RTP. In its Program Environmental Impact Report prepared for the 2024–2050 RTP/SCS, SCAG concluded that, although RTP mitigation measures would encourage a reduction in GHG emissions, they would not guarantee GHG emission reductions. Implementation of Measures **AQ-1** through **AQ-16** impacts related to construction emissions would be minimized, to the greatest extent feasible. The proposed Project under Alternative 2, in consideration with the potential impacts from projects listed in Table 3.6-1, would not result in cumulative impacts on the SCAB.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Alternative 3 would be consistent with the same goals and policies listed under Alternative 2. While impacts under Alternative 3 would be less than Alternative 2, Alternative 3 would result in similar short-term air quality degradation as Alternative 2. Alternative 3 would implement Measures **AQ-1** through **PF-AQ-15** to reduce construction emissions to the greatest extent feasible. The proposed Project under Alternative 3, in consideration with the potential impacts from projects listed in Table 3.6-1, would not result in cumulative impacts on the SCAB.

3.6.3.3 Biological Resources

The cumulative setting for biological resources is the BSA.

Current Conditions and Historical Context

Biological resources within the BSA have undergone significant degradation due to urbanization, flood control measures, and industrial development. Notably, salt marshes and native grasslands have been largely converted or fragmented. Wildlife movement is constrained by transportation corridors and developed land, though the Dominguez Channel still functions as a limited movement corridor for birds and small mammals. These changes have occurred incrementally over decades through a combination of infrastructure development, urban runoff impacts, and loss of upland buffers.

All of the projects listed in Table 3.6-1, specifically ongoing maintenance and flood control along the Dominguez Channel, and industrial and commercial redevelopment on brownfield sites within Carson, such as D-4 (The District at South Bay) and D-16 (Brownfield Project), may introduce further encroachment, vegetation removal, or hydrologic alterations.

Project Impacts

Given the already degraded condition of biological resources in the BSA due to decades of urbanization, channelization, and industrial development, most project-related impacts described in the Biological Environment section, including those to wetlands, sensitive plant and wildlife habitat, and stream-associated vegetation, should be considered cumulative in nature. Even small-scale or temporary effects contribute incrementally to the ongoing regional decline in habitat quality, connectivity, and biodiversity. This is particularly true for rare or remnant habitats, such as pickleweed marsh, which may have been historically reduced throughout the Dominguez Channel. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would have permanent impacts on 0.01 acre of tidal pickleweed marsh and 0.50 acre of CDFW streambed habitat. However, avoidance, minimization (e.g., ESA fencing, BMP), and 1:1 tidal marsh credit mitigation are proposed. Avoidance, Minimization and/or Mitigation Measures **NC-1** though **NC-11**, and Project Features **PF-WQ-1** through **PF-WQ-13**, and **PF-BR-1** would be implemented to minimize impacts on water quality (which would minimize impacts on Pickleweed Mats).

Furthermore, Alternative 2 would temporarily impact approximately 1.30 acres of non-wetland waters, 0.07 acre of federally protected wetlands, and 2.08 acres of state protected wetlands. Temporary indirect effects may occur within the Dominguez Channel, Torrance Lateral Channel, and Del Amo Channel from construction access, grading, and dust generation. Alternative 2 would include implementation of Project Features **PF-WQ-1** through **PF-WQ-13** to avoid and minimize temporary impacts on wetland and non-wetland waters through construction-phase BMPs, seasonal phasing of soil-disturbing work, and slope stabilization to reduce erosion and sediment discharge during construction. Avoidance, Minimization and/or Mitigation Measures **NC-1** through **NC-9** would be implemented to further minimize temporary impacts on wetland and non-wetland waters by limiting disturbance, maintaining buffers from jurisdictional features, implementing dust and erosion control BMPs, preventing spills, and restoring all temporary impact areas to pre-project conditions or better.

Alternative 2 would also permanently impact approximately 0.33 acre of non-wetland waters, 0.01 acre of federally protected wetlands and 0.55 acre of state protected wetlands. Avoidance, Minimization and/or Mitigation Measures **NC-1** through **NC-9** would avoid impacts on jurisdictional features and pickleweed mats. In addition, high-visibility fencing would be installed around pickleweed mats to prevent construction crews or equipment from entering the area (Measure **NC-10**). Mitigation Measure **NC-11** requires mitigation for impacts on jurisdictional features and pickleweed mats at a minimum of a 1:1 ratio and includes purchase of in-lieu fees, mitigation bank credits, on-site replanting, or other measures deemed applicable by the regulatory agencies.

Temporary effects include disturbance of 5.47 acres of potential habitat for special-status plants and 6.00 acres of stream-associated vegetation. Alternative 2 would result in approximately 2.01 acres of temporary impacts and approximately 0.54 acre of permanent impacts on suitable habitat for lucky morning-glory, southern tarplant, and Sanford's arrowhead and approximately 2.47 acres of temporary impacts and approximately 0.19 acre of permanent impacts on suitable habitat for vernal barley and smooth tarplant. The proposed Project would be constructed in compliance with dust control regulations, and with implementation of Avoidance, Minimization and/or Mitigation Measures **NC-5**, **PS-1,** and **PS-2**, and Project Features **PF-WQ-7, PF-WQ-9, PF-WQ-10**, and **PF-WQ-11** loss of special-status plants is not anticipated.

Alternative 2 would result in approximately 2.47 acres of temporary impacts and approximately 0.19 acre of permanent impacts on suitable habitat for American bumble bee. Alternative 2 would result in approximately 2.47 acres of temporary impacts and approximately 0.19 acre of permanent impacts on suitable habitat for Crotch's bumble bee and approximately 1.86 acres of temporary impacts and approximately 0.07 acre of permanent impacts on suitable foraging habitat for monarch butterfly. Alternative 2 would result in approximately 2.46 acres of temporary impacts and approximately 0.20 acre of permanent impacts on suitable habitat for burrowing owl and approximately 0.07 acres of temporary impacts and 0.01 acre of permanent impacts on suitable foraging habitat for Belding's savannah sparrow. To avoid and/or minimize potential impacts on special-status wildlife species, Avoidance, Minimization and/or Mitigation Measures **AS-1** through **AS-4**, **TE-1** through **TE-8**, **NC-1** through **NC-3**, **NC-9**, **AQ-2** through **AQ-6**, and **AQ-12**, as well as Project Features **PF-WQ-7**, **PF-WQ-9** through **PF-WQ-11**, **PF-VIS-1**, **PF-NOI-1** through **PF-NOI-5, PF-BIO-1**, and **PF-BIO-2** would be implemented.

These impacts in consideration with the projects listed in Table 3.6-1, ongoing maintenance and flood control along the Dominguez Channel, and industrial and commercial redevelopment on brownfield sites within Carson, such as D-4 and D-16, may result in cumulative impacts in the Cumulative Impact Area, unless coordinated mitigation is enforced. However, with implementation of Avoidance, Minimization and/or Mitigation Measures **NC-1** through **NC-10**, **PS-1** through **PS-2**, **AS-1** through **AS-4**, **TE-1** through **TE-6**, **INV-1**, and Project Features **PF-BIO-1**, and **PF-BIO-2,** the cumulative impacts related to the proposed Project would be minimized to the greatest extent feasible. Other planned and approved projects are expected to introduce similar

measures. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, would not result in cumulative impacts on the BSA.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Alternative 3 would also result in temporary effects, including disturbance of 5.97 acres of potential habitat for special-status plants and 0.13 acre of temporary direct impacts on pickleweed mats. Permanent direct impacts on 0.01 acre of unvegetated streambed and no permanent direct impacts on pickleweed mats under CDFW jurisdiction would result under Alternative 3. Given the rarity of pickleweed mats and the limited extent of remaining natural habitat in the watershed, even small losses could incrementally contribute to regional declines. However, avoidance, minimization (e.g., Environmentally Sensitive Area fencing, BMPs, and 1:1 tidal marsh credit mitigation) are proposed. With implementation of Avoidance, Minimization and/or Mitigation Measures **NC-1** though **NC-11** and Project Features **PF-WQ-1** through **PF-WQ-13**, and **PF-BR-1**, impacts on water quality are not anticipated. Furthermore, Alternative 3 would not result in temporary or permanent impacts to non-wetland waters or wetlands under federal or state jurisdiction.

Alternative 3 would result in no temporary or permanent impacts on suitable habitat for lucky morning-glory, southern tarplant, and Sanford's arrowhead under Alternative 3. Alternative 3 would result in approximately 2.47 acres of temporary impacts and approximately 0.11 acre of permanent impacts on suitable habitat for vernal barley and smooth tarplant. However, the proposed Project would be constructed in compliance with dust control regulations, and with implementation of Avoidance, Minimization and/or Mitigation Measures **PS-1**, **PS-2**, and **NC-5** loss of special-status plants is not anticipated.

Alternative 3 would result in approximately 2.47 acres of temporary impacts and approximately 0.11 acre of permanent impacts on suitable habitat for American bumble bee. Alternative 3 would result in approximately 2.47 acres of temporary impacts and approximately 0.11 acre of permanent impacts on suitable habitat for Crotch's bumble bee and approximately 1.83 acres of temporary impacts and approximately 0.04 acre of permanent impacts on suitable foraging habitat for monarch butterfly. However, with implementation of the proposed Measures **TE-1** through **TE-7**, the proposed Project is not expected to result in adverse impacts on Crotch's bumble bee or monarch butterfly. Therefore, the proposed Project would have no effect on monarch butterfly and is not expected to result in take of Crotch's bumble bee. Alternative 3 would result in approximately 2.46 acres of temporary impacts and approximately 0.20 acres of permanent impacts on suitable habitat for burrowing owl and no temporary or permanent impacts on suitable foraging habitat for Belding's savannah sparrow. To avoid and/or minimize potential impacts on special-status wildlife species, Measures **AS-1** through **AS-4**, **TE-1** through **TE-8**, **NC-1** through **NC-3**, **NC-9**, **AQ-2** through **AQ-6**, and **AQ-12** as well as Project Features **PF-WQ-9-PF**, **WQ, 11**, **PF-VIS-1,** and **PF-NOI-1** through **PF-NOI-5** would be implemented.

These impacts, in consideration with the projects listed in Table 3.6-1, ongoing maintenance and flood control along the Dominguez Channel, and industrial and commercial redevelopment on brownfield sites within Carson, such as D-4 and D-16, may result in cumulative impacts on the Cumulative Impact Area, unless coordinated mitigation is enforced. However, with implementation of Measures **NC-1** through **NC-11**, **NC-11**, **PS-1** and **PS-2**, **AS-1** through **AS-4**, **TE-1** through **TE-8**, **INV-1**, **AQ-2** through **AQ-6**, and **PF-AQ-12** as well as Project Features **PF-BIO-1** and **PF-BIO-2, PF-WQ-1** through **PF-WQ-13**, **PF-BR-1**, and **PF-NOI-1** through **PF-NOI-5** the cumulative impacts related to the proposed Project would be minimized to the greatest extent feasible. Other planned and approved projects are expected to introduce similar measures. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the BSA if other planned or approved projects do not develop measures to reduce impacts from their projects.

3.6.3.4 Cultural Resources

The cumulative setting for cultural resources is the APE.

Current Conditions and Historical Context

Dominguez Channel Historic District is the only built environment cultural resource within the Project's APE. The district was previously determined eligible for the National Register of Historic Places and the California Register of Historic Resources. Therefore, it is a historical resource for the purpose of CEQA. One previously recorded prehistoric archaeological cultural resource was identified within the APE (CA-LAN-88/P-19-000088). Based on archaeological surveys of the APE, this resource appears to have been destroyed as a result of previous construction of the Dominguez Channel and I-405.

All of the projects listed in Table 3.6-1, specifically projects that require ground disturbance or impacts on the Dominguez Channel Historic District, may introduce further changes to cultural resources.

Project Impacts

Given the presence of cultural resources within the APE, most project-related impacts should be considered cumulative in nature. Even small-scale or temporary effects contribute incrementally to impacts on cultural resources. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged, and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

One previously recorded archaeological cultural resource was identified within the APE. Based on archeological surveys of the APE, this resource appears to have been destroyed, and no other known archaeological resources were identified within the APE. In the event that previously unknown archaeological resources are encountered during construction, all work would stop within the vicinity of the discovery in accordance with Caltrans Standard Specification 14-2.03A (see Project Feature **PF-CUL-1**). In the event that previously unknown human remains are encountered during construction, Alternative 2 would incorporate standard measures to stop all work within the vicinity of the discovery and contact the most likely descendant in accordance with Caltrans Standard Specification 14-2.03A and California Health and Safety Code Section 7050.5 (see Project Features **PF-CUL-1** and **PF-CUL-2**). With compliance with standard regulations and Project Features **PF-CUL-1** and **PF-CUL-2**, the cumulative impacts related to the proposed Project would be minimized to the greatest extent feasible.

One known historical resource, the Dominguez Channel Historic District, was identified within the APE. Construction activities and permanent improvements involving changes to the Dominguez Channel Historic District and its immediate setting would occur under Alternative 2. These changes include widening of pavement, realignment of on- and off-ramps, construction of retaining walls and noise barriers, and widening of the Dominguez Channel Bridge (Bridge # 53-1166). TCE and partial permanent acquisition of Channel ROW on either side of the bridge would be required for construction and maintenance. Caltrans determined the proposed Project under Alternative 2 follows the Secretary of the Interior's Standards for the Treatment of Historic Properties and therefore is considered as mitigated to a level of less than significant impact on historical resources.

Other planned and approved projects are expected to introduce similar measures. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the APE if other planned or approved projects do not develop measures to reduce impacts from their projects.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

With implementation of Project Features **PF-CUL-1** through **PF-CUL-2**, the cumulative impacts archaeological cultural resources related to the proposed Project would be minimized to the greatest extent feasible. Other planned and approved projects are expected to introduce similar measures. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the APE if other planned or approved projects do not develop measures to reduce impacts from their projects.

No construction activities or permanent improvements involving changes to the Dominguez Channel Historic District or its immediate setting would occur under Alternative 3. As such, no short- or long-term direct or indirect adverse impacts on historical resources would occur as a result of the proposed Project under Alternative 3.

Therefore, Alternative 3 would not have cumulatively considerable impacts on historical resources.

3.6.3.5 Energy

The cumulative setting for energy is the Project Study Area.

Current Conditions and Historical Context

Energy use within the Project Study Area is limited primarily to fuel consumption from vehicles driving along I-405. In addition, street lighting causes an additional, limited source of energy consumption. Energy consumption increases incrementally as more vehicles use roadways within the Project Study Area because more time is generally spent in traffic.

Project Impacts

Given the increased energy usage within the Project Study Area due to increased vehicle use, most project-related impacts described in Section 3.7.6, *Energy*, should be considered cumulative in nature. Even small-scale or temporary effects contribute incrementally to the ongoing regional energy usage. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged, and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Under Alternative 2, temporary impacts on energy usage would occur because construction of Alternative 2 would result in the consumption of 21,953 million British Thermal Units (BTU). The preparation of a Transportation Management Plan (TMP) (Project Feature **PF-TR-1**), ensuring the proposed Project incorporates the use of energy-efficient lighting (Project Feature **PF-EN-1**), and incorporation of Caltrans Standard Specification to reduce fossil fuel consumption (Project Feature **PF-EN-2**) would ensure that the proposed Project would not result in the wasteful, inefficient, or an unnecessary consumption of energy resources during construction under Alternative 2. Further, Measures **ENR-1** through **ENR-4** and **AQ-15** would be implemented, which would further control energy use and consumption during construction. Other planned and approved projects are expected to introduce similar measures.

Permanent energy usage would decrease direct energy use by 12 percent in the Opening Year and 21 percent by the Design Year. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the Project Study Area if other planned or approved projects do not develop measures to reduce impacts from their projects.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Under Alternative 3, temporary impacts on energy usage would occur because construction of Alternative 3 would result in the consumption of 4,022 million BTU. For the same reasons as described under Alternative 2, the proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the Project Study Area if other planned or approved projects do not develop measures to reduce impacts from their projects.

3.6.3.6 Geology and Soils

The cumulative setting for geology and soils is the Project Study Area.

Current Conditions and Historical Context

Geology and soils within the Project Study Area are susceptible to liquefaction and ground shaking but are not known for landslides. Although the Project Study Area is susceptible to liquefaction, due to the relatively flat topography and deep depths of liquefiable layers, lateral spreading is not expected within the Project Study Area. Ground shaking may occur due to proximity to nearby regional and local faults.

All of the projects listed in Table 3.6-1, specifically ground disturbing projects, such as R-2 (PW1617 Leonardo Drive), B-1 (PW1600 Dominguez Channel Bike Path), D-3 (PW1725 Community Center – Teen/Innovation Center Expansion), D-5 (Perry Street Residences), D-13 (Carson County Mart), D-14 (Imperial Avalon Mixed Use), and S-2 (Dominguez Channel Parkway BMP Project, I-185), may introduce further erosion within the Project Study Area.

Project Impacts

Given the risk of liquefaction, erosion of soils, expansive soils, and impact on paleontological resources in the Project Study Area, most project related impacts should be considered cumulative in nature. Even small-scale or temporary effects contribute incrementally to soil erosion. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Under Alternative 2, construction activities would temporarily disturb soil and vegetation within the Project Study Area, primarily in trample zones around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased potential of soil erosion due to soil exposure. During a

storm event, soil erosion could occur at an accelerated rate. Alternative 2 would be designed to minimize slope failure, settlement, and erosion. Standard measures would be implemented that require adherence to the requirements of the Construction General Permit, which would include implementation of erosion and sediment control BMPs pursuant to a Stormwater Pollution Prevention Plan (SWPPP; see Project Features **PF-WQ-1** through **PF-WQ-13**). Typical measures that could be implemented include the application of soil stabilizers, such as soil binders, rock slope protection, velocity dissipation devices, and flared end sections for culverts. Furthermore, although the Project Study Area is susceptible to liquefaction, due to the relatively flat topography and deep depths of liquefiable layers, lateral spreading is not expected within the Project Study Area. Subsurface soils within the Project Study Area generally consist of artificial fill composed primarily of silty sand and alluvium, which consists of clay and silt in the upper layers and sand at deeper depths, and are generally expected to be non-expansive or exhibit low to medium expansion potential due to the presence of both cohesive and cohesionless soil. Measure **GEO-1** would be implemented during final design to conduct further evaluation of expansive and potentially corrosive soils and provide recommendations regarding construction procedures and/or design criteria to reduce the effect of these soils on development of the proposed Project.

There is potential to impact paleontologically sensitive geologic units at or near the surface during construction. In accordance with Caltrans Standard Specification 14-7.03, contactors would be required to stop work within a 60-foot radius of a discovery if paleontological resources are encountered during construction. Further, a Paleontological Mitigation Plan would be prepared by a qualified principal paleontologist prior to the construction phase to protect potential paleontological resources (Measure **PAL-1**). Other planned and approved projects are expected to introduce similar measures.

The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the Project Study Area if other planned or approved projects do not develop measures to reduce impacts from their projects.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

For the same reasons as described under Alternative 2, the proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the Project Study Area if other planned or approved projects do not develop measures to reduce impacts from their projects.

3.6.3.7 Greenhouse Gas Emissions

The cumulative setting of the GHG emissions analysis is the SCAB.

Current Conditions and Historical Context

GHG emissions within the SCAB are managed by the SCAG, local governments, and the private sector. The 2024–2050 RTP/SCS outlines the region's objective to reduce transportation sector GHG emissions. All of the projects listed in Table 3.6-1,

specifically transportation projects within the SCAB, such as R-2 (PW1617 Leonard Drive), may introduce increased GHG emissions.

Project Impacts

Given the current condition of GHG emissions within the SCAB, most project-related impacts should be considered cumulative in nature. Even small-scale or temporary effects contribute incrementally to ongoing GHG emissions. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Construction-related GHG emissions would be generated from several sources, including material production and transport, the operation of on-site construction equipment, and traffic delays caused by construction activities. Measures to reduce construction-related GHG emissions are required for all Caltrans projects (Caltrans 2019). Caltrans Standard Specification 14-9 would require construction contractors to comply with all applicable air pollution control rules, regulations, ordinances, and statutes (Project Feature **PF-AQ-1**). Based on the best available data at the time of the analysis, Alternative 2 would have a total of approximately 1,618 MT of construction-related CO_2e emissions.

When compared to the existing conditions (2024), Alternative 2 would reduce CO2e emissions by 268,667 MT in the Opening Year (2030) and 526,240 MT per year by the Design Year (2050). Therefore, the GHG emissions associated with Alternative 2 in both the Opening Year and Design Year are projected to be lower than existing conditions, and Alternative 2 emissions are not expected to exceed those of the No-Build Alternative in either analysis year.

Construction of Alternative 2 would result in the temporary increase in daily emissions of ROG, CO, N_2O, PM_{10} and $PM_{2.5}$. The proposed Project is listed in the 2024–2050 RTP. In its Program EIR prepared for the 2024–2050 RTP/SCS, SCAG concluded that although RTP mitigation measures would encourage reduction in GHG emissions, they would not guarantee GHG emission reductions. With the implementation of measures identified in Section 3.3.2.1, *Project-Level GHG Reduction Strategies*, impacts related to construction emissions would be minimized to the greatest extent feasible. Other planned and approved projects are expected to introduce similar measures if required. Alternative 2 would not conflict with any applicable plan, policy, or regulation aimed at reducing GHG emissions. Project improvements would advance SCAG's SB 375 goals by reducing vehicle-related GHG emissions through enhanced efficiency. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1,

may result in cumulative impacts on the SCAB if other planned or approved projects do not develop measures to reduce impacts from their projects.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Alternative 3 would have approximately 299 MT of construction-related CO_2e emissions. When compared to the existing conditions (2024), Alternative 3 would reduce CO2e emissions by 268,667 MT in the Opening Year (2030) and 526,240 MT per year by the Design Year (2050). Therefore, the GHG emissions associated with Alternative 3 in both the Opening Year and Design Year are projected to be lower than existing conditions, and Alternative 3 emissions are not expected to exceed those of the No-Build Alternative in either analysis year.

For the same reasons as described under Alternative 2, the proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts if other planned or approved projects do not develop measures to reduce impacts from their projects.

3.6.3.8 Hazards and Hazardous Materials

The cumulative setting of the hazards and hazardous materials analysis is the Project Study Area.

Current Conditions and Historical Context

Hazardous materials are present within the Project Study Area. Historic land uses within the Project area have contributed to an accumulation of potentially hazardous waste and materials in man-made structures, soils, and groundwater. The Project Study Area is located on and/or within the immediate vicinity of a site enumerated under Section 65962.5 of the Government Code (“Cortese” list). The Initial Site Assessment (ISA) identified the following recognized environmental conditions (REC) for both Build Alternatives:

- Former Bkk Landfill
- Former Cal Compact landfill
- Dominguez Channel
- Current and former buried hazardous material and liquid waste pipelines crossing the ROW at uncertain locations

Contaminated groundwater and soil could be encountered due to these RECs as well as other environmental conditions that do not rise to the level of RECs that have also been identified at various distances outside the Project Study Area, as described further in Section 2.3.5, *Hazardous Waste/Materials*, and the Project’s ISA (ISA; Kroner Environmental Services, Inc. 2024). Aerially deposited lead (ADL) may also be encountered under either Build Alternative. Yellow traffic striping, pavement markings,

and treated wood would also be disturbed during construction activities. All of the projects listed in Table 3.6-1, specifically projects located near these Cortese list sites, may introduce increased risk of exposure.

Project Impacts

Most project-related impacts described in Section 2.3.5, *Hazardous Waste/Materials*, should be considered cumulative in nature. Even small-scale or temporary effects contribute incrementally to exposure to these materials. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged, and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would require the use of hazardous materials and would be anticipated to generate hazardous waste during construction and routine maintenance activities. Examples of hazardous materials likely to be used during construction, under all Build Alternatives, include lubricants (both grease and oils), petroleum fuels, cleaning solvents, and paints. Construction and routine maintenance activities would follow all applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous waste and materials. The ISA identified four RECs within the Project Study Area. Contaminated groundwater and soil could be encountered due to these RECs. ADL may also be encountered under Alternative 2. Yellow traffic striping, pavement markings, and treated wood would also be disturbed during construction activities.

Alternative 2 would widen the Dominguez Channel Bridge. Structural work could potentially disturb ACM and/or LBP. In addition, the Dominguez Channel was known to receive industrial waste in the past. Therefore, there is a strong likelihood of legacy contamination in channel sediment and in soil, soil vapor, and groundwater being encountered under Alternative 2. However, encounters with these hazardous materials would be short-term and limited to construction. Alternative 2 would implement Project Features **PF-HW-1** through **PF-HW-6**, from Section 1.4, *Project Alternatives*, as well as Avoidance and Minimization Measures **HAZ-1** through **HAZ-5**, which require further testing and proper handling of hazardous waste and materials during construction. During operation, I-405 would operate similarly to the existing condition, and all routine maintenance activities would be conducted in compliance with applicable regulations governing the use, storage, handling, transportation, and disposal of potentially hazardous materials. Other planned and approved projects are expected to comply with federal, state, and local regulations. With compliance with standard regulations, potential impacts on hazards and hazardous materials would be expected to be avoided, minimized, or mitigated. The proposed Project, in consideration with the

potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts within the Project Study Area if other planned or approved projects do not develop measures to reduce impacts from their projects.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Alternative 3 would implement TSM/TDM and Complete Streets elements. Alternative 3 would implement Project Features **PF-HW-1** through **PF-HW-6**, from Section 1.4, *Project Alternatives*, as well as Avoidance and Minimization Measures **HAZ-1** through **HAZ-4**, which require further testing and proper handling of hazardous waste and materials during construction. During operation, I-405 would operate similarly to the existing condition, and all routine maintenance activities would be conducted in compliance with applicable regulations governing the use, storage, handling, transportation, and disposal of potentially hazardous materials. Examples of hazardous materials likely to be used during construction, under all Build Alternatives, include lubricants (both grease and oils), petroleum fuels, cleaning solvents, and paints. For the same reasons as described under Alternative 2, the proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the Project Study Area if other planned or approved projects do not develop measures to reduce impacts from their projects.

3.6.3.9 Hydrology and Water Quality

The cumulative setting for hydrology and water quality is the Dominguez Channel Watershed.

Current Conditions and Historical Context

As discussed in Section 3.7.10, *Hydrology and Water Quality*, the Dominguez Channel is located within the Project Study Area. Hydrology and water quality within the Dominguez Channel and Dominguez Channel Watershed have undergone significant degradation due to urbanization, flood control measures, and industrial development. These changes have occurred incrementally over decades through a combination of infrastructure development and urban runoff impacts.

All of the project listed in Table 3.6-1, specifically ongoing maintenance and construction projects along the Dominguez Channel, such as R-2 (PW1617 Leonardo Drive), B-1 (PW1600 Dominguez Channel Bike Path), D-3 (PW1725 Community Center – Teen/Innovation Center Expansion), D-5 (Perry Street Residences), D-6 (Anastasi Development), D-13 (Carson County Mart), D-14 (Imperial Avalon Mixed Use), and S-2 (Dominguez Channel Parkway BMP Project, I-185), may introduce further degradation in water quality or hydrologic alterations.

Project Impacts

Given the already degraded condition of hydrology and water quality in the Domingez Channel Watershed due to decades of urbanization and industrial development, most project-related impacts described in Section 3.7.10, *Hydrology and Water Quality*,

should be considered cumulative in nature. Even small-scale or temporary effects contribute incrementally to the ongoing regional decline in hydrologic features and water quality. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged, and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Construction of Alternative 2 could result in temporary impacts on the Dominguez Channel Watershed from construction materials, dust, and/or debris that would impact water quality. Excavated soil would be exposed, and there would be an increased potential for soil erosion compared to existing conditions during construction. In addition, chemicals, liquid products, petroleum products (such as paints, solvents, and fuels), and concrete-related waste may be spilled or leaked during construction with the potential to be transported via storm water runoff into receiving waters. Alternative 2 would require work within the Dominguez Channel for widening the Dominguez Channel Bridge (Bridge No. 53-1166). The construction contractor would be required to prepare an SWPPP and implement BMPs for Alternative 2 in accordance with Caltrans' BMP Manual and the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, as specified within Project Features **PF-WQ-1** through **PF-WQ-13**. Other planned and approved projects are expected to introduce similar measures if required.

Following construction of Alternative 2, pollutants of concern of a transportation facility include sediment/turbidity, nutrients, organic compounds, trash and debris, oxygen-demanding substances, bacteria and viruses, oil and grease, pesticides, and metals could be released. These pollutants could also be discharged into the Dominguez Channel Watershed in storm water runoff as a result of incidental drippings from vehicles and accidental spills during maintenance activities, such as bridge painting and surface treatments.

Alternative 2 would result in an increase of 7.43 acres of net new impervious surface area and 9.05 acres of replaced impervious surface area. Alternative 2 would improve drainage systems within the Project Study Area, including new storm drains and inlets, relocation and modification of existing facilities, biofiltration swales, media filters, Design Pollution Prevention Infiltration Areas, and extension of existing crossing culverts. The post-construction treatment area for Alternative 2 would total 18.01 acres, which would be equal to or greater than the amount of net new impervious surface area.

Alternative 2 proposes to widen the Dominguez Channel Bridge, which would include the temporary use of construction equipment, vehicles, and materials within the

100-year floodplain and the construction of temporary bridge supports during construction. Water surface elevation would increase by 0.01 foot more under Alternative 2 than the existing condition for approximately 10,000 feet within the channel (HDR 2025). This minor rise would not impede or redirect flood flows. A Floodplain Encroachment Permit would be sought from the Los Angeles County Flood Control District for work conducted within the Dominguez Channel prior to construction. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the Dominguez Channel Watershed if other planned or approved projects do not develop measures to reduce impacts from their projects.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Alternative 3 would result in an increase of 5.33 acres of net new impervious surface area and 3.30 acres of replaced impervious surface area. Similarly to Alternative 2, Alternative 3 would improve drainage systems, and the post-construction treatment area would total 18.01 acres, which would be equal to or greater than the amount of net new impervious surface area. Alternative 3 would not require work within Dominguez Channel and would not impact the 100-year floodplain. Similar to Alternative 2, Alternative 3 would implement Project Features **PF-WQ-1** through **PF-WQ-13**. For the same reasons as described under Alternative 2, the proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the Dominguez Channel Watershed if other planned or approved projects do not develop measures to reduce impacts from their projects.

3.6.3.10 Noise

The cumulative setting of the noise analysis is the Project Study Area.

Current Conditions and Historical Context

The primary sources of noise in the Project Study Area include traffic along I-405 and on local roadways, including Wilmington Avenue and Carson Street. Noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following noise impacts.

Project Impacts

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged, and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Nighttime construction is anticipated under Alternative 2. Construction equipment is expected to generate noise levels ranging from 80 to 85 dB at a distance of 50 feet; noise produced by construction equipment would decrease over distance at a rate of approximately 6 dB per doubling of distance. Under Alternative 2, construction noise would be short-term and intermittent. The project includes several standard measures that would minimize noise impacts, including requirements to use alternative warning methods (Project Feature **PF-NOI-1**), use properly muffled equipment (Project Features **PF-NOI-2** and **PF-NOI-3**), place and orientate stationary equipment away from sensitive receptors (Project Feature **PF-NOI-4**), and site construction staging and maintenance areas away from noise-sensitive uses (Project Feature **PF-NOI-5**), where feasible. In addition, Avoidance and Minimization Measure **NOI-1** would be implemented requiring the preparation of a noise control plan and limiting pile driving to daytime hours.

As discussed in *Section 2.3.7, Noise*, existing noise levels range from 37 to 77 dBA Leq(h). Predicted noise levels at all analyzed receivers would be similar with or without the proposed Project compared to the No-Build Alternative and existing conditions (i.e., between approximately -2 to 2 dBA at modeled receivers under Alternative 2). A 3 dB change is the lowest noise level that is perceptible by the average human ear in an outdoor environment. Therefore, the proposed Project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in any local general plan, noise ordinance, or other applicable standard under Alternative 2. Impacts would be less than significant. No mitigation is required. However, as discussed in *Section 2.3.7, Noise*, abatement is being considered in the form of sound barriers per federal requirements under NEPA/23 CFR 772.

During construction, Alternative 2 could generate groundborne vibration or noise. As discussed above, construction activities would be controlled by adherence to Caltrans' noise and vibration standards. As described in Section 2.3.7, *Noise*, Alternative 2 would implement standard Project Features **PF-NOI-1** through **PF-NOI-5**. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the noise environment if other planned or approved projects do not develop measures to reduce impacts from their projects.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

Alternative 3 would implement TSM/TDM and Complete Streets elements. Alternative 3 would implement standard Project Features **PF-NOI-1** through **PF-NOI-5** For the same reasons as described under Alternative 2, the proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts if other planned or approved projects do not develop measures to reduce impacts from their projects.

3.6.3.11 Public Services

The cumulative setting of the public services analysis is the Project Study Area.

Current Conditions and Historical Context

Public services within or in the vicinity of the Project Study Area include two fire stations, two law enforcement stations, one hospital, one educational facility, and five parks/recreational facilities. All of the projects listed in Table 3.6-1, specifically transportation projects such as R-1 (I-710 Soundwalls Project), R-2 (PW1617 Leonardo Drive), R-3 (PW1691 Annual Pavement Overlay), R-4 (PW1116 209th Street/Brandt Ave/Lamberton Ave/Maciel Ave – Selective Roadway), R-5 (PW1702 Lomita Boulevard Safety Improvements – Wilmington to Alameda), R-6 (PW1716 SmartCity Projects), R-7 (PW1751 Avalon Boulevard – Victoria to Alondra), R-8 (PW1759 Alondra Boulevard – Figueroa to Avalon), R-9 (PW1760 Del Amo – Figueroa and Main Street), and R-10 (PW1761 Sepulveda Boulevard – Avalon to Alameda) may introduce increased difficulty in accessing these facilities.

Project Impacts

Given the already congested nature of the Project Study Area, most project-related impacts should be considered cumulative in nature. Even small-scale or temporary effects contribute incrementally to congestion and difficulty accessing various public services. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged, and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

Alternative 2 would not require the acquisition or displacement of emergency service facilities. However, emergency access may be affected temporarily by detours associated with temporary freeway mainline and ramp closures that would require emergency service providers to use different routes. However, detour routes would be provided, and local emergency services would be informed of the proposed Project's construction schedule, lane closures (if any), and detour plans (if any) at least 2 weeks in advance of any detour plan or lane closure being implemented during construction (Project Feature **PF-UT-2**). Additionally, a TMP would be implemented and would identify alternate routes, detours, and access points for motorists (Project Feature **PF-TR-1**). Following construction, access would be fully restored, and traffic conditions along the I-405 corridor would be improved. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts on the Project Study Area if other planned or approved projects do not develop measures to reduce impacts from their projects.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

For the same reasons as described under Alternative 2, the proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts in the Project Study Area if other planned or approved projects do not develop measures to reduce impacts from their projects.

3.6.3.12 Transportation

The cumulative setting of the transportation analysis is the Project Study Area.

Current Conditions and Historical Context

Transportation facilities are present within the Project Study Area. All of the projects listed in Table 3.6-1, specifically roadway projects such as R-2 (PW1617 Leonardo Drive), R-3 (PW1691 Annual Pavement Overlay), R-4 (PW1116 209th Street/Brandt Ave/Lamberton Ave/Maciel Ave – Selective Roadway), R-5 (PW1702 Lomita Boulevard Safety Improvements – Wilmington to Alameda), R-6 (PW1716 SmartCity Projects), R-7 (PW1751 Avalon Boulevard – Victoria to Alondra), R-8 (PW1759 Alondra Boulevard – Figueroa to Avalon), R-9 (PW1760 Del Amo – Figueroa and Main Street), and R-10 (PW1761 Sepulveda Boulevard – Avalon to Alameda) may introduce increased congestion within the Project Study Area during construction of each project.

Project Impacts

Given the already congested nature of roadways within the Project Study Area, most project-related impacts should be considered cumulative in nature. Even small-scale or temporary effects contribute incrementally to the ongoing congestion. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts. The proposed Project may result in the following impacts.

Alternative 1 – No-Build

Under the No-Build Alternative, I-405 would not be improved and Complete Streets elements and TSM/TDM elements would not be implemented. Therefore, existing conditions would remain unchanged, and no cumulative impacts would result under the No-Build Alternative.

Alternative 2 – Auxiliary Lanes and Complete Streets

The proposed Project is a roadway capacity enhancing project but is not expected to induce vehicle miles traveled and would have no impact on traffic volumes. During construction of Alternative 2, a TMP would be prepared to ensure that at least one lane of traffic would remain open in each direction on roads, local access would be maintained to businesses and residential properties at all times, and appropriate signage would be developed to direct pedestrian, bicycle, and vehicular traffic to alternate routes (Project Feature **PF-TR-1**). Temporary ramp closures would occur during construction and would be reopened following the completion of work. Ramps would not be closed simultaneously and would be staggered to minimize closure

impacts. It is anticipated that nearby projects would do the same. Operation of Alternative 2 would result in beneficial impacts related to traffic congestion, connectivity, and mobility in the Project Study Area and would provide sidewalks, crosswalks, Americans with Disabilities Act (ADA)-compliant curb ramps, and wider shoulders where limited facilities currently exist. The proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts in the Project Study Area if other planned or approved projects do not develop measures to reduce impacts from their projects.

Alternative 3 – Transportation Systems Management/Transportation Demand Management

For the same reasons as described under Alternative 2, the proposed Project, in consideration with the potential impacts from projects listed in Table 3.6-1, may result in cumulative impacts in the Project Study Area if other planned or approved projects do not develop measures to reduce impacts from their projects.

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3.7 CEQA ENVIRONMENTAL CHECKLIST

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed Project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.7.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

Question	CEQA Determination
a) Have a substantial adverse effect on a scenic vista?	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Less Than Significant Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less Than Significant Impact

CEQA Significance Determinations for Aesthetics

a) No Impact

Neither Build Alternative would have a substantial adverse impact on a scenic vista because the Project's AVE does not include any scenic vistas.

b) No Impact

Neither Build Alternative would substantially damage a scenic resource within a state scenic highway because there are no officially designated or eligible state scenic highways within the Project's AVE (Caltrans 2023).

c) Less than Significant

The Project Study Area is located in an urbanized area of Los Angeles County. All construction activities would largely occur within Caltrans ROW or within or along the banks of the Dominguez Channel. Neither Build Alternative would conflict with any applicable zoning or other regulation governing scenic quality.

During final design, a Highway Landscape Plan would be prepared in compliance with all applicable Caltrans and City regulations governing landscaping (see Section 1.4, *Project Alternatives*, for Project Feature **PF-VIS-1**), under both Build Alternatives. Alternative 2 would remove approximately 114 existing trees. However, according to the Project's Landscape Concept Plan, Alternative 2 would plant 542 trees throughout the Project Study Area. Therefore, the Project features would result in no net loss of trees within the AVE under either Build Alternative. Meanwhile, Alternative 3 would result in the removal of approximately 20 existing trees. Measure **VIS-1** would be implemented under both Build Alternatives to verify that the design avoids removing or negatively affecting visual resources, such as mature trees and shrub groupings, to the extent feasible. Vegetation temporarily disturbed during construction would be restored using native species, where feasible and appropriate, as determined by a qualified biologist in coordination with the landscape architect and agency-approved restoration or landscaping plans. If removal of mature trees cannot be avoided, additional landscape improvements would be incorporated into the final design for these areas, and the revegetated area would be larger than the impacted area to account for potential variability in restoration success. Under both Build Alternatives, I-405 would maintain its classification as a Classified Landscaped Freeway.

Additionally, Measure **VIS-2** would require a Hardscape Plan to be prepared that would implement attractive bridges, medians, retaining walls, sound barriers, and other aesthetic treatments for both Build Alternatives. Specific aesthetic treatments are to be decided during the final design phase. This plan would be consistent with the applicable goals and policies in the City's General Plan, as well as Caltrans' design standards, ensuring that the Build Alternatives would not conflict with regulations governing scenic quality. Impacts would be less than significant. No mitigation is required.

d) Less than Significant

Nighttime construction is anticipated for both Build Alternatives. The construction contractor would ensure temporary illumination and equipment do not interfere with public safety, in accordance with Caltrans Standard Specification 7-1.04. In accordance with Measure **AS-4**, night work would be avoided to the extent feasible and construction lighting would be directed downward. Once operational, new sources of light would be introduced to implement Complete Streets elements, such as conventional lighting under bridges for pedestrians and bicyclists, as well as highway signage. These new light fixtures would contribute positively to the safety of the AVE and emit levels of light consistent with the surrounding transportation elements.

The proposed improvements under the Build Alternatives would not be constructed of materials that could create glare. Measure **VIS-3** would require that a Lighting Plan be prepared to ensure lighting fixtures are selected and installed to minimize glare on adjacent properties and into the night sky. Measure **VIS-3** would also ensure lighting would be shielded with nonglare hoods and focused within State right-of-way. The lighting associated with the Build Alternatives is not anticipated to result in substantial light or glare impacts. Impacts would be less than significant. No mitigation is required.

3.7.2 Agriculture and Forestry 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 Department 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 the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

Question	CEQA 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, or a Williamson Act contract?	No Impact

Question	CEQA Determination
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

CEQA Significance Determinations for Agriculture and Forestry Resources

a), b), c), d), e) No Impact

There are no important farmlands (California Department of Conservation, n.d.), Williamson Act lands, forest lands (CDFW n.d.), or timberlands within or immediately adjacent to the Project Study Area. Therefore, there would be no impact.

3.7.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

Question	CEQA Determination
a) Conflict with or obstruct implementation of the applicable air quality plan?	Less Than Significant Impact
b) 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?	Less Than Significant Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	Less Than Significant Impact

Question	CEQA Determination
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less Than Significant Impact

CEQA Significance Determinations for Air Quality

a), b) Less than Significant

The Project Study Area is located in the SCAB and is within the jurisdiction of the SCAQMD and the California ARB. SCAQMD is the primary agency responsible for preparing the AQMP in cooperation with the SCAG, local governments, and the private sector. The 2022 AQMP provides the blueprint for meeting state and federal ambient air quality standards (SCAQMD 2022).

Caltrans Standard Special Provision 14-9.02 requires that the construction contractor comply with all applicable air-pollution-control rules, regulations, ordinances, and statutes (see Measure **AQ-1**). This includes project features to reduce dust and related air quality impacts from construction activities (see Measures **AQ-2** through **AQ-13**). Under Alternative 2, short-term construction emissions would generate up to approximately 4.16 lbs. per day of ROG, 4.02 lbs. per day of PM_{10}, 1.70 lbs. per day of $PM_{2.5}$, 52.80 lbs. per day of CO, and 34.65 lbs. per day of NOx (see Table 2.3.6-4 in Section 2.3, *Air Quality*). Alternative 3 would have less construction emissions than Alternative 2. Alternative 3 is estimated to emit approximately 0.67 lbs. per day of ROG, 0.87 lbs. per day of PM_{10}, 0.30 lbs. per day of $PM_{2.5}$, 9.42 lbs. per day of CO, and 5.48 lbs. per day of NOx. These increases in construction emissions would not be considered significant according to the SCAQMD significance thresholds (SCAQMD 2023). The Project is located within the Wilmington/Carson/Long Beach AB 617 Community. Measure **AQ-15** would be implemented, which requires offroad construction equipment to be outfitted with engines meeting Tier 4 emissions standards. With implementation of Measure **AQ-15**, emissions of criteria air contaminants would all be reduced, except for CO, which would be slightly increased under either Build Alternative (see Table 2.3.6-5 in Section 2.3, *Air Quality*). However, CO emissions would remain less than significant under both Build Alternatives (SCAQMD 2023).

Neither Build Alternative would impact operational traffic volumes, and operational emissions would be similar to the No-Build Alternative. Following construction, the Build Alternatives would result in lower CO, PM_{10}, $PM_{2.5}$, and NOx emissions in the Opening Year (2030) than existing (2024) conditions. In the Design Year (2050), the Build Alternatives would also result in lower CO, $PM_{2.5}$, and NOx emissions than existing conditions. Although the Build Alternatives would slightly increase PM_{10} in the Design Year compared to existing conditions (i.e., 20 lbs. per day), these operational impacts would be considered less than significant according to the SCAQMD significance thresholds (SCAQMD 2023).The Project is also included in SCAG's most recent RTP and FTIP (see Section 2.3.6, *Air Quality*) and conformity will be confirmed following selection of the preferred alternative. Therefore, the proposed Project would not conflict

with the Air Quality Management Plan (SCAQMD 2022), violate any air quality standard, result in a cumulatively considerable net increase of any criteria pollutant, or expose sensitive receptors to substantial pollutant concentrations, under either Build Alternative. Impacts would be less than significant. No mitigation is required.

c) Less Than Significant

Sensitive receptors relative to the Project Study Area are shown in Figure 2.3.6-3 and include Andrew Carnegie STEAM Academy, Victoria Golf Course, and residences. As discussed above, the Build Alternatives would result in temporary, short-term, construction-related increases in pollutant concentrations specifically associated with construction equipment emissions and fugitive dust. Implementation of SCAQMD Standard Conditions and Caltrans Standard Specifications (see Measure **AQ-1** through **AQ-13**), would control and minimize potential construction emissions. The Project Study Area is within an AB 617 Community. As discussed above in Response b), both Build Alternatives would implement Measure **AQ-15**, which requires offroad construction equipment to be outfitted with engines meeting Tier 4 emissions standards. As discussed in Responses a) and b), both Build Alternatives would slightly increase PM_{10} in the Design Year compared to existing conditions (i.e., 20 lbs. per day). This increase is due to forecasted truck VMT growth that would occur with or without the Project. These increases in operational emissions would not be considered significant according to the SCAQMD significance thresholds (SCAQMD 2023). Impacts would be less than significant. No mitigation is required.

d) Less Than Significant

The California ARB *Air Quality and Land Use Handbook* (California ARB 2023) identifies a list of the most common sources of odor complaints received by local air districts, which includes sewage treatment plants, landfills, recycling facilities, waste transfer stations, petroleum refineries, and other sources. The Project Study Area is located on a historic landfill. Both Build Alternatives could potentially result in temporary, short-term, construction-related increases in objectionable odors. Implementation of SCAQMD Standard Conditions and Caltrans Standard Specifications (see Measures **AQ-1** through **AQ-13**), would control and minimize potential construction emissions and objectionable odors. This includes compliance with SCAQMD Rule 402 during construction. Measures **HAZ-2**, **HAZ-4**, **AQ-14**, and **AQ-16** would be implemented, requiring site investigations and a NESHAP notification pending the results of ACM surveys. In addition, Project operation would not involve any odor-generating uses under either Build Alternative. Impacts would be less than significant. No mitigation is required.

3.7.4 Biological Resources

Would the project:

Question	CEQA Determination
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, U.S. Fish and Wildlife Service, or NOAA Fisheries?	Less Than Significant with Mitigation Incorporated
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Less Than Significant with Mitigation Incorporated
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Less Than Significant with Mitigation Incorporated
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?	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact

CEQA Significance Determinations for Biological Resources

a) Less Than Significant with Mitigation Incorporated

Special-Status Plant Species

Special-status plant species include CDFW Species of Special Concern or Watch List plants, USFWS candidate species, CNPS California Rare Plant Ranks Lists 1B, 2, and 3, and locally important taxa identified by the City or Los Angeles County. Based on the

habitat requirements and field survey results, the following special status plant species have the potential to occur in the BSA: lucky morning-glory (*Calystegia felix*), southern tarplant (*Centromadia parryi* ssp. *australis*), smooth tarplant (*Centromadia pungens ssp. laevis*), Sanford's arrowhead (*Sagittaria sanfordi*) and vernal barley (*Hordeum intercedens*). None of these species were observed during the biological surveys that were conducted for the proposed Project.

Alternative 2 would temporarily impact approximately 2.01 acres and permanently impact approximately 0.54 acres of suitable habitat for lucky morning-glory, southern tarplant, and Sanford's arrowhead. Alternative 3 would not impact suitable habitat for these species. Both Build Alternatives would temporarily impact approximately 2.47 acres of potentially suitable habitat for vernal barney and smooth tarplant. Alternative 2 and Alternative 3 would permanently impact approximately 0.19 acre and 0.11 acre of habitat potentially suitable for vernal barely and smooth tarplant, respectively. Prior to construction, rare plant surveys would be conducted during appropriate blooming periods per Measure **PS-1**. Should construction activities not be able to avoid special-status plants, Caltrans has determined that these impacts would be potentially significant under CEQA. In addition, construction would be conducted in accordance with Measure **NC-5**, which requires applying dust-control measures, such as watering active work areas, stabilizing unpaved routes, and covering stockpiles to reduce airborne dust and debris on vegetation Mitigation Measure **PS-2** would be implemented, requiring the preparation of a Relocation Plan and supplemental planting, if necessary. With implementation of Mitigation Measure **PS-2**, the Build Alternatives would not substantially adversely affect any special status plant species, either directly or through habitat modifications. Impacts on special-status plants would be less than significant with mitigation incorporated.

Special-Status Animal Species

This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the FESA or the CESA. The following special status animal species have the potential to occur in the BSA: American bumble bee (*Bombus pensylvanicus),* Southern California legless lizard *(Anniella stebbinsi*), western mastiff bat (*Eumops perotis*), and silver-haired bat. Refer to Response d) below for a discussion on migratory birds.

Construction activities, such as grading, excavation, vegetation removal, and operation of heavy equipment could result in direct and indirect impacts on special-status animal species within the BSA. Measure **AS-1** would require that vegetation removal be reduced to the extent feasible. All Build Alternatives would not impact Southern California legless lizard.

Alternative 2 would temporarily impact approximately 2.47 acres and permanently impact approximately 0.19 acre of suitable habitat for American bumble bee. Alternative 3 would temporarily impact approximately 2.47 acres and permanently impact approximately 0.11 acre of suitable habitat for American bumble bee. Indirect impacts from noise, dust, and vibration could also occur and reduce foraging activity

near construction zones. Caltrans has determined that these impacts would be potentially significant under CEQA. Both Build Alternatives would implement Mitigation Measures **AS-1** and **NC-2** to mitigate impacts on the American bumble bee. These measures include not using pesticides or insecticides and requiring that restoration areas include two native flowering species, such as coffeeberry (*Frangula californica*) and toyon (*Heteromeles arbutifolia*), where feasible.

Potential direct impacts on bats from the proposed Project include the physical alteration or removal of potential roosting habitat during bridge modification under Alternative 2 as well as construction-related noise, vibration, and artificial lighting during nighttime activities under both Build Alternatives. Measures **AS-2** and **AS-3** would be implemented to survey for bat roosts and colonies prior to construction and establish appropriate buffers if observed. In addition, Measure **AS-4** would require nightwork be limited, where feasible.

With implementation of Mitigation Measures **AS-1** and **NC-2**, the Build Alternatives would not substantially adversely affect any special status animal species, either directly or through habitat modifications. Impacts on special-status animals would be less than significant with mitigation incorporated.

Threatened and Endangered Species

Threatened and endangered species include federally listed species (endangered, threatened, and proposed) and state listed species (endangered, threatened, and candidate species).

The proposed Project would not directly impact any federally listed species under either Build Alternative. Although a monarch butterfly (federal proposed threatened species, *Danaus plexippus plexippus* pop. 1) was observed during the proposed Project's biological surveys, the species is not anticipated to roost within the BSA. Alternative 2 would temporarily impact 1.86 acres and permanently impact approximately 0.07 acre of suitable foraging habitat for monarch butterfly. Alternative 3 would temporarily impact 1.83 acres and permanently impact approximately 0.04 acre of suitable foraging habitat for monarch butterfly. Measure **TE-1** would require butterfly surveys prior to construction under both Build Alternatives. If the species is observed roosting in the BSA, Measure **TE-2** would require an appropriately sized buffer around the roost site. In addition, Measure **TE-3** would require Workers Environmental Awareness Training be conducted for all federally and state listed species.

The following state listed species have the potential to occur in the BSA: Crotch's bumble bee (*Bombus crotchii),* burrowing owl (*Athene cunicularia*), and Belding's savannah sparrow (*Passerculus sandwichensis beldingi*). The Project Study Area could provide suitable habitat for the Crotch's bumble bee. Alternative 2 would temporarily impact approximately 2.47 acres and permanently impact approximately 0.19 acre of suitable habitat for Crotch's bumble bee. Alternative 3 would temporarily impact approximately 2.47 acres and permanently impact approximately 0.11 acre of suitable habitat for Crotch's bumble bee. Further, small animal burrows were observed along the

existing path along the Dominguez Channel; these burrows are consistent with potential burrowing owl habitat and may also provide overwintering or roosting habitat for Crotch's bumble bee. However, work within the channel, under Alternative 2, would largely be conducted from the Dominguez Channel Bridge. If necessary, temporary access roads may be constructed along the bridge's abutment to access the channel under Alternative 2. Alternative 3 would not include any work within the Dominguez Channel. In accordance with Measure **TE-4,** initial ground and vegetation disturbance would be conducted between September 2 through February 28, which is outside the typical Crotch's bumble bee colony flight period if feasible. If work cannot be conducted outside the Crotch's bumble bee flight period, a qualified biologist would conduct a pre-construction survey and establish an appropriate avoidance buffer if the species is discovered (Measures **TE-5** and **TE-6**). Further, in accordance with Mitigation Measures **AS-1** and **NC-2**, both Build Alternatives would mitigate impacts to Crotch's bumble bee by not using pesticides or insecticides and requiring that restoration areas include two native flowering species, such as coffeeberry (*Frangula californica*) and toyon (*Heteromeles arbutifolia*), where feasible.

An open lot adjacent to Main Street could provide suitable habitat for burrowing owls. Both Build Alternatives would temporarily impact approximately 2.46 acres and permanently impact approximately 0.20 acre of suitable burrowing owl habitat. A qualified biologist would conduct a pre-construction survey for burrowing owls (Measure **TE-7**). If observed, the biologist would then establish an appropriate avoidance buffer (Measure **TE-8**).

Pickleweed Mats support foraging by Belding's Savannah sparrow provides seasonal cover for migrating shorebirds were observed during field surveys. Although Alternative 3 would not directly impact Pickleweed Mats, Alternative 2 would temporarily impact approximately 0.07 acre and permanently impact approximately 0.01 acre of suitable foraging habitat for Belding's savannah sparrow. Mitigation Measure **NC-11** requires mitigation on jurisdictional features and Pickleweed Mats at a minimum of a 1:1 ratio and include in purchase of in-lieu fees, mitigation bank credits, on-site replanting, or other measures deemed applicable by the regulatory.

With implementation of Mitigation Measures **AS-1**, **NC-2**, and **NC-11**, the Build Alternatives would not substantially adversely affect any state listed species, either directly or through habitat modifications. No take of state listed species is anticipated under either Build Alternative. Impacts on threatened and endangered species would be less than significant with mitigation incorporated.

b), c) Less Than Significant Impact with Mitigation Incorporated

Alternative 2 would require widening the Dominguez Channel Bridge. As detailed in the Wetlands section in Chapter 2, Alternative 2 would temporarily impact approximately 0.07 acre of federally protected wetlands and 2.08 acres of state protected wetlands (i.e., 2.01 acres of unvegetated streambed and 0.07 acre of Pickleweed Mat/riparian vegetation). Alternative 2 would also permanently impact approximately 0.01 acre of federally protected wetlands and 0.55 acre of state protected wetlands (i.e., 0.54 acre

unvegetated streambed and 0.01 acre of Pickleweed Mats/riparian vegetation). Measures **NC-1** through **NC-9** would avoid impacts on jurisdictional features and Pickleweed Mats. In addition, high-visibility fencing would be installed around Pickleweed Mats to prevent construction crews or equipment from entering the area (Measure **NC-10**). Mitigation Measure **NC-11** requires mitigation for impacts on jurisdictional features and Pickleweed Mats at a minimum of a 1:1 ratio and includes purchase of in-lieu fees, mitigation bank credits, on-site replanting, or other measures deemed applicable by the regulatory agencies. With implementation of the Mitigation Measure **NC-11**, the impacts on federally and state protected wetlands would be less than significant with mitigation incorporated under Alternative 2.

Alternative 3 would not directly impact state or federally protected wetlands. However, the proposed Project under Alternative 3 could result in temporary indirect impacts on the Del Amo Channel and associated Pickleweed Mats from dust generated from construction. Construction would be conducted in accordance with Measure **NC-5**, described in Section 2.4.1, *Natural Communities*, which requires applying dust-control measures, such as watering active work areas, stabilizing unpaved routes, and covering stockpiles to reduce indirect impacts such as airborne dust and debris on vegetation. Impacts on federally and state protected wetlands would be less than significant under Alternative 3. Mitigation is not required for Alternative 3.

d) No Impact

The proposed Project, under all Build Alternatives, would not affect any migratory wildlife corridors or the movement of any native resident or migratory fish or wildlife species. Pre-construction nesting bird surveys would be conducted in accordance with Caltrans Standard Specifications, see Project Features **PF-BIO-1** and **PF-BIO-2**. Implementation of either Alternative 2 or Alternative 3 would not impede the use of native wildlife nursery sites.

e) No Impact

The proposed Project, under all Build Alternatives, would not conflict with any local policies or ordinances protecting biological resources.

f) No Impact

There are currently no Habitat Conservation Plans or Natural Community Conservation Plans that overlap the Project Study Area. The proposed Project, under all Build Alternatives, would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.7.5 Cultural Resources

Would the project:

Question	CEQA Determination
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	Less Than Significant Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Less Than Significant Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	No Impact

CEQA Significance Determinations for Cultural Resources

a) Less Than Significant

Dominguez Channel Historic District is the only built environment cultural resource within the proposed Project's APE. The district was previously determined eligible for the NRHP and the CRHR. Alternative 2 would widen Bridge No. 53-1166 over the Dominguez Channel. Alternative 3 would not widen this bridge; however, there are temporary impact areas within the historic district.

Caltrans has determined that the proposed Project is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties described in 36 CFR Part 68 and no modifications or conditions are necessary. Therefore, neither Build Alternative would cause an adverse change in the significance of a historic resource. Impacts would be less than significant. No mitigation is required.

b) Less Than Significant

One previously recorded prehistoric archaeological resource was identified within the APE (CA-LAN-88/P-19-000088). Based on archaeological surveys of the APE, this resource appears to have been destroyed as a result of previous construction of the Dominguez Channel and I-405. No additional known archaeological resources were identified. The presence of extensive fill underlying I-405 and the previous degree of disturbance before and during construction of I-405 make it highly unlikely that previously unidentified cultural resources would be encountered during construction. In the event that previously unknown archaeological resources are encountered during construction, all Build Alternatives would stop all work within the vicinity of the discovery in accordance with Caltrans Standard Specification 14-2.03A (see Project Feature **PF-CUL-1**). Under both Build Alternatives, a monitoring plan would be developed during the PS&E phase with the three consulting tribes, which would identify tribal monitoring areas (Measure **CUL-1**).Therefore, the proposed Project would not cause an adverse

change in the significance of an archaeological resource. Impacts would be less than significant. No mitigation is required.

c) No Impact

No cemeteries or burial sites have been identified within the APE. In the event that previously unknown human remains are encountered during construction, both Build Alternatives would incorporate standard measures to stop all work within the vicinity of the discovery and contact the most likely descendant in accordance with Caltrans Standard Specification 14-2.03A and California H&SC Section 7050.5 (see Project Features **PF-CUL-1** and **PF-CUL-2**). Under both Build Alternatives, a monitoring plan would be developed during the PS&E phase with the three consulting tribes, which would identify tribal monitoring areas (Measure **CUL-1**). There would be no impact.

3.7.6 Energy

Would the project:

Question	CEQA Determination
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less Than Significant Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact

CEQA Significance Determinations for Energy

a) Less than Significant Impact

The proposed Project, under all Build Alternatives, would result in temporary fuel usage associated with construction vehicles and equipment. Fuel consumption during construction was calculated by converting CO_2 emissions predicted by the CalEEMod, version 2022. Gasoline, diesel, natural gas, and electricity, consumption during construction were converted to BTU using the heat content of each fuel. Alternative 2 and Alternative 3 would consume approximately 21,953 million BTU and 4,022 million BTU, respectively. The preparation of a TMP (Project Feature **PF-TR-1**) and implementation of Caltrans Standard Specification (see Project Feature **PF-EN-2**) would ensure that the proposed Project would not result in the wasteful, inefficient, or an unnecessary consumption of energy resources during construction under either Alternative 2 or Alternative 3. Further, Measures **ENR-1** through **ENR-4** would be implemented, which would further control energy use and consumption during construction under both Build Alternatives.

For operational impacts, vehicle fuel consumption was estimated based on vehicle types (e.g., automobiles, light-duty trucks) traveling within the Project Study Area using the EMFAC 2021 model. Gasoline, diesel, natural gas, and electricity were then converted to BTU using the heat content of each fuel. Operation of either Build Alternative under Opening Year and Design Year conditions would decrease direct energy use compared to existing conditions by 12 percent in the Opening Year and 21 percent by the Design Year (see Section 2.3.8, *Energy*). Therefore, the proposed Project would not result in the wasteful, inefficient, or an unnecessary consumption of energy resources during construction under either Alternative 2 or Alternative 3 during construction or operation. Impacts would be less than significant. No mitigation is required.

b) No Impact

SCAG serves as the metropolitan planning organization for the region. SCAG is required to prepare an RTP every four years that includes a SCS. The most recent RTP is *Connect SoCal 2024*, which was adopted on April 4, 2024 (SCAG 2024). The RTP focuses on the need to coordinate land use and transportation decisions to manage travel demand within the region to help meet state climate and air quality goals. Implementation of the RTP is also expected to reduce regional energy and water consumption, and lower household transportation costs.

The following *Connect SoCal 2024* goals target energy efficiency and alternative transportation:

- Support investments that are well-maintained and operated, coordinated, resilient and result in improved safety, improved air quality and minimized greenhouse gas emissions.
- Ensure that reliable, accessible, affordable and appealing travel options are readily available, while striving to enhance equity in the offerings in high-need communities.
- Integrate the region's development pattern and transportation network to improve air quality, reduce greenhouse gas emissions and enable more sustainable use of energy and water.

The following energy policies from the Circulation, Community Health and Environmental Justice, and Open Space and Environmental Conservation Elements of the City's General Plan, *Carson 2040 General Plan* (City of Carson 2023), are applicable to the transportation sector and proposed Project:

> CIR-G-1—Provide a balanced transportation system of multimodal networks providing a broad range of travel options to make transportation convenient, comfortable, and safe for people of all abilities.

CIR-G-1— Promote bicycling and walking, and support and improve connections to local and regional transit service.

CIR-G-3—Manage the transportation network to minimize roadway congestion, while balancing traffic LOS objectives with promoting reduction in vehicle miles traveled and considerations of community character and design.

CIR-P-22—Develop a TDM ordinance. A TDM ordinance would incorporate strategies appropriate for the local context and land use as different strategies are more effective at reducing employee commute trips, while others focus on reducing residential, shopping, or other discretionary trips. Strategies will generally focus on land use, parking, transit, and active transportation.

CIR-P-23—Pursue the implementation of TDM strategies through application of the City's Transportation Study Guidelines and compliance with SB 743 that seeks to reduce per capita VMT for residential, retail, and office trips.

CIR-P-24—Encourage local public agencies and employers to implement TDM policies that promote VMT reductions. The research in this area is regularly evolving and can help identify viable and defensible VMT reduction strategies.

Policy OSEC-G-19—Seek to reduce mobile sources of air pollution by creating denser and walkable neighborhoods, promoting transit-oriented development, and improving bicycle infrastructure, with the goal to reduce the number of miles traveled in cars and improve regional air quality.

Policy OSEC-P-44—Utilize incentives, regulations and implement the TDM requirements in cooperation with other jurisdictions to eliminate vehicle trips which would otherwise be made and to reduce vehicle miles traveled for automobile trips which still need to be made.

Policy OSEC-P-45—Require new developments to provide pedestrian and bicycle trails access to nearby shopping and employment centers, thereby encouraging alternate modes of transportation and reducing VMT.

Policy OSEC-P-51— Use the CAP as the City's primary strategy to reduce GHG emissions, including strategies related to land use and transportation, energy efficiency, solid waste, urban greening, and energy generation and storage.

Policy OSEC-P-56—To reduce transportation-related GHG emissions, promote active modes of transportation including transit, bicycling, and walking by providing infrastructure that supports each of these networks, such as adding or expanding bicycle lanes, exploring use of sidewalk bulb outs, increasing bus service frequency, and exploring multi-modal connectivity between these types of transportation.

In 2017, the City adopted a CAP developed through the SBCCOG that outlines the City's strategy for meeting its 2035 and 2050 GHG reduction targets (City of Carson

2017). The CAP includes measures that encourage energy efficiency and renewable energy, expand alternative transportation options, and support increased penetration of zero-emission vehicles throughout the City. One such goal includes Measure EE: I1, which calls for the retrofit of traffic signals and outdoor lighting within the City to LED.

At a broad level, the regulatory context for energy resources targets energy efficiency (i.e., using less energy for the same amount of power) and renewable resources (i.e., reducing consumption of non-renewable resources, such as fossil fuels). Energy-efficient projects that incorporate conservation measures facilitate long-term energy planning and avoid the need for unplanned or additional energy capacity. Projects that support renewable energy, either directly (e.g., installing electric vehicle chargers, shifting the mode of travel to active forms of transportation) or indirectly (by complying with state and local renewable standards), reduce consumption of nonrenewable resources and accelerate statewide decarbonization efforts.

Several freeway mainline segments as well as freeway/ramp junctions within the I-405 corridor between Wilmington Avenue and Main Street show heavy congestion due to weaving movements during peak periods. Nonstandard interchange spacing and turbulence at the ramp entrances and exits further contribute to operational deficiencies. However, the proposed Project would improve travel time reliability and safety along I-405 for all users in the corridor by improving freeway operations. The Complete Streets and TSM and TDM elements incorporated into the design of the Build Alternatives would further provide equitable, accessible, and sustainable travel options to the regional transportation system through improvements to safety, mobility, accessibility, and connectivity. The proposed Project design is therefore consistent with energy regulations and policies promoting energy efficiency and renewable energy.

The indirect energy expenditure required for construction of either Build Alternative would be necessary to achieve the direct energy benefits discussed above. While indirect energy would be consumed during construction, Measures **ENR-1** through **ENR-4** would be implemented to conserve energy and reduce diesel fuel consumption. In addition, Measure **AQ-15** would require the use of Tier 4 equipment, which would further reduce energy consumption. Future maintenance equipment would use renewable diesel, consistent with the state's In-Use Regulation. Any replaced streetlights and traffic signals would use LED fixtures, thus achieving operational improvements in energy efficiency. The proposed Project design and indirect energy conservation features are therefore consistent with energy regulations and policies promoting energy efficiency and renewable energy. There would be no impact.

3.7.7 Geology and Soils

Would the project:

Question	CEQA Determination
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	Less Than Significant Impact
ii) Strong seismic ground shaking?	Less Than Significant Impact
iii) Seismic-related ground failure, including liquefaction?	Less Than Significant Impact
iv) Landslides?	Less Than Significant Impact
b) Result in substantial soil erosion or the loss of topsoil?	Less Than Significant Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Less Than Significant Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	Less Than Significant Impact
e) 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?	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less Than Significant Impact

CEQA Significance Determinations for Geology and Soils

a) Less Than Significant Impact

As discussed in Section 2.3.3, *Geology/Soils/Seismic/Topography*, the Project Study Area is not located within an Alquist-Priolo Earthquake Fault Zone or within 1,000 feet of any unzoned Holocene or younger-aged fault. The nearest Alquist-Priolo Earthquake Fault Zones are two Newport-Inglewood Fault Zones located approximately 2 miles north and east of the Project Study Area, which may have a maximum 7.2 earthquake (Geo-Advantec, Inc. 2025).

The Project Study Area is located within a seismically active region subject to future seismic ground shaking from earthquakes occurring along regional and local faults. Although strong ground shaking is expected along the Project Study Area from nearby earthquake sources, the Preliminary Geotechnical Design Report (Geo-Advantec, Inc. 2025) prepared for the proposed Project determined that the proposed Project is not considered susceptible to surface fault rupture hazards.

Most of the Project Study Area is located within a mapped liquefaction zone. Lateral spreading occurs when the underlying soils are liquefied and the ground displaces laterally on gently sloping topography, such as a riverbank. Although the Project Study Area is susceptible to liquefaction, due to the relatively flat topographic and deep depths of liquefiable layers, lateral spreading is not expected within the Project Study Area.

The topography of the Project Study Area is relatively flat and is not located within a mapped landslide seismic hazard zone. The existing embankments presumably were constructed following the Caltrans Standard Specifications, and do not appear to exhibit any distress from settlement or stability problems. Therefore, landslides are not considered to be a potential hazard to the Project Study Area.

Requirements for site-specific geotechnical investigations and preparation of a final design-level geotechnical report during final design (PS&E) (see Measure **GEO-1)** along with adherence to applicable federal, state, and local seismic codes and Caltrans seismic design criteria for structures would be sufficient to avoid and/or minimize potential impacts related to geological/seismic hazards, such as liquefaction potential, lateral spreading, and seismic-induced settlement. Impacts would be less than significant. No mitigation is required.

b) Less Than Significant Impact

Under all Build Alternatives, construction activities would temporarily disturb soil and vegetation within the Project Study Area, primarily in trample zones around work areas, heavy equipment traffic areas, and material laydown areas. Temporary impacts would include soil compaction and increased potential of soil erosion due to soil exposure. During a storm event, soil erosion could occur at an accelerated rate. The proposed Project, under both Build Alternatives, would be designed to minimize slope failure, settlement, and erosion. Standard measures would be implemented that require adherence to the requirements of the CGP, which would include implementation of

erosion and sediment control BMP pursuant to a SWPPP (see Project Features **PF-WQ-1** through **PF-WQ-13**). Typical measures that could be implemented include the application of soil stabilizers, such as soil binders, rock slope protection, velocity dissipation devices, and flared end sections for culverts. Impacts would be less than significant. No mitigation is required.

c) Less Than Significant Impact

As discussed, the Project Study Area is within a seismic area and known liquefaction zone. However, although the Project Study Area is susceptible to liquefaction, due to the relatively flat topographic and deep depths of liquefiable layers, lateral spreading is not expected within the Project Study Area. Additionally, landslides are not considered to be a potential hazard to the Project Study Area. Construction activities associated with all Build Alternatives could be affected by liquefaction if an earthquake event were to occur during construction. However, implementation of safe construction practices and compliance with Caltrans and Cal-OSHA requirements would reduce potential impacts of these conditions. As detailed in Measure **GEO-1**, a final design-level geotechnical report would be prepared, which would further evaluate soil and groundwater conditions to support the final design. The report would include all appropriate best management practices to reduce geological/seismic hazards, including liquefaction potential and lateral spreading. Impacts would be less than significant. No mitigation is required.

d) Less Than Significant Impact

Expansive soils generally result from specific clay minerals that have the capacity to undergo substantial volume change (shrink or swell) based on changes in moisture content. The change in volume of expansive soil may cause excessive cracking and heaving of structures with shallow foundations, concrete slabs, or pavements supported on these materials. Subsurface soils within the Project Study Area generally consist of artificial fill, primarily composed of silty sand, and alluvium, which consists of clay and silt in the upper layers and sand at deeper depths and are generally expected to be non-expansive or exhibit low to medium expansion potential due to the presence of both cohesive and cohesionless soil. As detailed in Measure **GEO-1**, a final design-level geotechnical report would be prepared, which would further evaluate expansive and potentially corrosive soils. The report would include best management practices regarding construction procedures and/or design criteria to reduce the effect of these soils on development of the proposed Project. Impacts would be less than significant. No mitigation is required.

e) No Impact

No septic or alternative waste treatment systems would be required as part of the proposed Project and it would not generate sewer demand. There would be no impact.

f) Less Than Significant Impact

No unique paleontological resources or sites that meet the criteria for scientific significance have been identified within the Project Study Area. However, as discussed in Section 2.3.3, *Geology/Soils/Seismic/Topography*, there is high potential for paleontological resources within the Project Study Area due to the presence of Quaternary young alluvial fan and valley deposits (*Qyf*) and Quaternary older axial channel deposits (*Qoa*). Excavations for the tie-back wall are anticipated to be 15 feet bgs, potentially impacting paleontologically sensitive sediments (Qoa) dating to the Pleistocene Epoch. Under both Build Alternatives, a qualified principal paleontologist would prepare a standard Paleontological Mitigation Plan prior to construction (see Measure **PAL-1)**. In accordance with Caltrans Standard Specification 14-7.03, contactors would be required to stop work within a 60-foot radius of discovery if paleontological resources are encountered during construction. However, the construction of complete streets elements would not require monitoring because the depth of anticipated ground disturbance (up to 3 feet bgs) is not deep enough to potentially impact paleontological resources. In addition, boring and drilling operations would not require monitoring. Upon completion of construction, a Paleontological Mitigation Report would be prepared. Under either Build Alternative, operational activities would not require additional earth-moving activities. Impacts would be less than significant. Mitigation is not required.

3.7.8 Greenhouse Gas Emissions

Would the project:

Question	CEQA Determination
a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?	Less Than Significant Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?	Less Than Significant Impact

CEQA Significance Determinations for GHG Emissions

a) Less Than Significant

GHG emissions associated with Build Alternatives in both the Opening Year and Design Year are projected to be lower than existing conditions, and the Build Alternatives emissions are not expected to exceed those of the No-Build Alternative in either analysis year. The proposed Project includes several standardized measures, identified as Project design features, that would help reduce GHG emissions during construction under both Build Alternatives (see, Section 3.3, *Climate Change*). In accordance with

Caltrans' interim guidance (Caltrans 2019), impacts would be less than significant. No mitigation is required.

b) Less Than Significant

The proposed Project is included in SCAG 2024–2050 RTP/SCS under Project ID LA9918955, aligning with the plan's objective to reduce transportation sector GHG emissions. Adding auxiliary lanes in both directions along I-405 within the Project Study Area under Alternative 2 aims to improve freeway operations that would reduce congestion-related emissions. The inclusion of Complete Streets elements, such as enhanced pedestrian and bicycle facilities under both Build Alternatives would further support a shift towards active transportation modes, offering safer and more accessible alternatives to single-occupancy vehicle use. These improvements advance SCAG's SB 375 goals by reducing vehicle-related GHG emissions through enhanced efficiency and mode diversification. The proposed Project would not conflict with any applicable plan, policy, or regulation aimed at reducing GHG emissions under either Build Alternative. In accordance with Caltrans' interim guidance (Caltrans 2019), impacts would be less than significant. No mitigation is required.

3.7.9 Hazards and Hazardous Materials

Would the project:

Question	CEQA Determination
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less Than Significant Impact
b) 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?	Less Than Significant Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less Than Significant Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	Less Than Significant Impact

Question	CEQA Determination
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two nautical miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No Impact

CEQA Significance Determinations for Hazards and Hazardous Materials

a), b), c), d) Less Than Significant

As discussed in Section 2.3.5, *Hazardous Materials,* all Build Alternatives would require the use of hazardous materials and would be anticipated to generate hazardous waste during construction and routine maintenance activities. Construction and routine maintenance activities would follow all applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous waste and materials. Examples of hazardous materials likely to be used during construction, under all Build Alternatives, include lubricants (both grease and oils), petroleum fuels, cleaning solvents, and paints.

Although there are no schools within the Project Study Area, there is one school located within 0.25 mile of the Project Study Area. Carnegie Middle School is located 550 feet southwest of the Project Study Area at 21820 Bonita Street. No other schools are located within 0.25 miles of the Project Study Area.

The Project Study Area is located on and/or within the immediate vicinity of a site enumerated under Section 65962.5 of the Government Code (“Cortese” list). The proposed Project’s ISA identified the following RECs for both Build Alternatives (Kroner Environmental Services, Inc. 2024):

- Former Bkk Landfill
- Former Cal Compact landfill
- Dominguez Channel
- Current and former buried hazardous material and liquid waste pipelines crossing the ROW at uncertain locations

Contaminated groundwater and soil could be encountered due to these RECs as well as other environmental conditions that do not rise to the level of RECs that have also been identified at various distances outside the Project Study Area as described further in Section 2.3.5, *Hazardous Waste/Materials* and the proposed Project's ISA (Kroner Environmental Services, Inc. 2024). ADL may also be encountered under either Build Alternative. Yellow traffic striping, pavement markings, and treated wood would also be disturbed during construction activities.

Alternative 2 would include bridge widening. Structural work could potentially disturb ACM and/or LBP. In addition, the Dominguez Channel was known to receive industrial waste during the Twentieth Century. Therefore, there is a strong likelihood of legacy contamination in channel sediment and in soil, soil vapor, and groundwater being encountered under Alternative 2.

There are standard regulations and Caltrans policies (avoidance and minimization measures) that must be followed with respect to the use, storage, handling, disposal, and transport of potentially hazardous waste and materials during construction and routine maintenance activities. Both Build Alternatives would implement the standard project features identified in Section 1.4, *Project Alternatives*, as well as Measures **HAZ-1** through **HAZ-5**, which require further testing and proper handling of hazardous waste and materials during construction. Impacts would be less than significant. Mitigation is not required.

e) No Impact

The nearest airport is the Long Beach Airport, which is over 4 miles from the Project Study Area. The Los Angeles County Airport Land Use Plan was adopted on December 19, 1991 (Airport Land Use Commission 1991). The proposed Project would not result in a safety hazard or excessive noise for people residing or working in the Project area due to its distance from an airport. There would be no impact.

f) Less Than Significant

The City adopted an Emergency Operations Plan in March 2022 (City of Carson 2021). Under all Build Alternatives, ramp and overnight freeway lane closures would be required. Traffic delays are expected during Project construction. Therefore, emergency services would potentially experience temporary impacts due to disruptions to local circulation and connectivity during construction, which could delay response times. No long-term ramp closures are anticipated. Per Caltrans standard procedures, a TMP would be prepared (Project Feature **PF-TR-1**) and local emergency service providers would be notified of any ramp or lane closures and provided detour plans at least two weeks in advance (Project Feature **PF-UT-2**). Continuous vehicular access and connectivity would be maintained throughout construction. These impacts are considered less than significant. No mitigation is required.

g) No Impact

The proposed Project is located in an urbanized area surrounded by existing commercial, industrial, and residential development. The Project Study Area is not located within or near a very high, high, or moderate fire hazard zone (CAL FIRE n.d.). There would be no impact.

3.7.10 Hydrology and Water Quality

Would the project:

Question	CEQA Determination
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Less Than Significant Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in substantial erosion or siltation on- or off-site;	Less Than Significant Impact
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	Less Than Significant Impact
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	Less Than Significant Impact
(iv) impede or redirect flood flows?	Less Than Significant Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Less Than Significant Impact

Question	CEQA Determination
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No Impact

CEQA Significance Determinations for Hydrology and Water Quality

a) Less Than Significant

Under both Build Alternatives, excavated soil would be exposed and there would be an increased potential for soil erosion compared to existing conditions during construction. In addition, chemicals, liquid products, petroleum products (such as paints, solvents, and fuels), and concrete-related waste may be spilled or leaked during construction with the potential to be transported via storm water runoff into receiving waters. Alternative 2 would require work within the Dominguez Channel for widening the Dominguez Channel Bridge (Bridge No. 53-1166). The construction contractor would be required to prepare a SWPPP and implement BMP for both Build Alternatives in accordance with Caltrans BMP Manual and the NPDES CGP as specified within Project Features **PF-WQ-1** through **PF-WQ-13**.

Following construction of either Build Alternative, pollutants of concern of a transportation facility include sediment/turbidity, nutrients, organic compounds, trash and debris, oxygen-demanding substances, bacteria and viruses, oil and grease, pesticides, and metals could be released. These pollutants could also be discharged into the Dominguez Channel in storm water runoff as a result of incidental drippings from vehicles, and accidental spills during maintenance activities, such as bridge painting and surface treatments.

Alternative 2 would result in an increase of 7.43 acres of net new impervious surface area, as well as 9.05 acres of replaced impervious surface area. Alternative 3 would result in an increase of 5.33 acres of net new impervious surface area, as well as 3.30 acres of replaced impervious surface area. Both Build Alternatives would improve drainage systems within the Project Study Area, including new storm drains and inlets, relocation, and modification of existing facilities, biofiltration swales, media filters, Design Pollution Prevention Infiltration Areas, and extension of existing crossing culverts. The post construction treatment area for both Build Alternatives would total 18.01 acres, which would be equal to or greater than the amount of net new impervious surface area under either Build Alternative. These impacts are considered less than significant. No mitigation is required.

b) No Impact

Based on historic data, groundwater depth is anticipated to range from 25 to 35 feet below ground surface near Dominguez Channel Bridge (Geo-Advantec 2025). Any groundwater encountered during construction of either Build Alternative is anticipated to be minimal and dewatering is not likely to be necessary. Additionally, the proposed

Project would not decrease groundwater supplies or interfere with groundwater recharge. A dewatering permit is not anticipated to be required for either Build Alternative. There would be no impact.

c) Less Than Significant

As discussed above in Response a), both Build Alternatives would be required to comply with the NPDES CGP and develop a SWPPP to address all potential sources of pollution, which may affect water quality including sediment erosion during construction. Following construction, the area drainage patterns are anticipated to be similar to existing conditions, with only minor modifications to accommodate bridge and road widening. Although all Build Alternatives would increase net new impervious surface area; however, post-construction treatment areas would be implemented offsetting any additional impervious surface area.

Where the existing I-405 bridge crosses Dominguez Channel, I-405 is within a Zone A floodplain, as indicated on the FEMA Flood Insurance Rate Map (FIRM) 06037C1955F dated September 26, 2008. Although Alternative 3 would not include any construction activities or improvements within a designated 100-year floodplain, Alternative 2 proposes to widen the Dominguez Channel Bridge. This would include the temporary use of construction equipment, vehicles, and materials within the 100-year floodplain and the construction of temporary bridge supports during construction. Water surface elevation would increase by 0.01 foot under Alternative 2 compared to existing condition for approximately 10,000 feet within the channel (HDR 2025). This minor rise would not impede or redirect flood flows. A Floodplain Encroachment Permit would be sought from the Los Angeles County Flood Control District for work conducted within the Dominguez Channel prior to construction (Project Feature **PF-BR-7**).

Neither Alternative 2 nor Alternative 3 would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces. Impacts are considered less than significant. No mitigation is required.

d) Less Than Significant

The Project Study Area is located outside a designated Tsunami Hazard Area (State of California 2021). Although there could be a risk for seiches (i.e., oscillations in enclosed bodies of water caused by seismic waves) in the Dominguez Channel, neither Alternative 2 nor Alternative 3 would increase this risk. As discussed in Response c), the proposed Project is within a flood hazard area; however, a SWPPP and BMPs would be implemented during construction. Although the additional impervious surface area could increase storm flows, post construction treatment areas would be installed throughout the Project Study Area. Impacts are considered less than significant. No mitigation is required.

e) No Impact

As previously discussed in Section 2.3.2, *Water Quality and Storm Water Runoff,* and above in Responses a) and b), all Build Alternatives would be designed and implemented consistent with the federal, state, and local water quality control plans and groundwater management plans.

3.7.11 Land Use and Planning

Would the project:

Question	CEQA Determination
a) Physically divide an established community?	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No Impact

CEQA Significance Determinations for Land Use and Planning

a) No Impact

None of the Build Alternatives would physically divide an established community. All work would be within City and Caltrans ROW, with the exception of work within the Dominguez Channel. No residences or businesses would be displaced (see Section 2.2.5, *Relocations and Real Property Acquisitions*). There would be no impact.

b) No Impact

As discussed further in Section 2.2.2, *Consistency with Federal, State, Tribal, Regional, and Local Plans and Programs*, neither Build Alternative would conflict with any applicable land use plan, policy, or regulation. There would be no impact.

3.7.12 Mineral Resources

Would the project:

Question	CEQA Determination
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?	No Impact

Question	CEQA Determination
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?	No Impact

CEQA Significance Determinations for Mineral Resources

a), b) No Impact

The CGS Map of Aggregate Sustainability in California (CGS 2018) does not identify mineral resources within the Project Study Area. Mineral resources are also not identified in Project Study Area per the *Carson 2040 General Plan* (City of Carson 2023). Neither Build Alternative would result in the loss of availability of any known mineral resources or of a mineral resource recovery site. There would be no impact.

3.7.13 Noise

Would the project result in:

Question	CEQA Determination
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Less Than Significant Impact
b) Generation of excessive groundborne vibration or groundborne noise levels?	Less Than Significant Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two nautical miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact

CEQA Significance Determinations for Noise

a) Less than Significant

The primary sources of noise in the Project Study Area include traffic along I-405 and on local roadways, including Wilmington Avenue and Carson Street. Noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Nighttime construction is anticipated under both Build

Alternatives. Construction equipment is expected to generate noise levels ranging from 80 to 85 dB at a distance of 50 feet; noise produced by construction equipment would decrease over distance at a rate of approximately 6 dB per doubling of distance. Under all Build Alternatives, construction noise would be short-term and intermittent. The project includes several standard measures that would minimize noise impacts, including requirements to use alternative warning methods (Project Feature **PF-NOI-1**), use properly muffled equipment (Project Features **PF-NOI-2** and **PF-NOI-3**), place and orientate stationary equipment away from sensitive receptors (Project Feature **PF-NOI-4**), and site construction staging and maintenance areas away from noise-sensitive uses (Project Feature **PF-NOI-5**), where feasible. In addition, Measure **NOI-1** would be implemented requiring the preparation of noise control plan and limiting pile driving to daytime hours.

As discussed in Section 2.3.7, *Noise*, existing noise levels range from 37 to 77 dBA L_{eq}(h). Predicted noise levels at all analyzed receivers would be similar with or without the proposed Project compared to the No-Build Alternative and existing conditions. Noise levels under Alternative 2 would change by approximately -2 to 2 dBA at modeled receivers. A 3 dB change is the lowest noise level that is perceptible by the average human ear in an outdoor environment. Meanwhile, Alternative 3 would not generate additional vehicles. Therefore, the proposed Project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in any local general plan, noise ordinance, or other applicable standard under either Build Alternative. Impacts would be less than significant. No mitigation is required. However, as discussed in Section 2.3.7, noise abatement is being considered in the form of sound barriers per federal requirements under NEPA/23 CFR 772.

b) Less than Significant

During construction, all Build Alternatives could generate groundborne vibration or noise. As discussed in Response a), construction activities would be controlled by adherence to Caltrans' noise and vibration standards. As described in Section 2.3.7, *Noise*, all Build Alternatives would implement standard Project Features **PF-NOI-1** through **PF-NOI-5**. Impacts would be less than significant. No mitigation is required.

c) No Impact

The Project Design Footprint is not located within the vicinity of a private airstrip or within two miles of a public airport or public use airport. The nearest airport is the Long Beach Airport, which is over 4 miles from the Project Study Area. The Los Angeles County Airport Land Use Plan was adopted on December 19, 1991 (Airport Land Use Commission 1991). The Project Study Area is not within the Long Beach Airport's influence area. There would be no impact.

3.7.14 Population and Housing

Would the project:

Question	CEQA Determination
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact

CEQA Significance Determinations for Population and Housing

a) No Impact

As discussed in Section 2.2.3, *Growth*, neither Build Alternative would provide new access to surrounding areas that could induce additional development and growth beyond what is already planned by the City. The Build Alternatives would support the circulation needs of existing and planned developments. Therefore, substantial unplanned population growth is not anticipated under either Build Alternative. There would be no impact.

b) No Impact

As described further in Section 2.2.5, *Relocations and Real Property Acquisitions*, neither Build Alternative would result in any residential or business relocations. Therefore, the Build Alternatives would not displace existing people or housing, necessitating the construction of replacement housing elsewhere. There would be no impact.

3.7.15 Public Services

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

Question	CEQA Determination
a) Fire protection?	Less Than Significant Impact

Question	CEQA Determination
b) Police protection?	Less Than Significant Impact
c) Schools?	No Impact
d) Parks?	No Impact
e) Other public facilities?	No Impact

CEQA Significance Determinations for Public Services

a), b) Less Than Significant

As discussed in Section 2.2.6, *Utilities/Emergency Services*, the Community Impact Resource Study Area includes one law enforcement station and one fire station. There are no medical facilities within the Community Impact Resource Study Area. Neither Build Alternative would require the acquisition or displacement of emergency service facilities. However, emergency access may be temporarily affected by detours associated with temporary freeway mainline and ramp closures which would require emergency service providers to use different routes. Traffic detours for ramp closures would be required for overnight or extended weekend closures but no consecutive ramps would be closed simultaneously to further minimize impacts on motorists (e.g., work hazards, traffic delays, motorist distractions). Detour routes would be provided so that access for emergency services is maintained. A TMP would be implemented and would identify alternate routes, detours, and access points for motorists. In addition, prior to construction, coordination would be conducted with local emergency service providers and the surrounding community to minimize service delays and disruptions during construction under both Build Alternatives (see Measures **PF-2** and **PF-3**). Operation of the proposed Project would not facilitate the need for increased fire or police protection services under either Build Alternative. Therefore, operation of either Build Alternative would not result in substantial adverse physical impacts associated with fire or police protection services. Impacts would be less than significant. No mitigation is required.

c), e) Less Than Significant

As discussed in Section 2.2.4, *Community Character and Cohesion*, there is one educational facility within the Community Impact Resource Study Area, Carnegie Middle School, which is approximately 550 feet southwest of the Project Study Area. Access to the school and other public facilities may be temporarily affected due to increased congestion caused by detours associated with temporary freeway mainline and ramp closures. Traffic detours for ramp closures would occur at ramps for either overnight or extended weekends closures. A TMP would be implemented and would identify alternate routes, detours, and access points for motorists. No consecutive ramps would be closed simultaneously. Prior to construction, schools and other public facilities would

be notified to ensure access is maintained at all times during construction (see Project Feature **PF-TR-1**). Following construction of either Build Alternative, I-405 and local roads would return to existing or better conditions and access to community facilities would be fully restored. Therefore, no adverse impact on schools or other public facilities would result from construction or operation of the proposed Project under either Build Alternative. Impacts would be less than significant. No mitigation is required.

d) No Impact

The nearest parks to the Project Study Area are Perry Mini-Street Park and Calas Park, located approximately 0.15 and 0.17 mile from the Project Study Area, respectively. All Build Alternatives accommodate growth and would not increase the use of existing parks such that new or physically altered parks would be necessary. There would be no impact.

3.7.16 Recreation

Question	CEQA Determination
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact

CEQA Significance Determinations for Recreation

a), b) No Impact

The nearest recreational facilities to the proposed Project include Perry Mini-Street Park and Calas Park, which are located approximately 0.15 and 0.17 mile from the Project Study Area, respectively. Due to these distances and intervening topography, these parks would not be directly affected. All Build Alternatives would accommodate growth but would not increase the use of existing parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated. Access to recreational facilities would be maintained. Additionally, neither Build Alternatives would include recreational facilities or require the construction or expansion of recreational facilities. There would be no impact.

3.7.17 Transportation

Would the project:

Question	CEQA Determination
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	No Impact
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No Impact
d) Result in inadequate emergency access?	Less Than Significant Impact

CEQA Significance Determinations for Transportation

a) No Impact

As discussed in Section 2.2.2, *Consistency with Federal, State, Tribal, Regional, and Local Plans and Programs*, neither Build Alternative would conflict with a program, plan, ordinance, or policy addressing the circulation system. Both Build Alternatives would result in beneficial impacts related to traffic congestion, connectivity, and mobility in the Project Study Area, and provide Complete Street elements at local interchanges where limited facilities currently exist. There would be no impact.

b) No Impact

As discussed in Section 3.4, *Senate Bill 743/Induced Demand Analysis*, Caltrans has screened the proposed Project from requiring VMT modeling or mitigation in accordance with the TAC (Caltrans 2025). There would be no impact.

c) No Impact

Both Build Alternatives would result in beneficial impacts related to traffic congestion, connectivity, and mobility in the Project Design Footprint, and would provide sidewalks, crosswalks, ADA-compliant curb ramps, and wider shoulders where limited facilities currently exist. Both Build Alternatives would also be subject to Caltrans review for consistency with safety standards (such as the Highway Design Manual) to ensure that no hazardous design features would occur. There would be no impact.

d) Less than Significant

Ramp and lane closures are anticipated for the construction phase of the proposed Project under both Build Alternatives. As discussed in Section 2.1.9, *Transportation*, construction-related detours and lane closures would occur for staging, equipment moving, grading, and restriping. Temporary detours and closures would be limited to nonpeak travel hours, where feasible. No long-term ramp closures are anticipated under either Build Alternative. Per Caltrans standard procedures, a TMP would be prepared (Project Feature **PF-TR-1**) and local emergency service providers would be notified of any ramp or lane closures and provided detour plans at least 2 weeks in advance (Project Feature **PF-UT-2**). Continuous vehicular access and connectivity would be maintained throughout construction. These impacts are considered less than significant. No mitigation is required.

3.7.18 Tribal Cultural Resources

Would the project 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:

Question	CEQA Determination
a) 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	Less Than Significant Impact
b) 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.	Less Than Significant Impact

CEQA Significance Determinations for Tribal Cultural Resources

a), b) Less than Significant

As discussed further in Section 4.3, *Tribal Entities*, the NAHC indicated negative results for the APE within the Sacred Lands File. The NAHC identified 9 groups represented by 18 individuals with connections to the area. Letters were sent to these tribal entities on August 26, 2024, and follow-up emails were sent on September 21, 2024. A summary

of responses is provided in Section 4.3. The following tribal entities requested consultation under AB 52 and Section 106 of the NHPA for the proposed Project: Gabrieleño Band of Mission Indians – Kizh Nation, Gabrieleño/Tongva San Gabriel Band of Mission Indians, and Gabrielino Tongva Indians of California Tribal.

No tribal cultural resources have been identified within the APE. The possibility exists that previously unknown buried resources could be discovered during construction. Should archaeological resources or human remains be discovered during construction of either Build Alternative, all work would stop within the vicinity of the discovery in accordance with Caltrans Standard Specification 14-2.03A (see Project Features **PF-CUL-1** and **PF-CUL-2**). In addition, the construction contractor would be required to receive cultural sensitivity training in accordance with Caltrans Standard Specification 14-2.03C. Under both Build Alternatives, a monitoring plan would be developed during the PS&E phase with the three consulting tribes, which would identify tribal monitoring areas (Measure **CUL-1**). Impacts would be considered less than significant. No mitigation is required.

3.7.19 Utilities and Service Systems

Would the project:

Question	CEQA Determination
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less Than Significant Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No Impact
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less Than Significant Impact

Question	CEQA Determination
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less Than Significant Impact

CEQA Significance Determinations for Utilities and Service Systems

a) Less than Significant

Under both Build Alternatives, the proposed Project is limited to transportation improvements, which involves the construction of auxiliary lanes and the implementation of TSM/TDM and Complete Streets elements. Neither Build Alternative would be considered growth inducing. Both Build Alternatives would upgrade existing drainage facilities and develop on-site runoff treatment areas within Caltrans ROW. Following completion of construction, there is some potential for permanent water quality impacts to result from operation and maintenance activities, such as highway maintenance and inspections. Permanent impacts involve increased impervious areas, alterations in drainage patterns on roadways, long-term discharges of sediment and other pollutants collected in stormwater, and polluted surface runoff. As discussed in Section 3.2.10, *Hydrology and Water Quality*, permanent BMPs would be implemented to address potential impacts to water quality.

As described further in Section 2.2.6, *Utilities and Emergency Services*, neither Build Alternative would involve the construction of new utility facilities; however, relocation, protection in place, removal, or abandonment of existing facilities may be required during construction. Additional coordination with utility owners would occur during the PS&E phase to ensure utilities are accurately identified in the final design as well as the Office of the State Fire Marshal (Measure **UTIL-2**). Further, Underground Service Alert (i.e., DigAlert) would be notified at least two days prior to ground-disturbing activities to enable all utility owners within the proposed Project's disturbance limits to identify the locations of known underground transmission lines and facilities (see Project Feature **PF-HW-4**). Impacts would be considered less than significant. No mitigation is required.

b) No Impact

The proposed Project is limited to transportation improvements. Neither Build Alternative would construct new residential or non-residential structures or induce population or employment growth. The Build Alternatives would not require any water or sewer service during operation that would increase the need for new infrastructure. There would be no impact.

c) No Impact

The proposed Project is limited to transportation improvements. Under either Build Alternative, the proposed Project would not increase the demand for wastewater treatment or affect capacity of wastewater treatment facilities. There would be no impact.

d) Less than Significant

Under either Build Alternative, the proposed Project would generate solid waste during construction and maintenance activities. As described further in Section 2.2.6, *Utilities/Emergency Services*, remnant construction waste that is not redirected from the waste stream would be disposed of in the Calabasas Landfill, nearby landfills, or a materials recovery facility. In accordance with Caltrans Standard Specification 14-10, the construction contractor would be required to recycle all non-hazardous waste and excess material, if practicable, and prepare a Solid Waste Disposal and Recycling Report. This report would identify the types and amounts of project-generated solid waste taken to or diverted from landfills or reused for the proposed Project. Based on the California Waste Management Board data, Calabasas Landfill would have sufficient permitted capacity to accommodate solid waste disposal needs of both Build Alternatives (see Section 2.2.6, *Utilities/Emergency Services*). If the daily capacity is exceeded, other disposal options may be utilized, including transfer and export of solid waste to another facility, or transportation by truck or rail to an out-of-County landfill facility, which would also be in compliance with all relevant requirements. Therefore, impacts are considered less than significant. Mitigation is not required.

e) Less than Significant

Construction waste generated under either Build Alternative would be disposed of in accordance with federal, State, and local regulations related to recycling, which would minimize the amount of waste material entering local landfills. Therefore, impacts are considered less than significant. Mitigation is not required.

3.7.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Question	CEQA Determination
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	No Impact

Question	CEQA Determination
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No Impact

CEQA Significance Determinations for Wildfire

a), b), c), d) No Impact

As described further in Section 3.5, *Wildfire*, the Project Study Area is not located within or near a very high, high, or moderate FHSZ (CAL FIRE n.d.). The nearest FHSZ is located approximately 3.3 miles southwest of the Project Study Area and consists of a moderate FHSZ in a local responsibility area. Therefore, neither Build Alternative would impact wildfire risks in the Project Study Area, including impairment of an adopted emergency response plan or emergency evacuation plan, exacerbation of wildfire risks or expose project personnel to pollutants from a wildfire or the uncontrolled spread of a wildfire, or exposure of people or structures to significant risks related to downslope, flooding, or landslides as a result of runoff, post-fire slope instability, or drainage changes. There would be no impact.

3.7.21 Mandatory Findings of Significance

Question	CEQA Determination
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	Less Than Significant with Mitigation Incorporated
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	Less Than Significant with Mitigation Incorporated

Question	CEQA Determination
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	Less Than Significant Impact

CEQA Significance Determinations for Mandatory Findings of Significance

a) Less Than Significant with Mitigation Incorporated

As described in the responses above, the proposed Project would not result in a potentially significant impact under CEQA. It does not have the potential to substantially degrade the quality of the environment. As described in Section 3.7.4, *Biological Resources*, neither Build Alternative would substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal. The inclusion of project features and additional measures would avoid and minimize impacts on biological resources. Incorporation of Mitigation Measures **PS-2**, **AS-1**, **NC-2**, and **NC-11** would mitigate impacts on biological resources to less than significant.

As described in Section 3.7.5, *Cultural Resources*, 3.7.7, *Geology and Soils*, and 3.7.18, *Tribal Cultural Resources*, the Dominguez Channel Historic District is the only built environment cultural resource identified within the proposed Project's APE. One previously recorded prehistoric archaeological resource was identified within the APE (CA-LAN-88/P-19-000088), which appears to have been destroyed as a result of previous construction activities in the area. No tribal cultural resources or paleontological resources were identified within the APE. Alternative 3 would not directly impact the Dominguez Channel. Although Alternative 2 would directly impact the Dominguez Channel, Caltrans has determined that the proposed Project would not adversely affect historic resources. The proposed Project is not anticipated to eliminate important examples of history or prehistory. Impacts would be considered less than significant with mitigation.

b) Less Than Significant with Mitigation Incorporated

Refer to the analysis in Section 3.6, *Cumulative Impacts*. With the inclusion of project features and the series of measures referenced in Section 3.6, *Cumulative Impacts*, the proposed Project under Alternatives 2 and 3 would not have impacts that are individually limited but cumulatively considerable. Therefore, impacts are less than significant with mitigation incorporated.

c) Less Than Significant

The proposed Project, under Alternatives 2 and 3, would improve connectivity and increase multi-modal access within the proposed Project corridor and accommodate planned economic development within the Project Study Area. Typical of roadway

projects, construction impacts related to aesthetics, noise, detours, and dust would occur; however, these impacts would be minimized through adherence to standard project features identified in Section 1.4, *Project Alternatives*. This includes the preparation of a TMP as well as standard measures for air quality (Measures **AQ-1** through **AQ-13**) and noise (Project Features **PF-NOI-1** through **PF-NOI-5**). Measures **AQ-15** and **AQ-16** would be implemented to further reduce emissions of criteria pollutants. Impacts are considered less than significant. Mitigation is not required.

Chapter 4 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for the proposed Project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, public meetings, public notices, Project Development Team (PDT) meetings, pop-up events, and a project website and hotline. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve Project-related issues through early and continuing coordination.

4.1 PROJECT SCOPING

The scoping process for the proposed Project was initiated with the preparation and distribution of a Notice of Preparation (NOP), which is shown in Appendix D, *Notice of Preparation*. The NOP was posted at the State Clearinghouse (2024090192) and circulated to public agencies and other interested parties in compliance with Section 15082 of the CEQA Guidelines on September 6, 2024. The NOP notified the public of the EIR/EA being prepared, along with the scoping meeting location and ways in which the public could provide comments on the proposed Project. The scoping period was from September 6, 2024, to October 10, 2024.

As described in the proposed Project's *Scoping Outreach Summary Report* (Appendix M), starting on August 26, 2024, trilingual (English, Spanish, and Tagalog) postcards were distributed via United States Postal Service (USPS) mail inviting stakeholders within a 0.25-mile radius of the Project area to attend scoping meetings at the Carson Event Center. In addition, Metro (Project Sponsor) placed legal advertisements in the print editions of *The Daily Breeze;* the Spanish-language newspaper, *La Opinión*; and the Filipino American newspaper, *Asian Journal*. Flyers were also distributed via door-to-door canvassing within a 0.25-mile radius of the Project area during the scoping period.

The Project team sent notices to the following agencies:

- USACE
- FHWA – California Division
- California ARB
- SBCCOG
- California Department of Conservation
- SWRCB
- CDFW
- CHP

- Caltrans Division of Planning and & Modal Programs
- City of Carson Department of Public Works
- Carson City Manager
- California Department of Water Resources
- California DTSC
- CTC
- SCAG
- Los Angeles County Department of Public Works
- RWQCB
- SCAQMD
- Los Angeles Sherriff's Department
- Los Angeles Fire Department
- La County Flood Control District
- Rivers and Mountains Conservancy
- County of Los Angeles, Director of Regional Planning

The Project team also sent notices to the following elected officials:

- U.S. Senator Laphonza Butler
- U.S. Senator Alex Padilla
- Congresswoman Nanette Diaz Barragan
- Congressman Ted Lieu
- Congresswoman Maxine Waters
- State Senator Steven Bradford
- Assemblymember Mike Gipson
- Los Angeles County Supervisor Holly J. Mitchell
- Mayor Lula Davis-Holmes
- Mayor Pro Tempore Jawane Hilton
- Carson City Councilmember Jim Dear
- Carson City Councilmember Cedrick L. Hicks Sr.
- Carson City Councilmember Bocatija Rojas
- Los Angeles City Councilmember Tim McOske

Scoping meetings were held virtually on September 17, 2024, and September 19, 2024. Prior to the September 19th scoping meeting, the City of Carson held its regularly scheduled city council meeting and requested that Metro and Caltrans hold an additional in-person meeting and extend the scoping period to increase community awareness of the proposed Project. A Notice of Extended Scoping Comment Period was filed on September 30, 2024, extending the original 30-day scoping comment period to a total of 46 days from September 6, 2024, through October 21, 2024. A third scoping meeting was held in-person on October 16, 2024, at the Carson Events Center.

As described further in the *Scoping Outreach Summary Report* (Appendix M), the Project Team also canvassed key business corridors within the Project area and hosted pop-up events during the scoping period at the Gardena Harvest Festival on October 5,

2024, and Foisia Park Pop-Up on October 12, 2024. Metro and the Project Team also briefed several stakeholders during the scoping period, including individuals from the City, Los Angeles County, CHP, and SBCCOG.

A Project website was developed at https://www.metro.net/projects/i-405-wilmington/ for the proposed Project, which announced the start of the scoping period and provided information on how to provide comments during the scoping period. The Project website also housed Project collateral, including fact sheets and frequently asked questions (FAQ) to supplement Project awareness. Following the scoping meetings, the meeting presentations were uploaded to the Project website.

A total of 76 formal comments were received during the formal scoping period from 66 individuals, agencies, or organizations. All comments received are available in the *Scoping Outreach Summary Report* (Appendix M). Comments were received from the following agencies and elected officials:

- California DTSC
- CDFW
- California ARB
- USEPA
- Carson Mayor Lula Davis Holmes
- Carson Councilmember Cedric L. Hicks, Sr.

Of the 76 total comments received, comments related to specific alternatives are summarized as follows (some comments expressed support for more than one alternative):

- 41 comments supported Alternative 1 (No-Build Alternative)
- 4 comments supported Alternative 2
- 42 comments supported Alternative 3
- 23 comments did not include direct support or opposition to any alternatives.

SBCCOG was among those who supported Alternative 2. Common themes collected from the comments are outlined below (most comment submissions included multiple themes):

- Need for improved bike safety and pedestrian access
- Concerns regarding freeway widening/increased capacity
- Prefer projects to promote transit/bus lanes
- Impacts from implementation of auxiliary lanes, such as pollution, noise, traffic
- Support investment in active transportation

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4.2 CONSULTATION AND COORDINATION WITH PUBLIC AGENCIES

4.2.1 Federal Highway Administration

The proposed Project's air quality studies will be submitted to FHWA for a project-level conformity determination following selection of the preferred alternative. A copy of the conformity determination will be included with the final environmental document.

4.2.2 United States Army Corps of Engineers

The proposed Project has been designed to minimize impacts on wetlands and other waters of the U.S. Alternative 2 would potentially impact jurisdictional resources, including wetland and non-wetland waters of the U.S. It is anticipated that the proposed Project under Alternative 2 would qualify for Nationwide Permit 14, which would be verified during the PS&E phase (i.e., final design). If Alternative 2 is selected as the preferred alternative, a preliminary jurisdictional delineation will be submitted to USACE for concurrence following selection of the preferred alternative.

Alternative 3 would not impact jurisdictional resources. Consultation with USACE would not be required should Alternative 3 be selected as the preferred alternative.

4.2.3 California Transportation Commission

The Project would seek CTC approval following Project approval and publication of the Notice of Determination for the final environmental document.

4.2.4 State Historic Preservation Officer

There is one historic property in the undertaking's APE—the Dominguez Channel Historic District. Caltrans, pursuant to Section 106 PA Stipulation X.B.2, has determined a FNAE (without Standard Conditions) is appropriate for this undertaking and will request the SHPO's concurrence in this determination. The SHPO concurred with this determination on December 3, 2025 (Figure 4.2-1 and Figure 4.2-2). Caltrans notified SHPO of their *de minimis* determination for Section 4(f) on June 23, 2026 (Figure 4.2-3 and Figure 4.2-4).

4.2.5 California Department of Fish and Wildlife

CDFW responded to the NOP on October 10, 2024 (see *Scoping Outreach Summary Report*, Appendix M), raising concerns about impacts on wildlife and waterways. California Endangered Species Act consultation protects species listed as threatened or endangered from take, unless authorized through an incidental take permit. Caltrans has determined that the proposed Project would not result in a take of the Crotch's

4 State of California • Natural Resources Agency — Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION

Armando Quintero, *Director*

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

December 3, 2025

VIA EMAIL

In reply refer to: FHWA-CATRA_2025_1105_001

Ms. Julia Prince-Buitenhuys
Cultural Studies Office
Division of Environmental Analysis
PO Box 942873, MS-27
Sacramento, CA 94273-0001

Subject: Finding of No Adverse Effect for the Proposed Interstate 405 from Wilmington Avenue to Main Street Improvements Project, Carson, Los Angeles County, California

Dear Ms. Prince-Buitenhuys:

Caltrans is continuing consultation regarding the above project in accordance with the 2024 *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, the United States Army Corps of Engineers' Sacramento District, San Francisco District, and Los Angeles District, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California* (106 PA) as well as under Public Resources Code 5024 and pursuant to the 2024 *Memorandum of Understanding Between the California Department of Transportation and the California State Historic Preservation Office Regarding Compliance with Public Resources Code Section 5024 and Governor's Executive Order W-26-92 (5024 MOU)*. As part of your documentation, Caltrans submitted a Historic Property Survey Report, Archaeological Survey Report and Finding of Adverse Effect Report for the above project.

Caltrans proposes to add auxiliary lanes between on- and off- ramps between PM 9.6 and 12.6 to improve weaving, merging, and diverging operations and/or the implementation of Transportation System Management and Transportation Demand Management elements. The proposed project would provide improvements to facilitate an integrated approach for all modes of transportation to enhance mobility, accessibility, and connectivity in a Complete Streets environment for all communities along the existing corridor.

Figure 4.2-1: State Historic Preservation Officer Concurrence

Ms. Prince-Buitenhuys FHWA-CATRA_2025_1105_001
December 3, 2025
Page 2 of 2

As part of its identification efforts Caltrans identified one historic property, the Dominguez Channel, that was previously determined eligible for the National Register of Historic Places.

Caltrans applied the Criteria of Adverse Effect, as defined in 36 CFR §800.5(a)(1), and determined that the Undertaking will have no adverse effect on historic properties. While one of the project alternatives will involve alterations to the historic property the actions will be in keeping with the Secretary of the Interior's Rehabilitation Standards.

Based on my review of the submitted documentation, I do not object to Caltrans' finding of no adverse effect for this undertaking.

If you have any questions, please contact Natalie Lindquist at natalie.lindquist@parks.ca.gov .

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Figure 4.2-2: State Historic Preservation Officer Concurrence (Cont.)

From: Harbert, Claudia A@DOT
To: Benz-Blumberg, Chris D@DOT
Subject: FW: 07-LA-105 Wilmington Ave to Main St. Improvements Project (EA 07-35940)
Date: Thursday, June 25, 2026 2:00:50 PM
Attachments: 07-LA-405 I-405 Wilmington Ave to Main St FOE to SHPO.pdf
FHWA-CATRA 2025 1105 001 405 Wilmington to Main, no adv 2025-12-03.pdf

For your records.

Thank you.

Claudia Harbert
Senior Environmental Scientist (Supervisory)
Heritage Resource Coordinator
Cultural Resources Unit
Division of Environmental Planning
Caltrans District 7
213.335.0124

From: Prince-Buitenhuys, Julia@DOT <Julia.Prince-Buitenhuys@dot.ca.gov>
Sent: Tuesday, June 23, 2026 4:27 PM
To: Tozer, Tristan@Parks <Tristan.Tozer@parks.ca.gov>
Cc: Fitzgerald, Robert@Parks <Robert.Fitzgerald@parks.ca.gov>; Harbert, Claudia A@DOT <claudia.harbert@dot.ca.gov>
Subject: 07-LA-105 Wilmington Ave to Main St. Improvements Project (EA 07-35940)

Afternoon Tristan,

Per our conversation, Caltrans is informing you that Caltrans, as assigned by FHWA, intends to make a *de minimis* finding for Section 4(f) use of the built-environment historic properties in the APE for the Wilmington Ave. to Main St. Improvements Project we consulted on with the SHPO last December. The determination is based on the SHPO's concurrence with the No Adverse Effect Finding, pursuant to Section 6009(a) of SAFETEA-LU and Caltrans' May 2014 side letter agreement.

Thank you, and let me know if you have any questions!

Sincerely,

Julia Prince-Buitenhuys

Julia Prince-Buitenhuys
Section 106 Coordinator

Figure 4.2-3. State Historic Preservation Officer Section 4(f) Notification

Caltrans Cultural Studies Office
Division of Environmental Analysis
1120 N St., Sacramento CA 95814
(916) 826-4194
Julia.prince-buitenhuys@dot.ca.gov

Figure 4.2-4. State Historic Preservation Officer Section 4(f) Notification (cont.)

bumble bee, burrowing owl, or any other state listed species. Therefore, an incidental take permit is not anticipated to be required under either Alternative 2 or Alternative 3.Alternative 2 would potentially impact jurisdictional resources, including non-wetland waters of the State. Should Alternative 2 be selected as the preferred alternative, a Section 1602 Streambed Alteration Agreement would be sought during the PS&E phase.

Alternative 3 would not impact jurisdictional resources. Consultation with CDFW would not be required, should Alternative 3 be selected as the preferred alternative.

4.2.6 Southern California Association of Governments

A Particulate Matter Hot-Spot Interagency Review Form was presented to SCAG's Transportation Conformity Working Group for discussion and review on August 26, 2025. It was determined during the meeting that the proposed Project is not a project of air quality concern. Comment is requested on this determination during the public comment period for the Draft EIR/EA.

4.2.7 Regional Water Quality Control Board

Alternative 2 would potentially impact jurisdictional resources, including wetland and non-wetland waters of the U.S. Pursuant to Section 401 of the Clean Water Act, a NOI would be submitted to the RWQCB during the PS&E phase.

Alternative 3 would not impact jurisdictional resources. Consultation with RWQCB would not be required, should Alternative 3 be selected as the preferred alternative.

4.2.8 Los Angeles County Flood Control District

The Dominguez Channel is a locally constructed, operated, and maintained flood channel. Alternative 2 proposes work within the Dominguez Channel. A Flood Encroachment Permit will be sought from Los Angeles County Flood Control District for all work within the Dominguez Channel, should Alternative 2 be selected as the preferred alternative.

4.3 TRIBAL ENTITIES

An inquiry was submitted to the NAHC on May 23, 2024, to search the sacred lands files and for a list of Native American Tribes for consultation. On June 11, 2024, NAHC responded indicating negative results for the APE within the SLF and identified 9 groups represented by 18 individuals with connections to the area (see letter in Figure 4.3-1 to Figure 4.3-2). Letters were sent to groups and individuals identified in Table 4.3-1 on August 26, 2024. At the request and on behalf of Caltrans, combined NHPA Section 106 and AB 52 consultation outreach was initiated. Follow-up emails were sent on September 21, 2024, to those tribal entities with email addresses listed. Tribal monitoring would be implemented in accordance with Measure CUL-1.

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

June 11, 2024

Brian Glenn
Duke CRM

Via Email to: brianglenn@dukecrm.com

Re: I-405 PAED Project, Los Angeles County

To Whom It May Concern:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

SECRETARY
Sara Dutschke
Miwok

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Laurena Bolden
Serrano

COMMISSIONER
Reid Milanovich
Cahuilla

COMMISSIONER
Bennae Calac
Pauma-Yuima Band of Luiseño Indians

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

Figure 4.3-1: Native American Heritage Commission Letter

Native American Heritage Commission
Native American Contact List
Los Angeles County
6/11/2024

Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Cahuilla Band of Indians	F	Bobby Ray Esparza, Cultural Director	52701 CA Highway 371 Anza, CA 92539	(951) 763-5549		besparza@cahuilla-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	6/28/2023
Cahuilla Band of Indians	F	Anthony Madrigal, Tribal Historic Preservation Officer	52701 CA Highway 371 Anza, CA 92539	(951) 763-5549		anthonymad2002@gmail.com	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	6/28/2023
Cahuilla Band of Indians	F	Erica Schenk, Chairperson	52701 CA Highway 371 Anza, CA 92539	(951) 590-0942	(951) 763-2808	chair@cahuilla-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	2/1/2024
Gabrieleno Band of Mission Indians - Kizh Nation	N	Christina Swindall Martinez, Secretary	P.O. Box 393 Covina, CA 91723	(844) 390-0787		admin@gabrielenoindians.org	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	8/18/2023
Gabrieleno Band of Mission Indians - Kizh Nation	N	Andrew Salas, Chairperson	P.O. Box 393 Covina, CA 91723	(844) 390-0787		admin@gabrielenoindians.org	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	8/18/2023
Gabrieleno/Tongva San Gabriel Band of Mission Indians	N	Anthony Morales, Chairperson	P.O. Box 693 San Gabriel, CA 91778	(626) 483-3564	(626) 286-1262	GTTribalcouncil@aol.com	Gabrieleno	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	12/4/2023
Gabrielino Tongva Indians of California Tribal Council	N	Robert Dorame, Chairperson	P.O. Box 490 Bellflower, CA 90707	(562) 761-6417	(562) 761-6417	gtongva@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/16/2023
Gabrielino Tongva Indians of California Tribal Council	N	Christina Conley, Cultural Resource Administrator	P.O. Box 941078 Simi Valley, CA 93094	(626) 407-8761		christina.marsden@alumni.usc.edu	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/16/2023
Gabrielino/Tongva Nation	N	Sandonne Goad, Chairperson	106 1/2 Judge John Aiso St., #231 Los Angeles, CA 90012	(951) 807-0479		sgoad@gabrielino-tongva.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	3/28/2023
Gabrielino-Tongva Tribe	N	Sam Dunlap, Cultural Resource Director	P.O. Box 3919 Seal Beach, CA 90740	(909) 262-9351		tongvatcr@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	5/30/2023
Gabrielino-Tongva Tribe	N	Charles Alvarez, Chairperson	23454 Vanowen Street West Hills, CA 91307	(310) 403-6048		Chavez1956metro@gmail.com	Gabrielino	Los Angeles,Orange,Riverside,San Bernardino,Santa Barbara,Ventura	5/30/2023
Juaneno Band of Mission Indians Acjachemen Nation - Belardes	N	Joyce Perry, Cultural Resource Director	4955 Paseo Segovia Irvine, CA 92603	(949) 293-8522		kaamalam@gmail.com	Juaneno	Los Angeles,Orange,Riverside,San Bernardino,San Diego	3/17/2023
Juaneno Band of Mission Indians Acjachemen Nation 84A	N	Heidi Lucero, Chairperson, THPO	31411-A La Matanza Street San Juan Capistrano, CA 92675	(562) 879-2884		jbmian.chairwoman@gmail.com	Juaneno	Los Angeles,Orange,Riverside,San Bernardino,San Diego	3/28/2023
Santa Rosa Band of Cahuilla Indians	F	Steven Estrada, Tribal Chairman	P.O. Box 391820 Anza, CA 92539	(951) 659-2700	(951) 659-2228	sestrada@santarosa-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	4/8/2024
Santa Rosa Band of Cahuilla Indians	F	Vanessa Minott, Tribal Administrator	P.O. Box 391820 Anza, CA 92539	(951) 659-2700	(951) 659-2228	vminott@santarosa-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	4/8/2024
Soboba Band of Luiseno Indians	F	Jessica Valdez, Cultural Resource Specialist	P.O. Box 487 San Jacinto, CA 92581	(951) 663-6261	(951) 654-4198	jvaldez@soboba-nsn.gov	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023
Soboba Band of Luiseno Indians	F	Isaiah Vivanco, Chairperson	P.O. Box 487 San Jacinto, CA 92581	(951) 654-5544	(951) 654-4198	ivivanco@soboba-nsn.com	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023
Soboba Band of Luiseno Indians	F	Joseph Ontiveros, Tribal Historic Preservation Officer	P.O. Box 487 San Jacinto, CA 92581	(951) 663-5279	(951) 654-4198	jontiveros@soboba-nsn.gov	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego	7/14/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed I-405 PAED Project (EA 35940), Los Angeles County.

Record: PROJ-2024-002990
Report Type: List of Tribes
Counties: Los Angeles
NAHC Group: All

Figure 4.3-2: Native American Heritage Commission Letter (Cont.)

Table 4.3-1: Native American Consultation Summary

Name and Tribal Affiliation	Outreach	Response
Heidi Lucero, Chairperson, Tribal Historic Preservation Officer, Juaneño Band of Mission Indians Acjachemen Nation	Letter on August 26, 2024; Email on September 21, 2024; Follow-up call on March 19, 2025	No response received.
Joyce Perry, Cultural Resource Director, Juaneño Band of Mission Indians Acjachemen Nation	Letter on August 26, 2024; Email on September 21, 2024; Follow-up call on March 19, 2025	No response received.
Joseph Ontiveros, Tribal Historic Preservation Officer, Soboba Band of Luiseño Indians	Letter on August 26, 2024; Email on September 21, 2024	See Ms. Valdez's response.
Jessica Valdez, Cultural Resource Specialist, Soboba Band of Luiseño Indians	Letter on August 26, 2024; Email on September 21, 2024; Follow-up call on March 19, 2025	On March 19, 2025, Ms. Valdez stated that the tribe had no immediate concern about the Project and the tribe defers to more local tribes, specifically Mr. Morales.
Isaiah Vivanco, Chairperson, Soboba Band of Luiseño Indians	Letter on August 26, 2024; Email on September 21, 2024	See Ms. Valdez's response.
Andrew Salas, Chairperson, Gabrieleño Band of Mission Indians – Kizh Nation	Letter on August 26, 2024; Email on September 21, 2024	On September 23, 2024, Brandy Salas stated on behalf of Andrew Salas that the Project is located within their Ancestral Tribal Territory and request consultation.
Christina Swindall Martinez, Secretary, Gabrieleño Band of Mission Indians – Kizh Nation	Letter on August 26, 2024; Email on September 21, 2024	See Mr. Salas' response.
Anthony Morales, Chairperson, Gabrieleño, Gabrieleño/Tongva San Gabriel Band of Mission Indians	Letter on August 26, 2024; Email on September 21, 2024; Follow-up call on March 19, 2025	On March 19, 2025, Mr. Morales stated via phone call that due to the tribe's knowledge of cultural resources in the area and past interaction with Caltrans, the tribe would like to monitor ground disturbance.
Sandonne Goad, Chairperson, Gabrielino/Tongva Nation	Letter on August 26, 2024; Email on September 21, 2024; Follow-up call on March 19, 2025	No response received.

Name and Tribal Affiliation	Outreach	Response
Robert Dorame, Chairperson, Gabrielino Tongva Indians of California Tribal Council	Letter on August 26, 2024; Email on September 21, 2024	See Ms. Conley's response on behalf of Mr. Dorame.
Christina Conley, Cultural Resource Administrator, Gabrielino Tongva Indians of California Tribal	Letter on August 26, 2024; Email on September 21, 2024	On September 4, 2024, Ms. Conley stated on behalf of Mr. Dorame that the Project is located within an area of high sensitivity and the tribe would like to monitor all ground disturbance.
Council Chairperson Charles Alvarez, Gabrielino-Tongva Tribe	Letter on August 26, 2024; Email on September 21, 2024; Follow-up call on March 19, 2025 (phone disconnected)	No response received.
Sam Dunlap, Cultural Resources Director, Gabrielino-Tongva Tribe	Letter on August 26, 2024; Email on September 21, 2024; Follow-up call on March 19, 2025	No response received.
Bobby Ray Esparza, Cultural Director, Cahuilla Band of Indians	Letter on August 26, 2024; Email on September 21, 2024; Follow-up call on March 19, 2025	No response received.
Anthony Madrigal, Tribal Historic Preservation Officer, Cahuilla Band of Indians	Letter on August 26, 2024; Email on September 21, 2024; Follow-up call on March 19, 2025	No response received.
Erica Schenk, Chairperson, Cahuilla Band of Indians	Letter on August 26, 2024; Email on September 21, 2024; Follow-up call on March 19, 2025	No response received.
Steven Estrada, Tribal Chairman, Santa Rosa Band of Cahuilla Indians	Letter on August 26, 2024; Email on September 21, 2024	See Ms. Minott's response.
Vanessa Minott, Tribal Administrator, Santa Rosa Band of Cahuilla Indians	Letter on August 26, 2024; Email on September 21, 2024	On September 25, 2024, received from Vanessa Minott, stating that they defer any comments to Soboba Band of Luiseno Indians cultural resource department.

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4.4 CIRCULATION, REVIEW, AND COMMENT ON THE DRAFT ENVIRONMENTAL DOCUMENT

Public input on the proposed Project is being solicited during the review period for this Draft EIR/EA, which will last a minimum of 45 days but no more than 60 days. All comments received during the public review process will be considered prior to the PDT's selection of the Preferred Alternative, which would then be recommended to the Metro Board of Directors. A final environmental document will then be prepared, which would include responses to all written comments received during the public comment period.

If the decision is made to approve the proposed Project, a NOD would be published for compliance with CEQA, and Caltrans would decide whether to issue a FONSI or require preparation of an EIS under NEPA. A NOA of the FONSI would be sent to the affected units of federal, state, and local government, and to the SCH, in compliance with EO 12372. Following project approval, FHWA will also post a Notice of Statute of Limitations on Claims in the *Federal Register* in accordance with MAP-21 (see 23 USC 139[l][1]).

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Chapter 5 List of Preparers

This EIR/EA was prepared by Caltrans and Metro, with assistance from the consultant team.

The following individuals were involved in the preparation of this EIR/EA:

CALIFORNIA DEPARTMENT OF TRANSPORTATION

Chris Benz-Blumberg, NEPA Assignment Statewide Coordinator

Paul Caron, Senior Environmental Scientist/Biologist

Mohammed Chowdhury, Caltrans Project Manager

Mike Conkle, Hazardous Waste Branch (South Region)

Claudia Harbert, Senior Environmental Planner, PQS for Architectural History

Sean Herron, Environmental Scientist/Biologist

Dustin Kay, District 7 Co-Principal Investigator

Christopher Laurel, District 7 Paleontological Coordinator

Tuanchi (Jack) Liu, Hazardous Waste Branch (South Region)

George Olguin, Caltrans District Landscape Architect

Karl Price, Senior Environmental Scientist

Joseph Reynoza, Project Engineer

Rocky Rojas, Environmental Scientist

Andrew Yoon, Senior Transportation Engineer, Air Quality Branch

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Lourdes Kriste, Senior Manager, Transportation Planning

Roberto Machuca, Deputy Executive Officer, Complete Streets and Highways

EGP CONSULTING

Angie Kung, Environmental Lead

Natalie Brim, Senior Environmental Planner

Sarah Barrera, Senior Biologist

HDR ENGINEERING, INC.

Michael Hynes, Area Highway Market Sector Leader

Garrett Kaya, Senior Highway Project Manager

Jessica Slater, Highway Deputy Project Manager

Anders Burvall, GIS Manager

Matthew Craft, Transportation Visualization Practice Lead

Kim Gene, Traffic Engineering Section Lead

George Gorman, Environmental Planning Section Manager Highways

Matthew Hodgson, Technical Editor

Victoria Hsu, Senior Air Quality Specialist

Sharon Jacob, GIS Analyst

Cathy LaFata, Community Transportation Strategy Director

Joseph Leo, Highway EIT

Amy Perez, Environmental Planner

David Petree, Senior Traffic and Data Analysis Lead

Anitra Rice, Senior Air Quality Specialist

Catherine Saint, Environmental Project Manager

Douglas Smith, Traffic Business Class Area Leader

Adiran Suzuki, Landscape Architect

Steven Yu, Air Quality Specialist

GPA CONSULTING

Richard Galvin, Vice President

Adelyn Alanis, Associate Environmental Planner

Laura Comstock, Senior Associate Environmental Planner

Ramses Cuellar De Lucio, Biologist

Logan Faltas, Environmental Planner

Jennifer Johnson, Senior Biologist

Jenna Kachour, Senior Associate Architectural Historian

Kayla Fon, Environmental Planner / Biologist

Phoebe Rayburn, Architectural Historian

Martin Rose, Senior GIS Analyst

Jeremy Rosenthal, Senior Biologist

Marya Samuelson, Senior Environmental Planner

Marieka Schrader, Senior Associate Environmental Planner

Riley Vera, Associate Environmental Planner

ENVIRONMENTAL REVIEW PARTNERS

Keith Cooper, Principal

DUKE CULTURAL RESOURCE MANAGEMENT, LLC

Morgan Beigle, Co-Principal Investigator, Prehistoric Archaeology

Brian Kussman, Paleontologist

FEHR AND PEERS

Anna Luo, Principal

Diwu Zhou, Associate Transportation Engineer

GEO-ADVANTEC

Shawn Ariannia, Principal Geotechnical Engineer

Giang (Jack) Lee, Senior Project Engineer

Vit Sirikunakorn, Project Engineer

KRONER ENVIRONMENTAL SERVICES, INC.

Kurt A. Kroner, Vice President

Zihua Zhao, Associate Environmental Engineer

Michael Wolff, Registered Professional Geologist / Certified Engineering Geologist

AMBIENT AIR QUALITY & NOISE CONSULTING, LLC

Kurt Legleiter, Principal

ARELLANO ASSOCIATES

Matt Evans, Senior Project Coordinator

Edgar Gutierrez, Project Director

Laura Herra, Project Manager

Edna Jimenez, Project Manager

Yvette Ximenez, Deputy Project Manager

Chapter 6 Distribution List

FEDERAL AGENCIES

U.S. Army Corps of Engineers Los Angeles District Attn: CESPL-CO-R 911 Wilshire Boulevard, Suite 1101 Los Angeles, CA 90053-2325	Federal Transit Administration Region IX Southern California Office 888 S Figueroa Street, Suite 440 Los Angeles, CA, 90017	U.S. Department of Transportation Federal Highway Administration 1200 New Jersey Avenue SE Washington, DC 20590
U.S. Fish and Wildlife Service Ventura Fish and Wildlife Office 2493 Portola Road, Suite B Ventura, CA 93003-7726	Environmental Protection Agency Region IX Federal Activities Office, CMD-2 75 Hawthorne Street, Suite 11 San Francisco, CA 94105	Federal Highway Administration California Division 650 Capitol Mall, Suite 4-100 Sacramento, CA 95814
U.S. Department of Energy Attn: Office of Env. Management 1000 Independence Avenue SW Washington, DC 20585	Federal Railroad Administration 1200 New Jersey Avenue SE Washington, DC 20590	U.S. Department of Health and Human Services 200 Independence Avenue SW, Washington, DC 20201
Centers for Disease Control/ National Center for Env. Health 4770 Buford Highway NE Atlanta, GA 30341-3717	U.S. Department of Housing and Urban Development San Francisco Regional Office One Sansome Street, Ste. 1200 P.O. Box 36003 San Francisco, CA 94104	Natural Resources Conservation Service Lancaster Service Center 44811 Date Avenue Lancaster, CA 93534-3136
Federal Emergency Management Agency, Region 9 Attn: Tammy Littrell, Deputy Regional Administrator 1111 Broadway, Suite 1200 Oakland, CA 94607-4052	National Marine Fisheries Service California Coastal Area Office 501 W. Ocean Boulevard, Ste 4200 Long Beach, CA 90802-4213	

STATE AGENCIES

California Air Resources Board Attn: Lauren Sanchez, Chair P.O. Box 2815 Sacramento, CA 95812	California Dept. of Conservation Attn: Jennifer Lucchesi, Director 715 P Street, MS 1900 Sacramento, CA 95814	California State Water Resources Control Board Attn: Eric Oppenheimer, Exec. Dir. P.O. Box 100 Sacramento, CA 95812
California Department of Fish and Wildlife Attn: Erinn Wilson-Olgin, Regional Mngr. South Coast Region (Reg. 5) 3883 Ruffin Road San Diego, CA 92123	California Highway Patrol Attn: Commissioner Sean Duryee 601 N 7th Street Sacramento, CA 95811	California Highway Patrol 411 N Central Avenue #410 Glendale, CA 91203
California Department of Toxic Substances Control Attn: Katherine M. Butler, Director P.O. Box 806 Sacramento, CA 95812	California Environmental Protection Agency 1001 I Street, Suite 1, P.O. Box 2815, Sacramento, CA 95812-2815	California Department of Water Resources Attn: Karla Nemeth, Director P.O. Box 942836 Sacramento, CA 94236

California Transportation Commission Attn: Tanisha Taylor, Executive Director 1120 N Street, MS 52 Sacramento, CA 95814	California Transportation Commission Attn: Clarissa Falcon, Chair 1120 N Street, MS 52 Sacramento, CA 95814	California Transportation Commission Attn: Joseph Cruz, Vice Chair 1120 N Street, MS 52 Sacramento, CA 95814
University of California Business Operations 1111 Franklin Street Oakland, CA 94607-5200	California State University Office of the Chancellor 401 Golden Shore Boulevard Long Beach, CA 90802-4210	California Native Plant Society 2707 K Street, Suite 1 Sacramento, CA 95816-5113
Department of Education Attn: Juan Mireles, Director School Facilities and Transportation Services Division 1430 N Street Sacramento, CA 95814	California Public Utilities Commission Attn: John Reynolds, President 505 Van Ness Avenue San Francisco, CA 94102	Native American Heritage Commission Attn: Reginald Pagaling, Chairperson 1550 Harbor Boulevard, Suite 100 West Sacramento, CA 95691
California State Historic Preservation Officer P.O. Box 942896 Sacramento, CA 94296	California Department of Forestry and Fire Protection P.O. Box 944246 Sacramento, CA 94244-2460	

REGIONAL/COUNTY/LOCAL AGENCIES

South Bay Cities Council of Governments Attn: Jacki Bacharach, Exec. Dir. 357 Van Ness Way #110 Torrance, CA 90501	Southern California Association of Governments Attn: Kome Ajise, Executive Director 900 Wilshire Boulevard, Suite 1700 Los Angeles, CA 90017	South Coast Air Quality Management District Attn: IGR Coordinator 21865 Copley Drive Diamond Bar, CA 91765
Regional Water Quality Control Board Los Angeles Region 320 W 4th Street, Suite 200 Los Angeles, CA 90013	LA County Flood Control District Attn: Ciara Barnett 900 S Fremont Avenue, 3rd Floor Alhambra, CA 91803	LA County Sheriff Department Attn: Robert G. Luna, Sheriff 211 W Temple Street Los Angeles, CA 90012
LA County Fire Department Attn: Anthony C. Marone, Fire Chief 1320 N Eastern Avenue Los Angeles, CA 90063	County of Los Angeles Department of Regional Planning Attn: Amy J. Bodek, Director 320 W Temple Street Los Angeles, CA 90012	LA County Dept. of Public Works Attn: Mark Pestrella, Director of Public Works 900 S Fremont Avenue Alhambra, CA 91803
Los Angeles County Department of Public Works Attn: Steve Burger, Deputy Director, Transportation 900 S Fremont Avenue Alhambra, CA 91803	City of Carson Attn: Dr. Arlington C. Rodgers, Jr., Director of Public Works 701 E Carson Street Carson, CA 90745	City of Carson Attn: David C. Roberts, Jr., City Manager 701 E Carson Street Carson, CA 90745
Los Angeles County Metropolitan Transportation Authority Attn: Stephanie Wiggins, Chief Executive Officer 1 Gateway Plaza Los Angeles, CA 90012	Carson Fire Department 415 W Ocean Boulevard Long Beach, CA 90802	City of Carson, Transportation Services Division 801 E Carson Street Carson, CA 90745

City of Carson, Planning Division Attn: Nathan Freeman, Director of Community and Economic Develop. 701 E Carson Street Carson, CA 90745	Long Beach Transit 1963 E Anaheim Street Long Beach, CA 90813	LA County Department of Regional Planning Attn: Bruce Durbin, Ordinance Studies Section Head 320 W Temple Street Los Angeles, CA 90012
Los Angeles Unified School District Attn: Tanya Ortiz Franklin, Board Member, Board District 7 333 S Beaudry Avenue Los Angeles, CA 90017	Carnegie Middle School 21820 Bonita Street Carson, CA 90745	Carson Chamber of Commerce 530 E Del Amo Boulevard Carson, CA 90746

FEDERAL LEGISLATORS

The Honorable Alex Padilla, Senator U.S. Senate 255 E Temple Street, Suite 1860 Los Angeles, CA 90012	The Honorable Laphonza Butler, Senator U.S. Senate 11111 Santa Monica Boulevard, Suite 915 Los Angeles, CA 90025	The Honorable Nanette Diaz Barragan, Congresswoman U.S. House of Representatives, District 44 701 E Carson Street Carson, CA 90745
The Honorable Ted Lieu, Congressman U.S. House of Representatives, District 36 1645 Corinth Avenue, Suite 101 Los Angeles, CA 90025	The Honorable Maxine Waters, Congresswoman U.S. House of Representatives, District 43 13605 Hawthorne Boulevard Hawthorne, CA 90250	

STATE LEGISLATORS

The Honorable Mike Gipson, Assembly Member California State Assembly, District 65 879 W 190th Street, Suite 920 Gardena, CA 90248	The Honorable Laura Richardson, Senator California State Senate, District 35 1021 O Street, Suite 7340 Sacramento, CA 95814	

LOCAL ELECTED OFFICIALS

The Honorable Holly J. Mitchell LA County Supervisor, 2nd District Office of the Supervisor 500 W Temple Street, Room 866 Los Angeles, CA 90012	The Honorable Tim McOsker Council Member, District 15 City of Los Angeles 544 N Avalon Boulevard, Suite 303 Wilmington, CA 90744	The Honorable Cedric L. Hicks, Sr. Mayor Pro Tempore Council Member, District 3 City of Carson 701 E Carson Street Carson, CA 90745
The Honorable Arleen Bocatija Rojas Council Member, District 4 City of Carson 701 E Carson Street Carson, CA 90745	The Honorable Lula Davis-Holmes Mayor City of Carson 701 E Carson Street Carson, CA 90745	The Honorable Jim Dear Council Member, District 2 City of Carson 701 E Carson Street Carson, CA 90745

The Honorable Dr. Jawane Hilton Council Member, District 1 701 E Carson Street Carson, CA 90745		

UTILITIES

Southern California Edison P.O. Box 800, Rosemead, CA 91770	AT&T 5001 Executive Parkway San Ramon, CA 94583	Verizon Corporate Headquarters 1095 Avenue of the Americas New York, NY 10036
LA County Sanitation District 1955 Workman Mill Road Whittier, CA 90601	California Water Service Co. 2632 W 237th Street Torrance, CA 90505	Golden State Water Co. 17140 S Avalon Boulevard Carson, CA 90746
Southern California Gas Co. 929 N Avalon Boulevard Wilmington, CA 90744	Sanitation Districts of LA County Joint Water Pollution Control Plant 24501 S Figueroa Street Carson, CA 90745	Metropolitan Water District of Southern California 550 E Alessandro Boulevard Riverside, CA 92508
LA Department of Water and Power 200 N Spring Street Los Angeles, CA 90012	Chevron Corporation 2600 Homestead Place Rancho Dominguez, CA 90220	Shell Oil Company Attn: Land and Permitting Encroachment Team 910 Louisiana Street, OSP 41082C Houston, Texas 77002
Phillips 66 18781 El Camino Real Atascadero, CA 93422	Marathon Petroleum 6 Centerpointe Drive, 5th Floor La Palma, CA 90623	Southern Pacific Pipeline 2150 Kruse Drive San Jose, California, 95131
Union Oil of California 5001 Executive Parkway, Suite 200 San Ramon, CA 94583	Henkel Corporation 5800 Bristol Parkway Culver City, CA 90230	ExxonMobil Corporate Headquarters 22777 Springwoods Village Pkwy Spring, TX 77389

PORT AUTHORITIES

Port of Los Angeles Administration Building 425 S Palos Verdes Street San Pedro, CA 90731	Port of Long Beach Admin. Building 415 W Ocean Boulevard Long Beach, CA 90802	

TRIBAL GOVERNMENTS

Andrew Salas, Chairperson Gabrieleño Band of Mission Indians – Kizh Nation P.O. Box 393 Covina, CA 91723	Vanessa Minott, Tribal Administrator Santa Rosa Band of Cahuilla Indians P.O. Box 391820 Anza, CA 92539	Christina Conley, Cultural Resources Administrator Gabrieleño/Tongva Indians of California Tribal Council P.O. Box 941078 Simi Valley, CA 93094
Andrew Morales, Chairperson Gabrieleño/Tongva San Gabriel Band of Mission Indians P.O. Box 693 San Gabriel, CA 91778		

INTEREST GROUPS/INDIVIDUALS

Rivers and Mountains Conservancy “El Encanto” Attn: Mark Stanley, Exec. Officer 100 N Old San Gabriel Canyon Rd Azusa, CA 91702	California Wildlife Federation 1012 J Street Sacramento, CA 95814	Sierra Club 1414 K Street, Suite 500 Sacramento, CA 95814
Museum of Vertebrate Zoology 3101 Valley Life Sciences Building Berkeley, CA 94720-3160	Business Manager Operating Engineers Local #3 1620 South Loop Road Alameda, CA 94502	The Nature Conservancy 445 S Figueroa Street Los Angeles, CA 90071
Los Angeles Audubon Society 3791 Wade Street Los Angeles, CA 90066	Center for Biological Diversity 8033 W Sunset Boulevard Los Angeles, CA	South Bay Forward 2355 Crenshaw Boulevard, Ste. 125 Torrance, CA 90501
F.A.C.E 309 E Hillcrest Boulevard, Suite 320 Inglewood, CA 90301	South Bay Workforce Investment Board 11539 Hawthorne Blvd, 5th Floor Hawthorne, CA 90250	Carson Bicycle Coalition 10575 Virginia Avenue Culver City, CA 90232
Caribbean American & Heritage Foundation Inc. 378 Redondo Avenue Long Beach, CA 90814	Natural Resources Defense Council 1314 2nd Street Santa Monica, CA 90401	Streetsblog Los Angeles 11539 National Boulevard Los Angeles, CA 90064
Rancho Dominguez Comprehensive AJCC 2909 E Pacific Commerce Drive Compton, CA 90221		

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Chapter 7 References

1 Proposed Project

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2.1 Resource Topics Dismissed from Analysis

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2.2.1 Existing and Future Land Use

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2.2.2 Consistency with Federal, State, Tribal, Regional, and Local Plans and Programs

California Air Resources Board. 2022. *2022 Climate Change Scoping Plan*. https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents.

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2.2.3 Growth

City of Carson. 2023. *Carson 2040 General Plan: Land Use and Revitalization Element*. https://www.dropbox.com/s/79qhazrh4cp06w7/2%20Land%20Use%20and%20Revitalization_041023.pdf?e=1&dl=0.

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