Pine Avenue Extension Project

Chino, California
DISTRICT 8 SBD-Pine Avenue
Federal Project Number HPLUL 5188 (018)
Project ID 200207

Initial Study [with Proposed] Mitigated Negative Declaration/Environmental Assessment

Prepared by the
State of California Department of Transportation
and City of Chino

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.

February 2023

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General Information about This Document

What's in this document:

The California Department of Transportation (Department, Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Initial Study/Environmental Assessment (IS/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in San Bernardino County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA). The City of Chino is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the 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.
- This IS/EA is available for review at the following locations during regular business hours:

  City of Chino
  Community Development Dept
  13220 Central Avenue
  Chino, CA 91710

  Chino Branch Library
  13180 Central Avenue
  Chino, CA 91710

  Caltrans District 8
  464 West Fourth Street
  San Bernardino, CA 92401

  This document may be downloaded at the following website:

  - www.cityofchino.org/cip.

- We'd like to hear what you think. If you have any comments about the proposed project, please send your written comments via postal mail or email to the following by the deadline.
- Send comments via postal mail to:

  Maria Fraser, CIP Engineering Manager
  City of Chino
  13220 Central Avenue
  Chino, CA 91710

- Send comments via email to: mfraser@cityofchino.org

  Please use "Pine Avenue Extension Project" in the subject line of the email/mail.
- Be sure to send comments by the deadline: **April 6, 2023**.

What happens next:

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

Alternative Formats:

To request this document in an alternative format due to a disability, please contact Lisa Almilli, Accessibility Coordinator for the City of Chino, via phone at (909) 334-3524 or email at lalmilli@cityofchino.org.

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SCH#_____
8 – SBD-Pine Avenue
HPLUL 5188 (018)
Project ID 200207

Extend Pine Avenue from State Route 71 (SR-71) eastward to El Prado Road as an urban four-lane arterial and to widen Pine Avenue to a four-lane arterial from El Prado Road to Euclid Avenue (SR-83) in the Cities of Chino and Chino Hills, San Bernardino County.

INITIAL STUDY with (Proposed) Mitigated Negative Declaration/ 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
City of Chino

2/28/2023
Date

Kurt Heidelberg
Deputy District Director, District 8
Division of Environmental Planning
California Department of Transportation
NEPA Lead Agency

February 1, 2023
Date

Maria Fraser, P.E., QSD/QSP
Engineering Manager
City of Chino
CEQA Lead Agency

The following persons may be contacted for information about this document:

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SCH #_____

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The City of Chino, in coordination with the California Department of Transportation (Caltrans), proposes to extend Pine Avenue from State Route 71 (SR-71) eastward to El Prado Road as an urban four-lane arterial and to widen Pine Avenue to a four-lane arterial from El Prado Road to Euclid Avenue (SR-83) in the Cities of Chino and Chino Hills.

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt an MND for this project. This does not mean that Caltrans' decision regarding the project is final. This MND is subject to change based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project, and pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed Project would have no effect on: Agriculture and Forest Resources, Farmlands/Timberlands, Community Impacts, Growth, Coastal Zone, Mineral Resources, Recreation, Utilities and Service Systems, Wild and Scenic Rivers.

In addition, the proposed Project would have less than significant effects to: Air Quality, Energy, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Land Use and Planning, Geology and Soils, Noise, Public Services, Transportation, and Wildfire.

With mitigation measures incorporated, the project would have less than significant effects to Aesthetics, Hydrology and Water Quality, Paleontology, Biological Resources, Cultural Resources, Tribal Cultural Resources:

BIO-10 The permanent removal of riparian vegetation suitable for least Bell's vireo will be replaced at minimum 3:1, with compensation occurring as creation, enhancement, and/or restoration. The compensation can occur through a combination one or more of the following: on-site enhancement, re-establishment, and/or creation; fee payment to other approved mitigation providers; off-site permittee-responsible mitigation; and/or other off-site mitigation within the Prado Basin or Santa Ana watershed. For all riparian habitat that would be temporarily removed during construction, restoration would occur on-or off-site at a 2:1 ratio through enhancement, re-establishment, and/or creation. The compensation for occupied least Bell's vireo habitat should be coordinated with aquatic permitting mitigation requirements (see to BIO-14).

BIO-11 For any areas that will be restored on-site, a Habitat Mitigation and Monitoring Plan (HMMP) will be prepared in accordance with requirements of the USACE, RWQCB, and CDFW. The HMMP will include all of the required components outlined by these agencies, including but not limited to, a project description, goal of the mitigation, mitigation site, implementation plan, monitoring plan, completion of mitigation/success criteria, and contingency measures. The HMMP will address the on-site restoration of temporary impact areas and compensatory mitigation at offsite areas to

mitigate for temporal losses and permanent impacts. The HMMP will include a five-year maintenance and monitoring period to ensure that restoration performance standards and final success criteria measures are met, as described in the HMMP and Conservation Measures included in the Biological Opinion (e.g., container plant survival will be 80 percent of the initial plantings for the first 5 years, evidence of natural recruitment, no artificial watering for at least two years).

BIO-12 Prior to the start of construction, a certified arborist will measure the diameter at breast height (dbh) of the two oak trees within the coast live oak woodland stand south of Pine Avenue. A report will be prepared by the arborist to document the health and viability of the tree and provide recommendations. If the dbh of oak trees is greater than 8 inches, then compensation will apply and oaks will be replaced at ratios as specified in the City of Chino Zoning Ordinance Landscape Design Standards (Municipal Code § 20.19.040):

Trunk Diameter of Tree to be Removed (DBH)	Number of Replacement Trees	Minimum Size of Replacement Tree*
8-10”	2	24” box
10”-14”	2	36” box
15”-29”	3	48” box
>30”	2	60” box
Source: Natural Environment Study (February 2020). Note: All replacement trees will be coast live oak species.		

Replacement of oak trees will occur on-site, however if this is not feasible, an offsite location may be used with approval from the Director of Community Development for the City of Chino. The oak trees must meet success criteria that will be integrated into the HMMP (BIO-11). If oak trees removed from the Pine Avenue project site are less than 8-inches dbh, no replacement is required.

BIO-14 Compensation for permanent impacts on federal and state jurisdictional waters would occur through a combination of one of more of the following: onsite enhancement, re-establishment, and/or creation; payment into an in-lieu fee program (such as the RCRCD in-lieu fee program) or other approved mitigation provider; or other off-site restoration/mitigation within the Prado Basin. Compensation for the permanent loss of USACE non-wetlands and state streambeds would occur at a minimum 2:1 ratio and for USACE wetlands and CDFW riparian habitat will occur at minimum 3:1 ratio. Temporary impacts on jurisdictional waters, wetlands, and state streambeds would occur on-site at 1:1. The mitigation for CDFW riparian habitat will take into consideration the mitigation proposed for impacts on least Bell’s vireo (2:1 ratio) (BIO-10) so that this habitat resource is mitigated once.

BIO-21 On-site restoration or creation of riparian habitat described in BIO-10 will incorporate habitat features that can be used by numerous wildlife species, including tree snags and crevices.

BIO-22 If bats are documented within the PIA, the bat specialist will coordinate with the Project Development Team and CDFW on developing a compensatory mitigation plan which may include eviction and exclusion of bats, provision of alternative bat roosting habitat, and/or provision of bat habitat in the new proposed bridge structure.

CR-3 An ESA exists in the western portion of the project, adjacent to the south side of the ADI for Pine Avenue. The ESA boundary is set along the edge of construction and surrounds archaeological site P36-005096/CA-SBR-5096 Cogstone Point in its entirety, as shown as shown on the APE Map, in the Project Plans, and in the ESA / AMA Monitoring and Discovery Plan. The ESA is closed and may not be entered.

CR-4 An AMA exists in the western portion of the project, covering the northern portion of archaeological site P36-005096/CA-SBR-5096 Cogstone Point where the ADI for Pine Avenue construction traverses a small, previously disturbed portion of the site. The AMA boundary is set

along the southern edge of construction and covers the previously recorded limits of the site on the norther side of the ESA fence line, as shown on the APE Map, in the Project Plans, and in the ESA / AMA Monitoring and Discovery Plan. Construction activity within the limits of the AMA may not commence without the presence of the archaeological monitor.

PALEO-1 Prior to the start of earthwork, a qualified Project Paleontologist should be retained to oversee and implement the paleontological mitigation program. The Project Paleontologist shall have a graduate degree in paleontology or geo-biology, and proven experience in supervising paleontological assessments and paleontological mitigation programs.

PALEO-2 The Project Paleontologist should attend the pre-construction meeting to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. If necessary, the Project Paleontologist may conduct worker environmental awareness training.

PALEO-3 A paleontological monitor, under the guidance of the Project Paleontologist, should be on-site to monitor mass grading and remedial grading operations that encounter Pleistocene older alluvial fan deposits. Full-time monitoring is recommended for areas where Pleistocene older alluvial fan deposits are mapped at the surface (e.g., eastern half of the Pine Avenue Extension right of way and the entire borrow site). In addition, excavations that extend greater than 5 feet below existing grade in areas where Quaternary younger alluvial and wash deposits are mapped at the surface should be monitored on a part-time basis until it is confirmed that no Pleistocene older alluvial fan deposits are being impacted. The monitor should take appropriate field notes to document stratigraphical and paleontological data. The Project Paleontologist, in consultation with appropriate agencies, has the authority to reduce paleontological monitoring (e.g., part-time monitoring, spot-checking) based on results of the mitigation program to date, and current and anticipated conditions in the field.

PALEO-4 If fossils are discovered, they should be salvaged by the paleontological monitor and/or the Project Paleontologist. In most cases this fossil salvage can be completed in a short period of time (e.g., minutes to hours). However, in rare cases, a large fossil specimen or a bone bed may be discovered, and would require an extended salvage period. In these instances the paleontological monitor should be allowed to temporarily direct, divert, or halt excavations to allow the timely recovery of fossil remains in a timely manner.

PALEO-5 In the event that fossils are discovered during a period when paleontological monitor is not on site (an inadvertent discovery), earthwork within the vicinity of the discovery site shall temporarily halt, and the Project Paleontologist contacted to evaluate the significance of the discovery. If the inadvertent discovery is determined to be significant, the fossils shall be recovered, as outlined in measure PALEO-4.

PALEO-6 Fossil remains collected during monitoring and salvage should be cleaned, repaired, sorted, identified, and cataloged as part of the mitigation program. Fossil preparation may also include screen-washing for microfossils or other laboratory analyses (e.g., radiocarbon dating), if applicable. Fossil preparation and curation activities may be conducted at the laboratory of the contracted Project Paleontologist (if so equipped), at an appropriate outside agency, and/or at the designated fossil repository, and shall follow the standard of the designated repository.

PALEO-7 Prepared fossils, along with copies of all pertinent field notes, photos, and maps, should be housed in a regional scientific repository with permanent paleontological collections (e.g., San Bernardino County Museum, San Diego Natural History Museum, Western Science Center). Curation of the fossils should be accompanied by financial support for initial specimen storage (e.g., purchase of storage cabinets).

PALEO-8 A final summary report should be completed by the Project Paleontologist that outlines the results of the mitigation program. This report should include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils. This report shall be submitted to appropriate agencies (e.g., Caltrans, City of Chino), as well as to the designated repository (if fossils are recovered).

_____ _____

Maria Fraser, P.E., QSD/QSP
Engineering Manager
City of Chino
CEQA Lead Agency

Date

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Chapter 1 Proposed Project

1.1 NEPA Assignment

California participated in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program) pursuant to 23 USC 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6, 2012, amended 23 USC 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a Memorandum of Understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012, and was renewed on May 27, 2022, for a term of ten years. In summary, the Department continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and the Department assumed all of the United States Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

1.2 Introduction

The proposed project would extend Pine Avenue from SR-71 eastward to El Prado Road as a four-lane arterial and widen Pine Avenue to a four-lane arterial from El Prado Road to Euclid Avenue in the Cities of Chino and Chino Hills. Refer to Figures 1, 2, and 3.

The Department, as assigned by the FHWA, is the lead agency under the NEPA, and the City of Chino is the lead agency under the California Environmental Quality Act (CEQA).

The United States Army Corps of Engineers (USACE) is a key cooperating agency under the NEPA, as Corps Project lands are impacted by the proposed activity.

1.2.1 Existing Facility

Currently, Pine Avenue does not exist between SR-71 and Pomona Rincon Road/Fairfield Ranch Road. Pine Avenue between Pomona Rincon Road/Fairfield Ranch Road and El Prado Road is a two-lane roadway with approximately 60-feet of right of way, which is closed to public use. East of El Prado Road, Pine Avenue is an improved two-lane roadway to Euclid Avenue. Pine Avenue travels in a northeast direction through Subarea 1 and Subarea 2 of the City's Sphere of Influence of the Chino Valley Agricultural Preserve Area, to the San Bernardino/Riverside County line. Pine Avenue crosses Chino Creek as a dipped crossing, with two 72-inch corrugated metal pipe culverts initially installed under the roadbed to convey low flows. Recently, the existing crossing over Chino Creek was repaired. The repairs, which took place between December 13, 2021 and January 7, 2022, consisted of removing approximately 1,120 square feet

of storm-damaged asphalt and concrete, removal of one 96-inch corrugated metal pipe (CMP), dirt, rocks, and debris within the Chino Creek streambed. Two 96-inch CMPs were installed, backfilled with cement slurry, and concrete paving was also replaced. The construction access was limited to the existing roadway within the right of way, and no equipment was allowed to enter the streambed or private properties. Pine Avenue also crosses over a culvert in Cypress Channel. The City of Chino General Plan Transportation Element designates Pine Avenue from Euclid Avenue west to El Prado Road as a Primary Arterial. The City of Chino Hills General Plan Circulation Element designates Pine Avenue from SR-71 west to Butterfield Ranch Road as a Minor Arterial. The San Bernardino County Transportation & Mobility Element Roadway Network Policy Map [TM-1(A-E)] designates Pine Avenue as a Secondary Highway from El Prado Road to Euclid Avenue. Furthermore, SR-71 is designated as a Terminal Access [Federal Surface Transportation Assistance Act of 1982 (STAA)] route according to the Caltrans Truck Networks on California State Highways Map. Terminal Access allows for the interstate travel of STAA trucks on State highways.

1.2.2 Project Background

The project area is within the northern Prado Reservoir in San Bernardino County, California. Prado Reservoir consists of land up to the 566 foot elevation contour, as established by the USACE. Specifically, the project area is in the City of Chino with portions also within the City of Chino Hills, along the existing Pine Avenue alignment between SR-71 and Euclid Avenue, and the borrow site is located between Cucamonga Avenue and Hellman Avenue, south of Chino Corona Road. In 2000, the Orange County Transportation Authority (OCTA), the Southern California Association of Governments (SCAG), and the Four Corners Transportation Policy Coordination Group, prepared the Four Corners Plan study which provided a vision of long-term transportation improvement needs and priorities in the area bounded generally by SR-57, SR-60, SR-91 and I-15. In the study, the Counties of San Bernardino, Riverside, Los Angeles, and Orange identified Pine Avenue/Schleisman Road as a critical regional facility to support rapidly occurring development in the Four Corners area. The study recommended the development of Pine Avenue/Schleisman Road as a major east-west link between Arlington Avenue in the County of Riverside and SR-71 via the Pine Avenue/SR-71 interchange. The Four Corners Plan Update was prepared in 2009 to re-evaluate the strategies that were proposed in the 2000 Four Corners Plan. The updated projects included in the Four Corners Plan Update were those that could best relieve congestion, enhance transportation choices, and maintain the quality of life for communities in the Four Corners area. The Pine Avenue/Schleisman Road arterial link continued to be included in the Four Corners Plan Update prepared in 2009.

The project is included in SCAG's 2019 Federal Transportation Improvement Program (FTIP) (project ID# 200207) and proposed for funding under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) as a demonstration project. It is also included in SCAG's 2020-2045 Regional Transportation Plan /Sustainable Communities Strategy (RTP/SCS).

1.2.3 Purpose and Need

1.2.3.1 PROJECT PURPOSE

The purpose of the project is to:

- Provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand in the Cities of Chino and Chino Hills, consistent with the Transportation and Mobility Element of the County of San Bernardino's Countywide General Plan, City of Chino General Plan Circulation Element, and City of Chino Hills 2014 General Plan Update Roadway Plan.

1.2.3.2 PROJECT NEED

Based on the U.S. Census Bureau, City and Town Populations Totals: 2010-2019 table, the City of Chino has experienced a 20 percent growth between year 2010 to 2019 and the City of Chino Hills has experienced a 12 percent growth during the same time period. In addition, current land use proposals as well as existing residential land uses are expected to generate increased traffic demand in the area. The existing level of service (LOS), refer to table below, in the vicinity of the proposed project during peak hours is operating at an unacceptable level (LOS of E or worse), specifically for the Pine Avenue, East of Euclid Avenue (LOS F) and Butterfield Ranch Road, East of SR-71 (LOS F) roadway segments, and the SR-71 Northbound, Central Avenue to Pine Avenue (LOS F), SR-71 Northbound, Pine Avenue to Euclid Avenue (LOS F) freeway segments. In addition, based on forecasted traffic demand, the following intersections in the vicinity of the proposed project are anticipated to operate at an unacceptable LOS during one or more peak hours under future year 2023 without the proposed project: SR-71 Southbound Ramps/Shady View Drive/Butterfield Ranch Road (LOS E), and Euclid Avenue/Pine Avenue (LOS F).

1.2.4 Capacity, and Transportation Demand

1.2.4.1 CURRENT AND FORECASTED TRAFFIC

A Traffic Impact Analysis (TIA) (Caltrans 2020a) was prepared for the proposed project and ten study area intersections were analyzed along with fourteen key existing/future roadway segments, and eight freeway mainline analysis locations. Intersection operations were evaluated using level of service (LOS)(refer to Table 1.2-1 and 1.2-2). LOS is a performance measure, defined in the Highway Capacity Manual (HCM), and used to characterize how well the roadway network is operating for motorized vehicles. This methodology results in level of service measurements, indicating the quality of traffic flow and using letter grades from LOS A (free flowing traffic with low volumes and high speeds) to LOS F (traffic volumes exceeds design capacity with forced flow and substantial delays). The City of Chino has determined that since the project was initiated in 2008 with overall footprint finalized in 2017 and technical studies for the project prepared before implementation of Section 15064.3, performing vehicle miles traveled (VMT) analysis for this project is not applicable (refer to Chapter 3.2.17 for additional details).

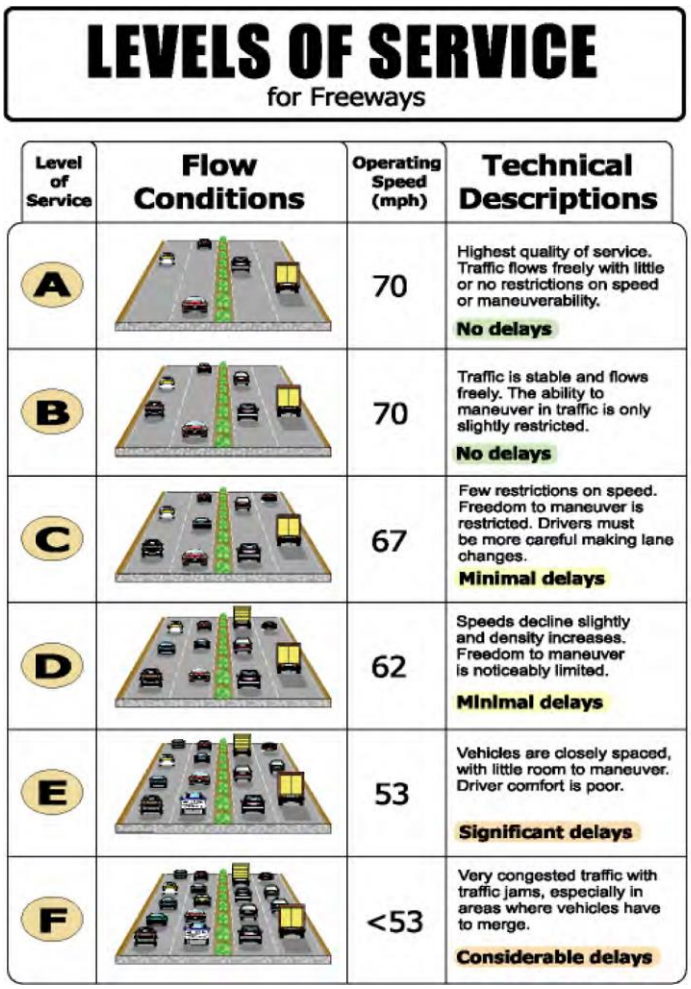
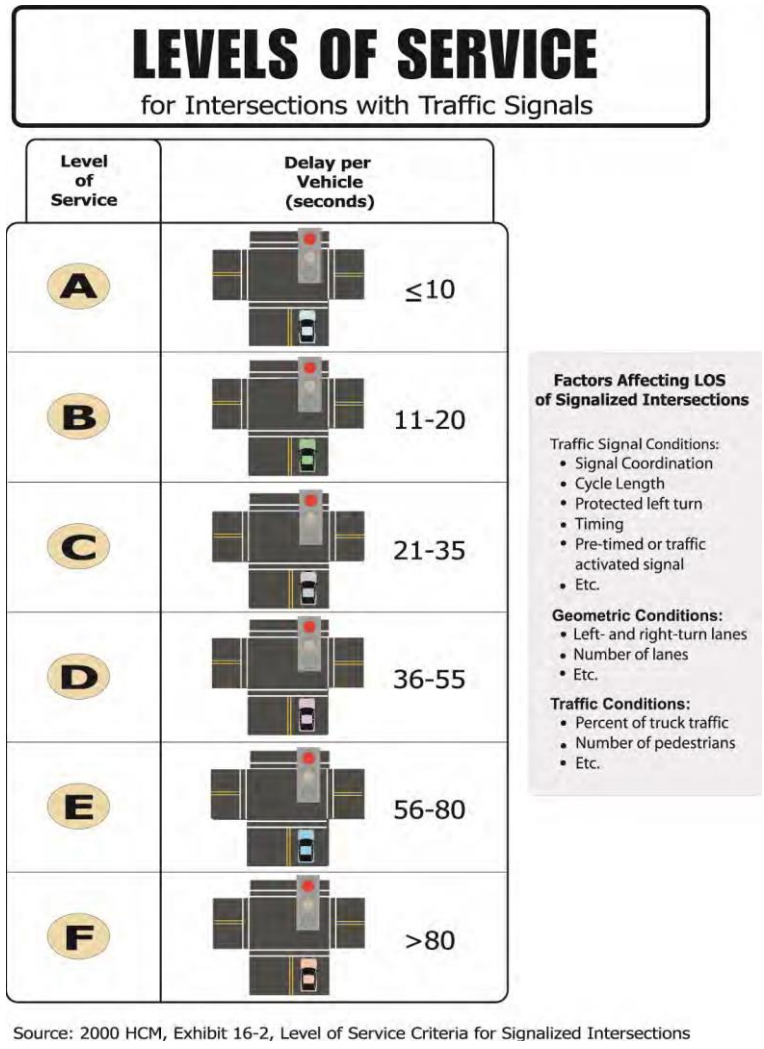


Table 1.2-1, Level of Service for Basic Freeway Segment



Source: 2000 HCM, Exhibit 16-2, Level of Service Criteria for Signalized Intersections

Table 1.2-2, Level of Service for Signalized Intersections

Existing Traffic (2016)

For existing traffic conditions, the study area intersections are currently operating at an acceptable level of service (LOS) of LOS D or better, during the peak hours. For existing roadway segment traffic conditions, the following study area roadway segments are currently operating at an unacceptable LOS of LOS E or worse:

- Pine Avenue, East of Euclid Avenue – LOS F;
- Butterfield Ranch Road, East of SR-71 – LOS F.

For existing freeway mainline traffic conditions, the following freeway segments are currently operating at an unacceptable LOS E or worse:

- SR-71 Northbound, North of Central Avenue – LOS E AM Peak Hour Only;
- SR-71 Northbound, Central Avenue to Pine Avenue – LOS F AM and PM Peak Hours;
- SR-71 Northbound, Pine Avenue to Euclid Avenue – LOS F AM and PM Peak Hours.

For the existing traffic conditions, the study area ramp junctions are operating at acceptable LOS D or better, with the exception of the following:

- SR-71 Northbound Off-Ramp at Central – LOS F AM and PM Peak Hours;
- SR-71 Northbound On-Ramp at Pine Avenue – LOS F AM and PM Peak Hours;
- SR-71 Northbound Off-Ramp at Pine Avenue – LOS F AM and PM Peak Hours;
- SR-71 Northbound On-Ramp at Euclid Avenue – LOS F AM and PM Peak Hours.

Design Year Traffic

As mentioned in the Traffic Impact Analysis prepared for the proposed project, the intersection analysis results indicate that the following study area intersections are anticipated to operate at an unacceptable LOS of LOS E or worse during one or more peak hours under future year 2023 without the proposed project conditions:

- SR-71 Southbound Ramps/Shady View Drive/Butterfield Ranch Road – LOS E AM Peak Hour;
- Euclid Avenue/Pine Avenue – LOS F AM and PM Peak Hours.

Furthermore, the intersection analysis results indicate that there are no additional study area intersections anticipated to operate at an unacceptable LOS during the peak hours under future year 2043 without the proposed project conditions, in addition to those previously identified under the future year 2023 without project conditions.

The roadway segment analysis results indicated that the following additional study area roadway segment is anticipated to operate at an unacceptable LOS E or worse under the future year 2023 without project conditions:

- Pine Avenue, East of Euclid Avenue – LOS F;
- Butterfield Ranch Road, East of SR-71 – LOS F;
- Euclid Avenue, South of Pine Avenue – LOS F.

The roadway segment analysis results indicate that the following additional study area roadway segments are anticipated to operate at an unacceptable LOS E or worse under future year 2043 without the project conditions:

- Euclid Avenue, North of Pine Avenue – LOS E;
- Euclid Avenue, South of Pine Avenue – LOS F.

The following freeway mainline segments are anticipated to operate at an unacceptable LOS E or worse during one or both of the peak hours under future year 2023 without the project conditions:

- SR-71 Southbound, South of Euclid Avenue – LOS E AM Peak Hour;
- SR-71 Northbound, South of Euclid Avenue – LOS F PM Peak Hour.

The following ramp junction are anticipated to operate at unacceptable LOS E or worse during one or both of the peak hours under future year 2023 without the proposed project conditions:

- SR-71 Southbound Off-Ramp at Central Avenue – LOS F PM Peak Hour;
- SR-71 Southbound Off-Ramp at Pine Avenue – LOS E AM Peak Hour;
- SR-71 Southbound On-Ramp at Euclid Avenue – LOS E AM Peak Hour;
- SR-71 Northbound ON-Ramp at Central Avenue – LOS F AM Peak Hour, LOS E PM Peak Hour;
- SR-71 Northbound Loop On-Ramp at Central Avenue – LOS E AM Peak Hour;
- SR-71 Northbound Off-Ramp at Euclid Avenue – LOS F PM Peak Hour.

The following study area freeway mainline segments are anticipated to operate at an unacceptable LOS E or worse during one or both of the peak hours under future year 2043 without the project conditions:

- SR-71 Southbound, Central Avenue to Pine Avenue – LOS F AM Peak Hour, LOS E PM Peak Hour;
- SR-71 Northbound, Pine Avenue to Euclid Avenue – LOS F AM Peak Hour.

The following ramp junctions are anticipated to operate at unacceptable LOS E or worse during one or both of the peak hours under future year 2043 without the project conditions:

- SR-71 Southbound On-Ramp at Pine Avenue – LOS F AM Peak Hour;
- SR-71 Southbound Loop On-Ramp at Euclid Avenue – LOS F AM Peak Hour, LOS E PM Peak Hour;
- SR-71 Southbound On-Ramp at Euclid Avenue – LOS F AM Peak Hour, LOS E PM Peak Hour.

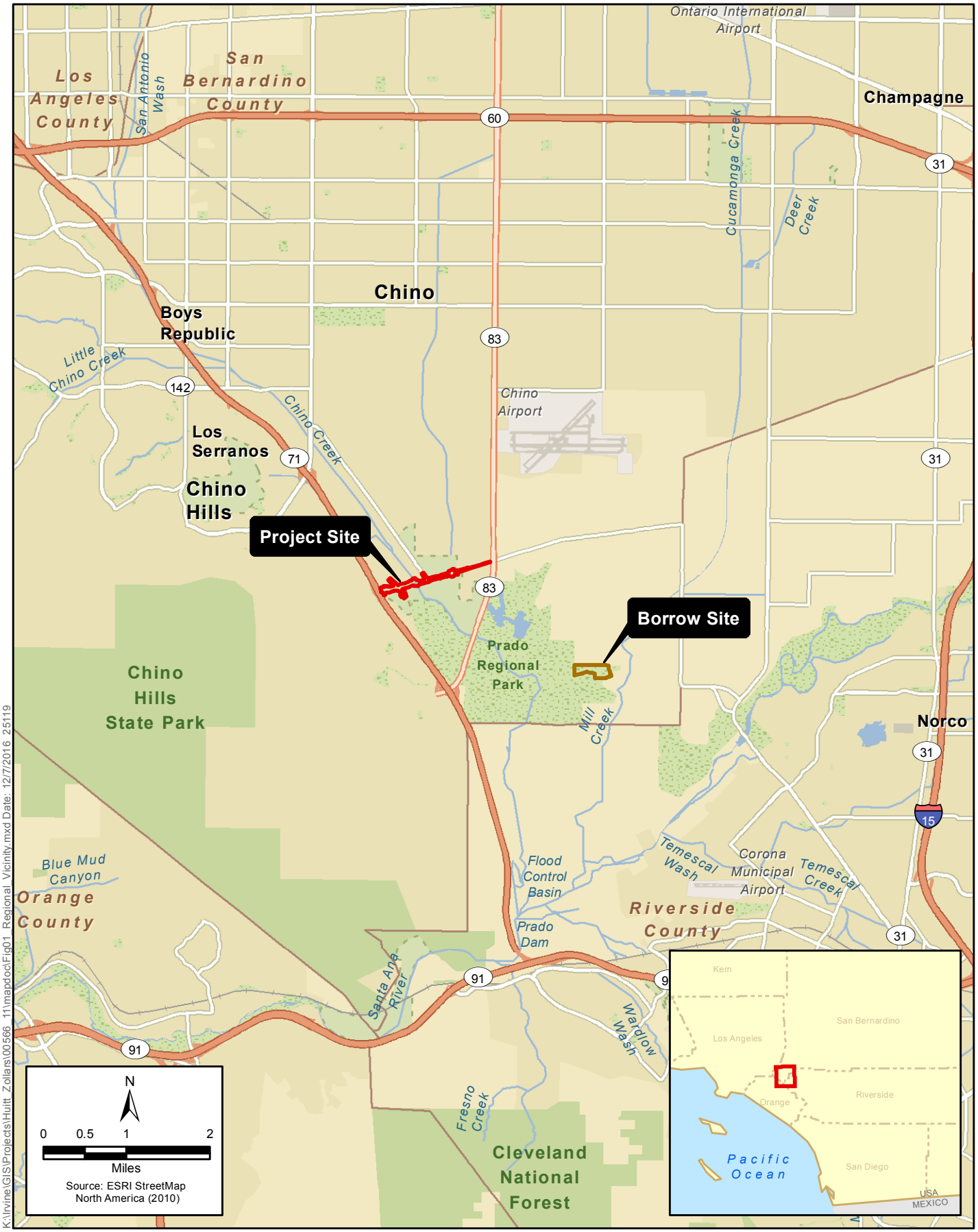


Figure 1
Regional Vicinity
Pine Avenue Extension Project

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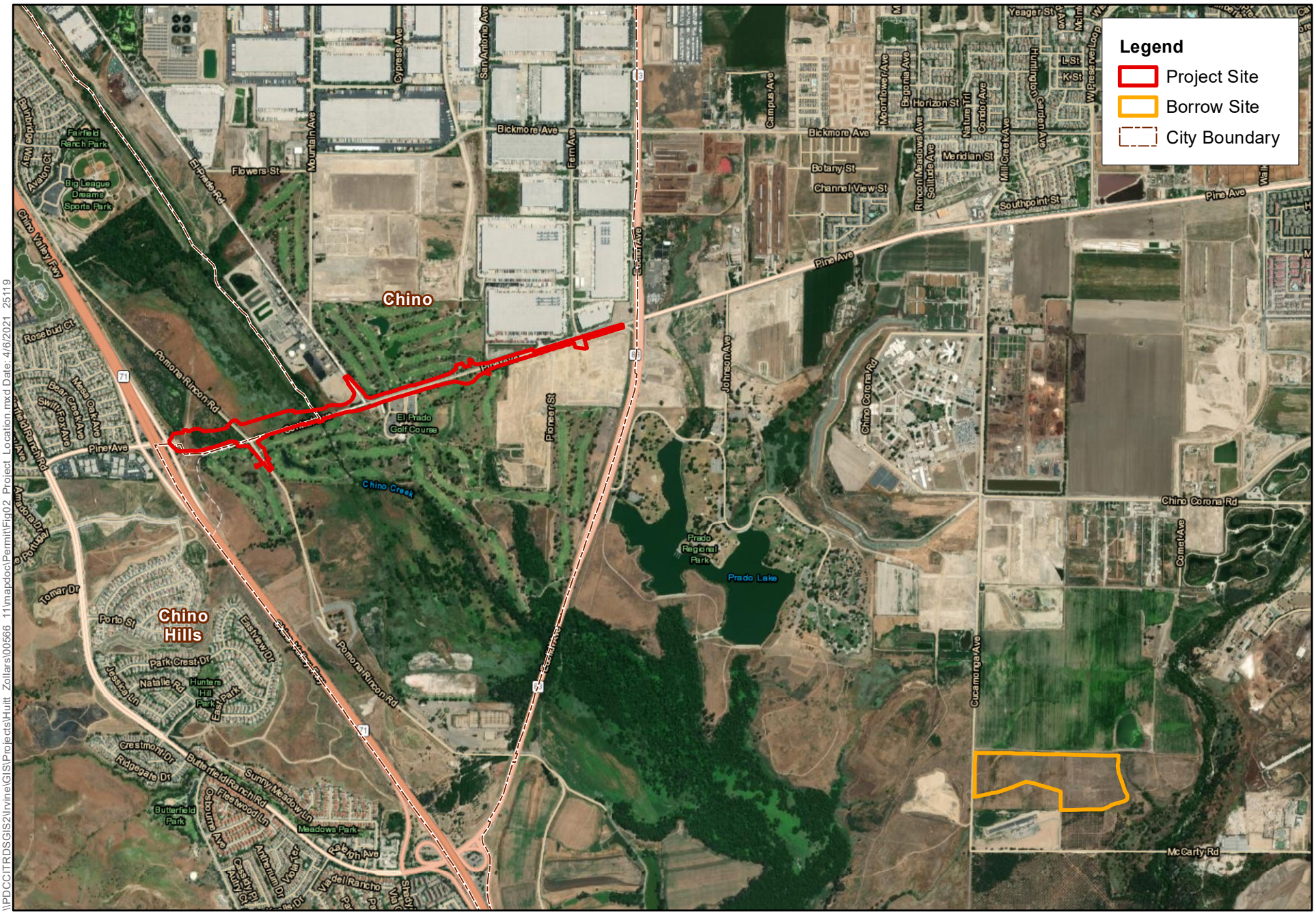

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Figure 2
Project Location
Pine Avenue Extension Project

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1.2.5 Roadway Deficiencies

Based on the U.S. Census Bureau, City and Town Populations Totals: 2010-2019 table, the City of Chino has experienced a 20 percent growth between year 2010 to 2019 and the City of Chino Hills has experienced a 12 percent growth during the same time period. Furthermore, current and future land use proposals are expected to generate increased traffic demand in the project area. Pine Avenue, between SR-71 and Euclid Avenue, has been identified as a critical facility to provide access to the greater Inland Empire area by the Counties of San Bernardino, Riverside, Los Angeles, and Orange. Pine Avenue currently dead-ends at El Prado Road with no connection to SR-71. Extending Pine Avenue would provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demands in the Cities of Chino and Chino Hills and would be consistent with both the City of Chino and City of Chino Hills Circulation Elements.

1.2.6 Social Demands or Economic Development

Based on the Southern California Association of Governments (SCAG) 2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction table, the City of Chino's population for year 2020 is anticipated to be 86,200, growing to 114,200 by year 2035, and expected to be 120,400 by year 2040. The number of households in the City of Chino in year 2020 is anticipated to be 24,500, growing to 32,200 by year 2035, and 34,000 by year 2040. Employment estimates in the City of Chino is anticipated at 45,500 jobs in year 2020, growing to 50,000 jobs by year 2035, and 50,600 jobs by year 2040. In the City of Chino Hills, the population for year 2020 is anticipated to be 76,500, growing to 89,000 by year 2035, and expected to be 94,900 by year 2040. The number of households in the City of Chino Hills in year 2020 is anticipated to be 23,500, growing to 27,400 by year 2035, and 28,300 by year 2040. Employment estimates in the City of Chino Hills is anticipated at 13,900 jobs in year 2020, growing to 17,900 jobs by year 2035, and 18,600 jobs by year 2040.

Furthermore, according to the City of Chino General Plan, the Inland Empire, of which the City of Chino is part, is one of the fastest growing areas of the country and exceeds the growth rate of the rest of southern California. The County of San Bernardino is projected to grow by 30 percent to 2.78 million residents by year 2025.

The City of Chino General Plan, Land Use Map identifies the existing land uses surrounding Pine Avenue along the project area as Recreation/Open Space (R/OS), General Industrial (GI), and Agriculture (AG). Furthermore, the City of Chino General Plan, Transportation Element identifies a Future Traffic Signals (Chino Traffic Signal) at Pine Avenue and El Prado Road and Pine Avenue at SR-71. The City of Chino Hills General Plan, Land Use Map identifies the existing land uses surrounding Pine Avenue along the project area as Public Open Space, U.S. Army Corps Property, and to the west of SR-71 as Low Density Residential, Commercial, and High Density Residential.

1.2.7 Modal and System Linkages

Pine Avenue is designated as a Primary Arterial and serves as a designated truck route in the City of Chino General Plan Transportation Element. The City of Chino truck routes are located primarily on east-west oriented roadways and provide a continuous truck route connection from SR-71 to Euclid Avenue and through the City of Chino. The proposed project would provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand in the City of Chino and City of Chino Hills. The proposed project is also consistent with the City of Chino and City of Chino Hills General Plans.

1.2.8 Complete Streets

Based on the Chino Bicycle and Pedestrian Master Plan, currently, there are no designated bicycle lanes (Class I, II or III) or transit bus stops on Pine Avenue between Euclid Avenue and El Prado Road within the City of Chino along the project route. Furthermore, and as previously mentioned, Pine Avenue to El Prado Road is designated a City of Chino Truck Route with a posted speed limit of 45 mph. A Bicycle-Pedestrian Propensity Model was developed for the Chino Bicycle and Pedestrian Master Plan to identify existing and potential bicycle activity areas citywide utilizing existing data. This model was developed to determine the most likely areas within the City of Chino where cyclists are likely to be, either currently or if improvements were made. Based on the Bicycle and Pedestrian Propensity Model, Pine Avenue is considered a low frequency propensity for bicycle and pedestrian activities.

Based on the City of Chino Hills General Plan Circulation Element, the bicycle master plan designates Pine Avenue, within the City of Chino Hills, as a Class 2 Bike Lane. Class 2 Bike Lanes are defined as a bike lane that provides a striped lane for one-way bike travel on a street or highway adjacent to auto travel lanes. OmniTrans is the public transit agency that serves the San Bernardino Valley, including the City of Chino Hills. The proposed project would not result in changes to transit facilities or bike lane designations as they currently exist in the City of Chino Hills.

Both the City of Chino and Chino Hills are serviced by OmniTrans and Orange County Transportation Authority (OCTA) with bus routes that operate throughout both cities. The implementation of the proposed project could contribute to travelers of all ages and abilities moving safely and efficiently across connected and complete streets. Furthermore, the proposed project has been planned, designed, and considered the mobility for all users, appropriate to the function and context of the existing facility.

1.2.9 Independent Utility and Logical Termini

FHWA regulations (23 C.F.R.§771.111 (f) require that the action evaluated:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope.
- Have independent utility or independent significance (be usable and require a reasonable expenditure even if no additional transportation improvements in the area are made).

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

Logical termini should encompass an entire project. Cutting a larger project into smaller projects may be considered "improper segmentation." A project must have independent utility; that is, a project must be able to function on its own, without further improvements.

This Initial Study/Environmental Assessment (IS/EA) assesses the possible environmental effects of proposed geometric and operational improvements along Pine Avenue from SR-71 eastward to El Prado Road as an urban four-lane arterial and to widen Pine Avenue to a four-lane arterial from El Prado Road to Euclid Avenue in the Cities of Chino and Chino Hills. This segment of Pine Avenue has been identified as needing improvements to provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand. The project is of sufficient length, with project termini logically placed, to allow environmental issues to be addressed on a broad scope. The proposed project would result in operational improvements along Pine Avenue without any additional transportation improvements being made in the area. As such, the proposed project is considered a project with independent utility.

1.3 Project Description

This section describes the proposed action and the project alternatives that were developed to meet the identified purpose and need of the project, while avoiding or minimizing environmental impacts.

- No Build Alternative
- Northern Alignment (Four Lanes) with Span Bridge (Build Alternative)(refer to Figure 3)

Currently, Pine Avenue does not exist between SR-71 and Pomona Rincon Road/Fairfield Ranch Road. Pine Avenue between Pomona Rincon Road/Fairfield Ranch Road and El Prado Road is a two-lane roadway with approximately 60-feet of right of way, which is closed to public use. East of El Prado Road, Pine Avenue is an improved two-lane roadway to Euclid Avenue. The purpose of the project is to provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand in the Cities of Chino and Chino Hills, consistent with both Cities' Circulation Elements.

Furthermore, the Pine Avenue overcrossing at Chino Creek was repaired. The repairs consisted of removal of approximately 1,120-square feet of storm-damaged asphalt and concrete, removal of one 96-inch CMP, dirt, rock, and debris within the Chino Creek streambed. Two 95-inch CMPs were installed, backfilled with cement slurry, and concrete paving was also replaced. These repairs took place between December 13, 2021 and January 7, 2022. When the technical studies for the project were initiated, Chino Creek was not improved with these repairs. As such, the technical studies prepared for the project are based on when the studies were initiated and the conditions at the time the reports were prepared.

1.4 Alternatives

The following discusses the No Build Alternative and Build Alternative for the project.

1.4.1 No Build Alternative

The No Build Alternative does not include improvements to the Pine Avenue configuration. There would continue to be no roadway between Pomona Rincon Road/Fairfield Ranch Road and SR-71 and no eastern interchange at SR-71 and Pine Avenue. Pine Avenue would continue to be a two-lane road between Pomona Rincon Road/Fairfield Ranch Road and SR-83. Due to prior flooding and degradation of the roadbed, Pine Avenue at Chino Creek has been recently repaired. The storm damaged asphalt, concrete, and CMP have been removed and replaced with two 96-inch CMPs. Between El Prado Road and Pomona Rincon Road/Fairfield Ranch Road, Pine Avenue would continue to be subject to road closures due to flooding at Chino Creek during minor storm events. The City of Chino and Chino Hills Circulation Elements specify Pine Avenue as a four-lane road between SR-71 and Euclid Avenue; therefore, the No Build Alternative would not be consistent with adopted local plans.

1.4.2 Northern Alignment (Four Lanes) with Span Bridge (Build Alternative)

This alternative would widen Pine Avenue to four lanes between Euclid Avenue and Pomona Rincon Road/Fairfield Ranch Road, provide a four-lane roadway between Pomona Rincon Road/Fairfield Ranch Road and SR-71 to match the existing ramps on the east side of SR-71, and elevate Pine Avenue to elevation 1-foot above the 2-percent chance (50-year) pool inundation level in Prado Reservoir (the elevation at which the basin floods during a 50-year storm). The proposed project is located within the City of Chino and Chino Hills and would include the following components:

- Excavation of soil from a borrow site located south of the Pine Avenue alignment located south of Chino Corona Road between Cucamonga Avenue and Hellman Avenue.

- Placement of fill materials along the project alignment to create the proposed embankment.

- Construction of seven 12-foot-wide by 5-foot-high reinforced concrete box (RCB) culverts within Chino Creek western floodplain .

- Construction of a 500-foot-long bridge structure over Chino Creek consisting of four 125-foot spans with three piers/columns spaced evenly over the creek.

- Relocation of existing sewer line under Chino Creek within the existing Pine Avenue right of way.

- Construction of a low-flow bio-swale and retention basin between proposed Pine Avenue and existing Pine Avenue right of way, immediately east of Chino Creek.

- Construction of two double 12-foot-wide by 9-foot-high RCB culverts across the Cypress Channel.

- Construction of a 14-foot-wide by 10-foot-high RCB golf cart undercrossing of Pine Avenue, east of the Cypress Channel and construct golf cart pathway on both sides of undercrossing.

- Raise existing overhead power lines located between SR-71 and Pomona Rincon Road.

- Construction of access driveway for utilities services located between SR-71 and Pomona Rincon Road.

- Construction of access driveway east of Chino Creek.

- Installation of a traffic signal at El Prado Road and Pine Avenue.

- Relocation of existing overhead utilities and utility poles along the project alignment.

- Modifications to the existing golf course and cart pathways, along El Prado Road, Pomona Rincon and Pine Avenue.

- Construction of three access driveway points east of Cypress Channel to Euclid Avenue.

- Installation of local area storm drains along Pine Avenue.

- Utilities would be adjusted or relocated, as needed, to accommodate the proposed improvements.

- Best management practices (BMPs) for water quality treatment would be provided as part of the proposed project where feasible.

- Retaining walls would be constructed, as needed, by changes in elevation that cannot be accommodated by re-grading.

- Acquisition of new permanent right of way along the project alignment would be required to accommodate the proposed improvements.

- Signage would be incorporated within the project's limits of disturbance, where necessary.

- Geotechnical borings would be conducted within the project's limits of disturbance, as needed, during construction to confirm compaction and settlement performance.

- Temporary advanced signage during construction would be required, which would involve portable changeable message signs or other temporary signage that would not require any ground disturbance.

The proposed project area is within the northern Prado Reservoir in San Bernardino County, California. Specifically, the proposed project area is located in the City of Chino and Chino Hills, along the existing Pine Avenue alignment between SR-71 and Euclid Avenue and the borrow site is located between Cucamonga Avenue and Hellman Avenue, south of Chino Corona

Road. Land uses in the vicinity include recreational/open space, the El Prado Golf Course, Chino Creek, and commercial/industrial uses.

Within the City of Chino Hills (western portion of the proposed improvements), this alternative would provide a 10-ft median, two 12-ft inner lanes, two 16-ft outer lanes, an outside curb and gutter, and two 6-ft parkways. The roadway would have a 40 to 45 miles per hour design speed and 2:1 fill slopes with the exception of the western terminus. At this location, design speed was reduced to meet the vertical curve stopping sight distance required under the California Highway Design Manual. Within the City of Chino, this alternative would provide a 12-ft median, four 12-ft travel lanes, a 13-ft southern parkway, and a 5-ft northern parkway. The roadway would have a 40 to 45 miles per hour design speed and ratio of 2:1 fill slopes. Storm flows would sheet flow from the roadway into curb and gutter inlets and to the earthen ditches that parallel Pine Avenue. Drainage would follow the existing pattern to Chino Creek or Cypress Creek.

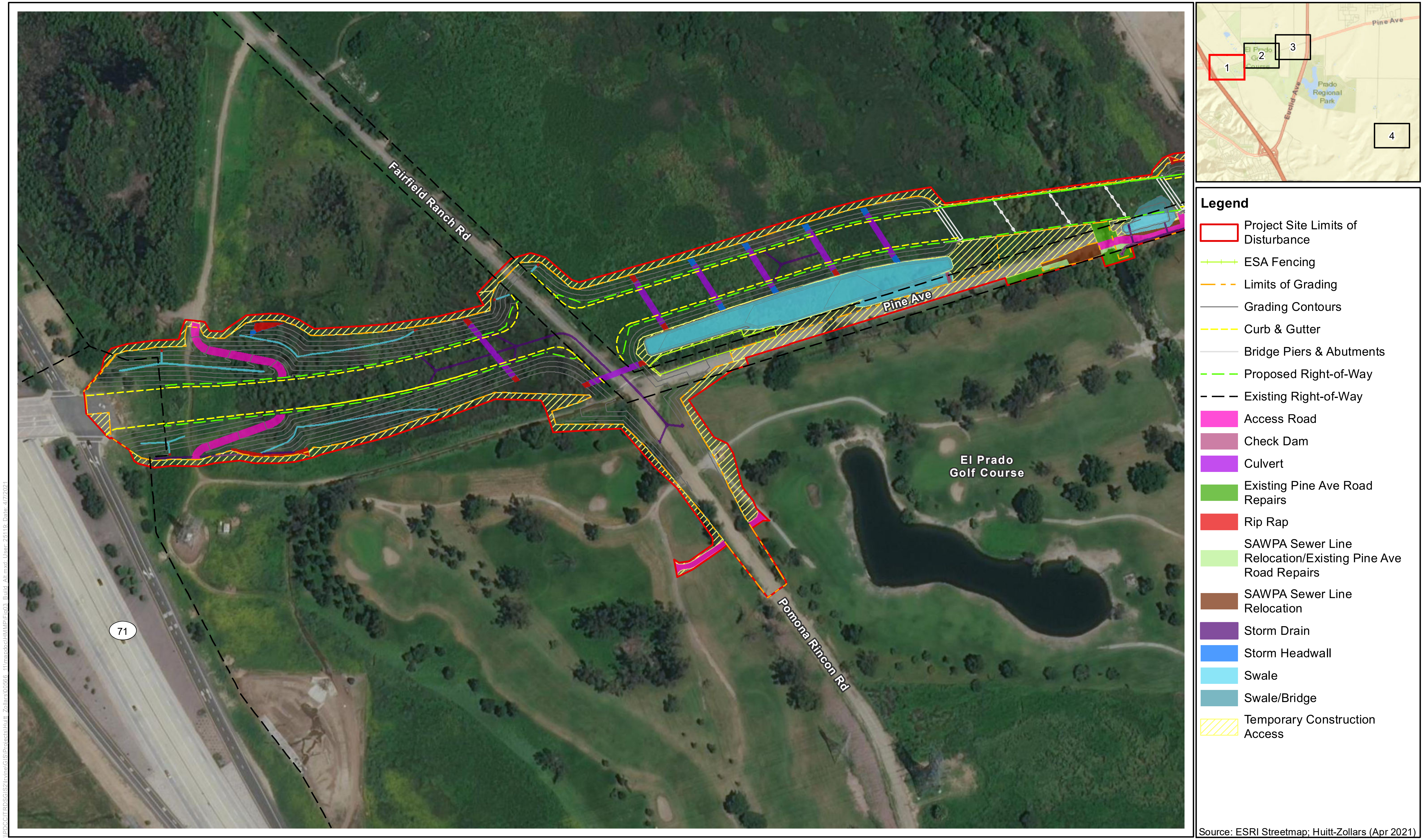
Depending on current elevations, the roadway would be elevated approximately 12 ft (west of El Prado Road), to 51 ft (at SR-71 connection) above existing grade and would slope to match the existing grade approximately at El Prado Road. A 500-foot long span bridge would be constructed over Chino Creek to accommodate the flow of stormwater along Chino Creek during a 1-percent annual chance (100-year with no inundation pool in Prado Reservoir) flood event as well as allow the unobstructed flow of the Prado Reservoir ponding water during a 50-year flood event, as well as allow the unobstructed flow of the Prado Reservoir ponding water during a 2-percent chance (50-year inundation pool elevation with flood) event. The roadway would be temporarily submerged during extreme storm events beyond the 2-percent chance (50-year) event until the ponded runoff is released downstream. In addition, the existing (3-foot-high by 15-foot-wide) culvert at Cypress Channel would be replaced to effectively pass the 1-percent annual chance (100-year) peak discharge, an existing 27-inch sewer line operated by the Santa Ana Watershed Protection Authority (SAWPA) would be relocated in the vicinity of Chino Creek to allow for construction of the Chino Creek crossing, and a low-flow bioswale and retention basin would be constructed immediately east of Chino Creek to capture stormwater runoff. Lastly, the golf course crossing east of Cypress Channel would be grade separated under Pine Avenue in order to allow for the increased traffic volumes and design speed on Pine Avenue.

Under this alternative, the alignment between SR-71 and west of El Prado Road would be shifted approximately 150 feet to the north in order to meet the California HDM transportation safety requirements for horizontal curve radii and vertical curve stopping sight distance and to comply with the County's Transportation and Mobility Element and the Cities' Circulation Elements (minimum LOS of D). The crossing at Chino Creek would not be perpendicular in order to match the existing alignment of Pine Avenue from El Prado Road eastward to Euclid Avenue.

This alternative would require fill material for the roadway embankments (roadbed and slopes), which would be placed within the impoundment area of Prado Reservoir. Approximately 350,000 cubic yards of clean earthen fill would be required, to be sourced from the proposed borrow site (refer to Figure 3, Sheet 4).

In order to provide adequate clearance between existing high voltage power lines east of SR-71 and above the proposed roadway alignment, one high voltage power line tower or steel inline

pole would be added just south of Pine Avenue. Permanent right of way would be required from properties north and south of Pine Avenue in order to accommodate the roadway widening. These parcels include one owned by the City of Chino Hills, 17 owned by the USACE, two owned by the County of Orange, and up to 10 private properties. In order for the project to match the proposed widening of Euclid Avenue, additional right of way is required from the parcels in the northwest and southwest quadrants of Euclid Avenue and Pine Avenue. In addition, TCEs would be required north and south of Pine Avenue along the alignment.


Fairfield Ranch Rd
Pine Ave
Pomona Rincon Rd
El Prado Golf Course
71
Pine Ave
El Prado
Prado Regional Park
Euclid Ave
1
2
3
4
Legend
Project Site Limits of Disturbance
ESA Fencing
Limits of Grading
Grading Contours
Curb & Gutter
Bridge Piers & Abutments
Proposed Right-of-Way
Existing Right-of-Way
Access Road
Check Dam
Culvert
Existing Pine Ave Road Repairs
Rip Rap
SAWPA Sewer Line Relocation/Existing Pine Ave Road Repairs
SAWPA Sewer Line Relocation
Storm Drain
Storm Headwall
Swale
Swale/Bridge
Temporary Construction Access
Source: ESRI Streetmap; Huitt-Zollars (Apr 2021)

N

0 100 200 Feet

1:2,400

Figure 3 - Sheet 1
Build Alternative
Pine Avenue Extension Project

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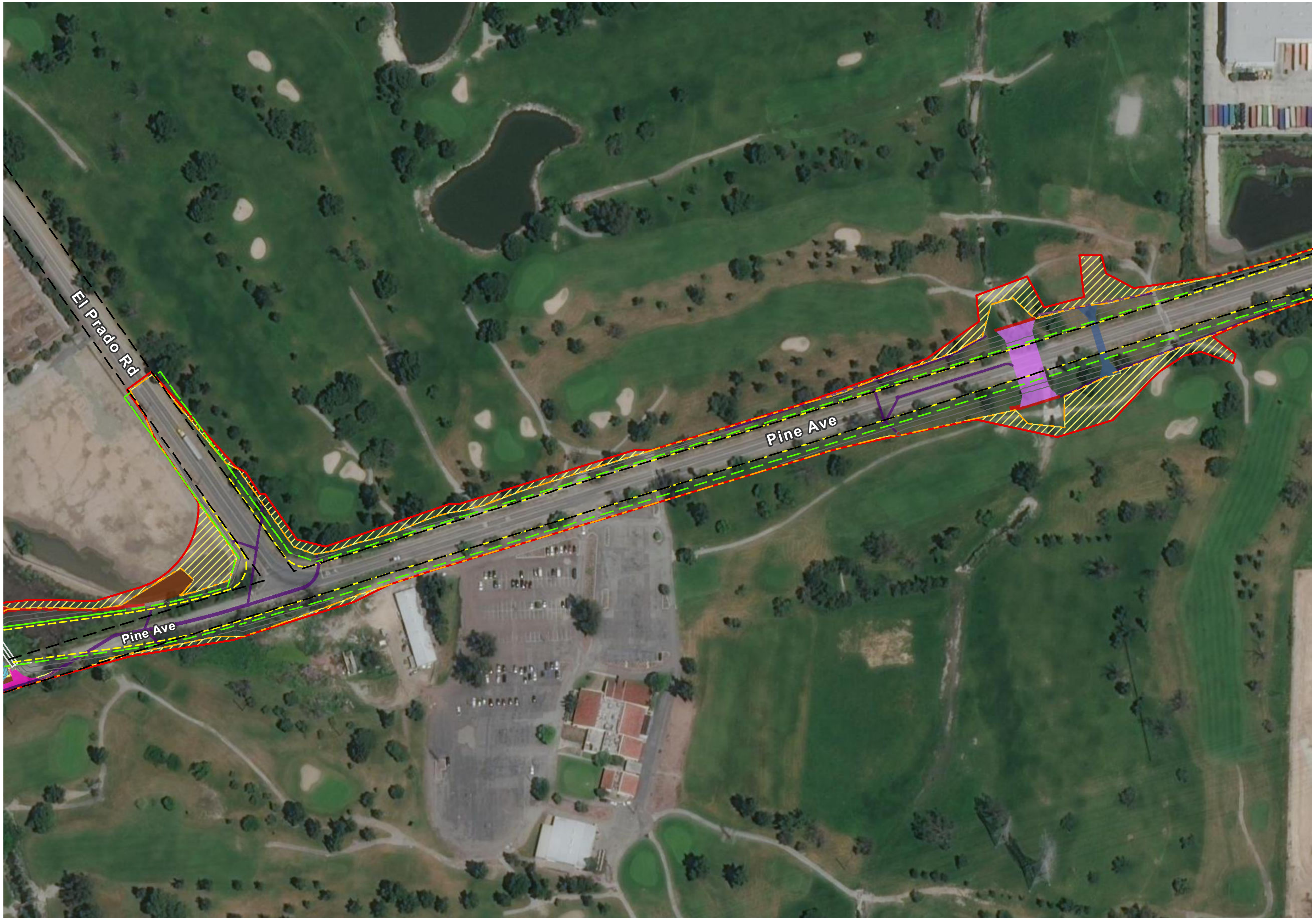

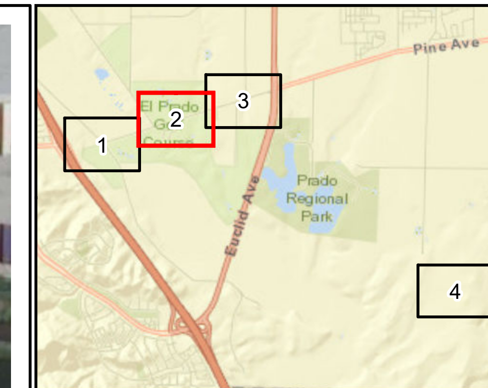

Legend

- Project Site Limits of Disturbance
- Limits of Grading
- Grading Contours
- Curb & Gutter
- Bridge Piers & Abutments
- Proposed Right-of-Way
- Existing Right-of-Way
- 4 Adjacent Culverts
- Access Road
- Golf Cart Crossing
- Rip Rap
- SAWPA Sewer Line Relocation
- Storm Drain
- Swale
- Swale/Bridge
- Temporary Construction Access

Source: ESRI Streetmap; Huitt-Zollars (Apr 2021)

N

0 100 200 Feet

1:2,400

Figure 3 - Sheet 2
Build Alternative
Pine Avenue Extension Project

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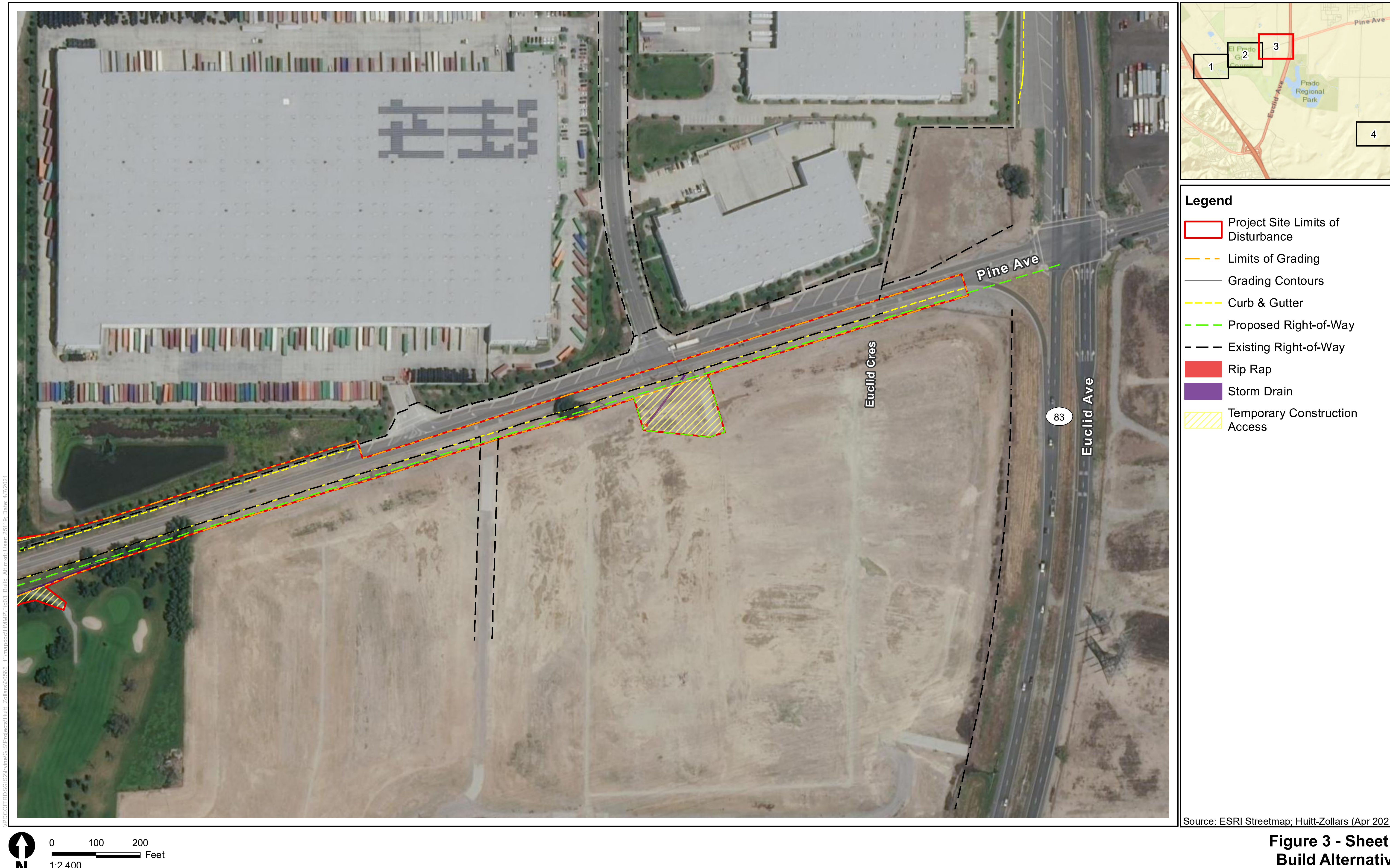

Figure 3 - Sheet 3
Build Alternative
Pine Avenue Extension Project

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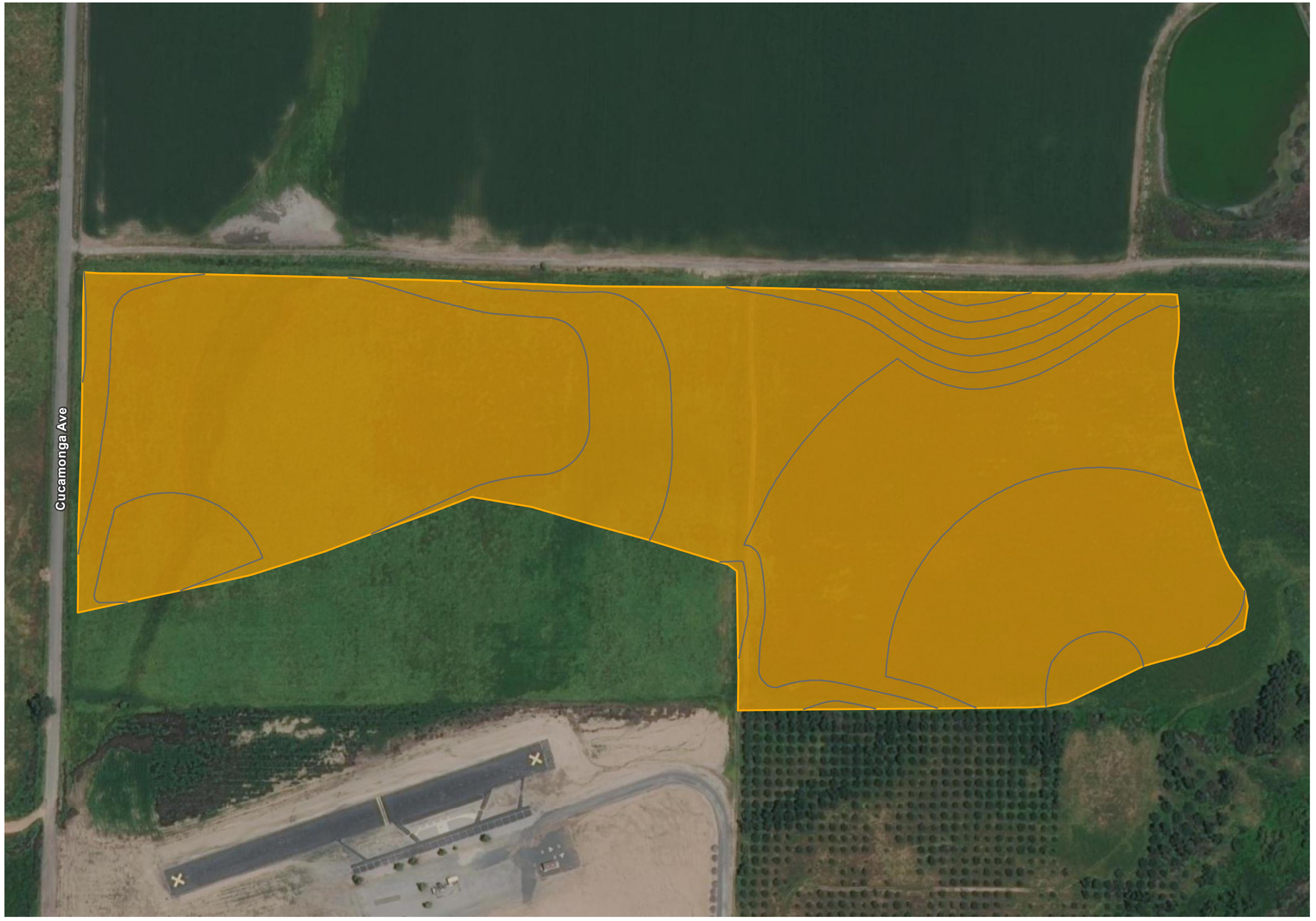

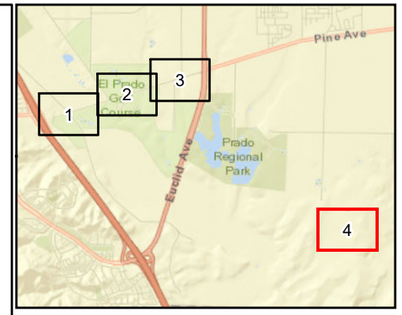

Legend

- Borrow Site Limits of Disturbance
- Grading Contours
- Borrow Site

Source: ESRI Streetmap; Huitt-Zollars (Apr 2021)

N

0 100 200 Feet

1:2,400

Figure 3 - Sheet 4
Build Alternative
Pine Avenue Extension Project

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1.4.2.1 STANDARDIZED DESIGN FEATURES

This project contains a number of standardized project measures that 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. The measures, listed below, are addressed in more detail in the Environmental Consequences sections found in Chapter 2.

- Specifications related to the discovery of unanticipated cultural materials or human remains.
- Specifications related the discovery of nesting and migratory birds.
- Specifications for removing yellow traffic stripe and pavement markings with hazardous waste residue.
- Specifications related to residue containing lead from paint and thermoplastic.
- Specifications for removing traffic stripes and pavement marking containing lead.
- Specifications for handling, removing, and disposing of earth material containing lead.
- Specifications for performing work involving residue from grinding or cold planning that contains lead from paint and thermoplastic.
- Specifications for construction site BMPs, including complying with U.S. Environmental Protection Agency's (EPA's) Construction General Permit, discharges of stormwater from the job site, compliance with permits issues by RWQCB for National Pollutant Discharge Elimination System (NPDES) Permit, and permits governing stormwater and non-stormwater discharges resulting from construction activities at the job site.
- Specifications for wood waste treatment.
- Specifications related to inspecting and cleaning all construction equipment prior to transporting equipment from one project location to another to avoid the introduction and spread of invasive plant species.
- Specifications related to complying with the provisions of the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Order No. 2009 0009 DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012 0006 DWQ, NPDES No. CAS000002), and any subsequent permit, as they relate to construction activities for the project. This shall include submission of the permit registration documents, including a Notice of Intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement to the State Water Resources Control Board (SWRCB) at least 14 days prior to the start of construction activity. The SWPPP shall 1) meet the requirements of the Construction General Permit and identify potential pollutant sources associated with construction activities; 2) identify non-storm water discharges; and 3) identify, implement, and maintain BMPs to reduce or eliminate pollutants associated with the construction site. The BMPs identified in the SWPPP shall be implemented during the project construction. A Notice of Termination shall be submitted to SWRCB upon completion of construction and the stabilization of the site.

- Specifications related to complying with the provisions of the General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality, Order No. R8-2009-0003, NPDES No. CAG998001, as they relate to discharge of non-storm water dewatering wastes for the project. This shall include submitting to the Regional Water Quality Control Board (RWQCB) an NOI at least 60 days prior to the start of construction, and notification of discharge at least five days prior to any planned discharges.

- Specifications related to complying with the provisions of the Section 401 Water Quality Certification from the Santa Ana RWQCB, a Section 404 permit from the U.S. Army Corps of Engineers (USACE), and a Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW) for impacts on jurisdictional areas. These regulatory permits shall be obtained prior to impacts within identified jurisdictional areas.

- Specifications related to complying with the provisions of the Caltrans Statewide NPDES Permit (Order No. 2012-0011-DWQ, NPDES No. CAS000003), effective July 1, 2013 (known as the Caltrans MS4 permit). Project-specific BMPs and any applicable hydromodification features shall be incorporated into final design. The BMPs shall be properly designed and maintained to target pollutants of concern and reduce runoff from the project site.

1.4.3 Transportation System Management and Transportation Demand Management Alternatives

1.4.3.1 TRANSPORTATION SYSTEM MANAGEMENT ALTERNATIVES

Transportation System Management (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. Other TSM strategies include encouraging the public to use public and private transit and ridesharing programs.

Although no specific TSM features are included as part of the project, the proposed project serves a transportation system management purpose by providing an efficient, additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand in the Cities of Chino and Chino Hills; therefore, the proposed project is considered consistent with TSM goals and will support the continued safe and efficient operation of SR-71 within the project limits once it is in place.

1.4.4 Locally Preferred Alternative

After comparing and weighing the benefits and impacts of all feasible alternatives, the City of Chino has identified the Northern Alignment (Four Lanes) with Span Bridge (Build Alternative) as the locally preferred alternative, subject to public review. Final identification of a preferred alternative will occur after the public review and comment period.

1.4.5 Final Decision-Making Process

After the public circulation period, all comments received will be considered, and Caltrans will select a preferred alternative and make the final determination of the project's effect on the environment. Under CEQA regulations, if no unmitigable significant adverse impacts are identified, the City of Chino will prepare a Negative Declaration (ND) or Mitigated ND.

Similarly, if Caltrans, as assigned by the FHWA, determines the NEPA action does not significantly impact the environment, Caltrans will issue a Finding of No Significant Impact (FONSI).

1.4.6 Alternatives Considered But Eliminated From Further Discussion

1.4.6.1 REVERSIBLE LANES

Assembly Bill 2542 amended California Streets and Highways code to required, effective January 1, 2017, that the Department 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). However, reversible lanes were not considered for the project because it is 100 percent locally funded and was programmed prior to January 1, 2017.

The following alternatives were considered as part of the development and design of the Build Alternative, but were eliminated from further discussion.

- Northern Alignment (four lanes) with Culverts at Chino Creek. This alternative would widen Pine Avenue to four lanes between Euclid Avenue and Pomona Rincon Road/Fairfield Ranch Road, and provide a four-lane roadway between Pomona Rincon Road/ Fairfield Ranch Road and SR-71 to match the existing ramps on the east side of SR-71. The crossing at Chino Creek would consist of 80 (5 foot high by 12 foot wide) culverts which would encompass approximately 960 linear feet of the roadway corridor. Within the City of Chino Hills (western portion of the proposed improvements), this alternative would provide a 10-foot median, two 12-foot inner lanes, two 16-foot outer lanes, an outside curb and gutter, and two 6-foot parkways. The roadway would have a 40 to 45 miles per hour design speed and 2:1 fill slopes with the exception of the western terminus. At this location, design speed was reduced to 50 miles per hour in order to meet the vertical curve stopping sight distance required under the California Highway Design Manual (HDM). Within the City of Chino, this alternative would provide a 12-foot median, four 12-foot travel lanes, a 13-foot southern parkway, and a 5-foot northern parkway. The roadway would have a 40 to 45 miles per hour design speed and ratio of 2:1 fill slopes. Storm flows would sheet flow from the roadway into curb and gutter inlets and to the earthen ditches that parallel Pine Avenue. Drainage would follow the existing pattern to Chino Creek or Cypress Channel.

The roadway would be elevated approximately 12 feet (west of El Prado Road) to 51 feet (at SR-71 connection) above the existing grade and would slope to existing grade approximately at El Prado Road. The crossing at Chino Creek would not be perpendicular in order to match the existing alignment of Pine Avenue from El Prado Road eastward to Euclid Avenue. The culverts proposed under this alternative would be designed to accommodate the flow of stormwater along Chino Creek during a 1-percent annual chance (100-year) flood event as well as allow the unobstructed flow of the Prado Basin ponding water during a 2-percent chance (50-year) event. The roadway would be temporarily submerged during extreme storm events beyond the 2-percent chance (50-year) event until the ponded runoff is released downstream. In addition, the existing culvert at Cypress Channel would be replaced, the existing sewer line operated by SAWPA would be relocated in the vicinity of Chino Creek, and a low-flow bioswale and retention basin would be constructed immediately east of Chino Creek. Lastly, the golf course crossing east of Cypress Channel would be grade separated under Pine Avenue.

This alternative would require fill material for the roadway embankments, which would be placed within the impoundment area of Prado Reservoir. This alternative would require approximately 392,000 cubic yards of clean earthen fill, 42,000 cubic yards greater than the proposed Build Alternative, largely to accommodate the construction of culverts at Chino Creek. The available export fill from the proposed borrow site is approximately 350,000 cubic yards, so the applicant would need to identify and purchase an additional borrow site in order to meet this fill requirement. A high voltage power line tower or steel inline pole would be added just south of Pine Avenue. In addition, permanent right of way would be required from properties north and south of Pine Avenue in order to accommodate the roadway widening. These parcels include one owned by the City of Chino Hills, 17 owned by the USACE, two owned by the County of Orange, and up to 10 private properties.

The regional development of the area, including substantial commercial, residential, and transportation expansions, has resulted in substantial losses of habitat and caused extensive habitat fragmentation within the vicinity of the proposed project location. These impacts have resulted in wildlife population and habitat isolation, constrained or obstructed movement and connectivity, loss of genetic exchange among and between wildlife populations resulting in population declines, increasing wildlife mortality caused by wildlife-vehicle collisions, and behavioral changes such as habitat avoidance due to increased disturbances from human developments. The areas in the regional vicinity of the proposed project location are situated near important undeveloped, natural landscape blocks including Chino Hills State Park to the west, the Santa Ana Mountains to the southwest, and the Prado Reservoir and Santa Ana River to the south and southeast. These natural landscape blocks contain important wildlife habitat including home ranges to a wide variety of terrestrial and aquatic species, including federally-listed species and designated critical habitat. The lands to the north of the project are predominately commercial and agricultural areas with some intermixed commercial and residential developments further north. With regard to conservation value, the proposed project location is identified in the California Essential Habitat Connectivity (CEHC) Project as a small Natural Area and is located immediately adjacent to a CEHC Natural Landscape Block (Caltrans and California Department of Fish and Wildlife, February 2010).

In contrast to the Build Alternative, the implementation of this alternative would utilize culverts at Chino Creek and is expected to result in further degradation of remaining wildlife habitats as well as fragmentation of habitats and wildlife corridors. Furthermore, this alternative would require fill material for the roadway embankments. This alternative would require approximately 370,000 cubic yards of clean earthen fill. The available export fill from the proposed borrow site is approximately 350,000 cubic yards, so this alternative would need to identify and purchase an additional borrow site in order to meet the extra fill requirement, which would result in a significant cost and logistics impediment. This alternative would result in other significant adverse environmental impacts (i.e., least Bell's vireo habitat) with the culvert encroachment into the Chino Creek floodplain. As such, this alternative is not considered a practicable alternative to the Build Alternative.

- Central Alignment (Six Lanes) with Span Bridge at Chino Creek Alternative. This alternative would have six lanes to accommodate additional forecasted traffic demands, and the alignment at the western terminus of the project would be shifted approximately 150 feet to the south in order to reduce impacts to the flood control basin at this location (Pine Avenue/SR-71 interchange). This alternative would require reverse curves between SR-71 and the Pomona Rincon Road/Fairfield Ranch Road intersection and would merge with the existing centerline alignment of Pine Avenue to the east of Pomona Rincon Road/Fairfield Ranch Road. The implementation of this alternative would widen Pine Avenue to six lanes between Euclid Avenue and Pomona Rincon Road/Fairfield Ranch Road, provide a new six-lane roadway between Pomona Rincon Road/Fairfield Ranch Road and SR-71 to match the existing ramps on the east side of SR-71, and elevate Pine Avenue above the 2-percent chance (50-year) pool elevation within Prado Reservoir. Within the City of Chino Hills, this alternative would provide a 10-foot (ft) median, four 12-foot inner lanes, two 16-foot outer lanes, an outside curb and gutter, and two 6-foot parkways. The road would have a 40 to 45 miles per hour design speed and 2:1 slopes, with the exception of the western section between SR-71 and Pomona Rincon Road/Fairfield Ranch Road. At this location, in order to comply with the California HDM transportation safety requirements for horizontal curve radii and vertical curve stopping sight distance, the proposed reverse curve would require a speed reduction to 25 miles per hour. Within the City of Chino, this alternative would provide a 12-foot median, six 12-foot travel lanes, a 13-foot southern parkway, and a 5-foot northern parkway. The road would have a 40 to 45 miles per hour design speed and 2:1 fill slopes. The storm flows would sheet flow from the roadway into curb and gutter inlets and to the earthen ditches that parallel Pine Avenue. Drainage would follow the existing pattern to Chino Creek or Cypress Channel.

  Depending on current elevations, the roadway would be elevated approximately 13 feet (west of El Prado Road) to 49 feet (at SR-71 connection) above existing grade and would slope to existing grade approximately at El Prado Road. A 500-foot-long span bridge would be constructed over Chino Creek to accommodate the flow of stormwater along Chino Creek during a 1-percent annual chance (100-year) flood event as well as allow the unobstructed flow of the Prado Reservoir ponding water during a 2-percent chance (50-year) flood event. In the event of extreme storm events beyond the 2-percent (50-year) event, the roadway would be temporarily submerged until the ponded runoff is

released downstream. In addition, the existing culvert at Cypress Channel would be replaced, the existing sewer line operated by SAWPA would be relocated in the vicinity of Chino Creek, and a low-flow bioswale and retention basin would be constructed immediately east of Chino Creek. Furthermore, the existing alignment of Pine Avenue from El Prado Road westward to Pomona Rincon Road/Fairfield Ranch Road would be abandoned. Lastly, under this alternative, the golf course crossing east of Cypress Channel would be grade separated under Pine Avenue.

This alternative would require fill material for the roadway embankments, which would be placed within the impoundment area of Prado Reservoir. This alternative would require approximately 388,790 cubic yards of clean earthen fill, approximately 39,000 cubic yards greater than the Build Alternative, largely to accommodate the addition of two more lanes (six lanes total). The available export fill from the proposed borrow site is approximately 350,000 cubic yards, so the applicant would need to identify and purchase an additional borrow site in order to meet this fill requirement.

In order to provide adequate clearance between existing high voltage power lines east of SR-71 and above the proposed roadway alignment, one high voltage power line tower or steel inline pole would be added just south of Pine Avenue. Permanent right of way would be required from properties north and south of Pine Avenue in order to accommodate the roadway widening. Compared with the Build Alternative, approximately 2 additional properties would require permanent right of way, and 2 additional TCEs would be required north and south of Pine Avenue in order to accommodate six lanes. These parcels include 1 owned by the City of Chino Hills, 12 owned by USACE, 3 owned by the County of Orange, and 1 private properties. In order for the project to match the proposed widening of Euclid Avenue, additional right of way is required from the parcels in the northwest and southwest quadrants of Euclid Avenue and Pine Avenue. In addition, TCEs would be required north and south of Pine Avenue along the alignment.

As mentioned, under this alternative the alignment at the western terminus of the project would be shifted approximately 150 feet to the south in order to reduce impacts to the flood control basin at this location (Pine Avenue/SR-71 interchange. Based on the City of Chino General Plan and design criteria, the reverse curve radii required for this alternative to accommodate the southerly realignment at the western terminus between SR-71 and the Pomona Rincon Road/Fairfield Ranch Road would not meet the California Highway Design Manual (HDM) transportation safety requirements for horizontal curve radii and vertical curve stopping sight distance and further would not qualify for a substantial conformance exception. In addition, this alternative would not comply with the County's Transportation and Mobility Element or the Cities' General Plan Circulation Elements. Specifically, the proposed reverse curve would require a speed reduction to 25 miles per hour and present an unacceptable hazard to the public. In addition, this reverse curve would likely also impact the level of service objectives for the Pine Avenue/SR-71 interchange of minimum LOS of D. As previously mentioned, this alternative would also require approximately 388,790 cubic yards of clean earthen fill. With the available export fill from the proposed borrow site at approximately 350,000 cubic yards, this alternative would need to identify and purchase an additional borrow site in order to meet the extra

fill requirement, which would result in a significant cost and logistics impediment. Land acquisition and construction of this alternative would cost approximately $41.4 million, an approximately 19 percent increase over the Build Alternative. Due to cost and logistical impediments, this alternative is not considered a practicable alternative to the Build Alternative.

- Central Alignment (Four Lanes) with Span Bridge at Chino Creek Alternative. This alternative would have the same alignment, design speeds, fill slopes, and stormwater drainage facilities as described under the Central Alignment (Six Lanes) with Span Bridge at Chino Creek alternative, except the improvement would result in four lanes rather than six lanes.

  This alternative would require reverse curves between SR-71 and the Pomona Rincon Road/Fairfield Ranch Road intersection and would merge with the existing centerline alignment of Pine Avenue to the east of Pomona Rincon Road/Fairfield Ranch Road. The implementation of this alternative would widen Pine Avenue to four lanes between Euclid Avenue and Pomona Rincon Road/Fairfield Ranch Road, provide a new four-lane roadway between Pomona Rincon Road/Fairfield Ranch Road and SR-71 to match the existing ramps on the east side of SR-71, and elevate Pine Avenue above the 2-percent chance (50-year) pool elevation within Prado Reservoir. Within the City of Chino Hills, this alternative would provide a 10-foot median, two 12-foot inner lanes, two 16-foot outer lanes, an outside curb and gutter, and two 6-foot parkways. The road would have a 40 to 45 miles per hour design speed and 2:1 slopes, with the exception of the western section between SR-71 and Pomona Rincon Road/Fairfield Ranch Road. At this location, in order to comply with the California HDM transportation safety requirements for horizontal curve radii and vertical curve stopping sight distance, the proposed reverse curve would require a speed reduction to 25 miles per hour. Within the City of Chino, this alternative would provide a 12-foot median, four 12-foot travel lanes, a 13-foot southern parkway, and a 5-foot northern parkway. The road would have a 40 to 45 miles per hour design speed and 2:1 fill slopes. Storm flows would sheet flow from the roadway into curb and gutter inlets and to the earthen ditches that parallel Pine Avenue. Drainage would follow the existing pattern to Chino Creek or Cypress Channel.

  Depending on current elevations, the roadway would be elevated approximately 13 feet (west of El Prado Road) to 49 feet (at SR-71 connection) above existing grade and would slope to existing grade approximately at El Prado Road. A 500-foot-long span bridge would be constructed over Chino Creek to accommodate the flow of stormwater along Chino Creek during a 1-percent chance (100-year) flood event as well as allow the unobstructed flow of the Prado Reservoir ponding water during a 2-percent chance (50-year) flood event. In the event of extreme storm events beyond the 2-percent chance (50-year) event, the roadway would be temporarily submerged until the ponded runoff is released downstream. In addition, the existing culvert at Cypress Channel would be replaced, the existing 27-inch sewer line operated by SAWPA would be relocated in the vicinity of Chino Creek, and a low-flow bioswale and retention basin would be constructed immediately east of Chino Creek. Furthermore, the existing alignment of Pine Avenue from El Prado Road westward to Pomona Rincon Road/Fairfield Ranch

Road would be abandoned. Lastly, the golf course crossing east of Cypress Channel would be grade separated under Pine Avenue.

This alternative would require fill material for the roadway embankments, which would be placed within the impoundment area of Prado Reservoir. This alternative would require approximately 350,000 cubic yards of clean earthen fill.

In order to provide adequate clearance between existing high voltage power lines east of SR-71 and above the proposed roadway alignment, one high voltage power line tower or steel inline pole would be added just south of Pine Avenue. Permanent right of way would be required from properties north and south of Pine Avenue in order to accommodate the roadway widening. In comparison with Build Alternative, approximately 17 properties would require permanent right of way. These parcels include 1 owned by the City of Chino Hills, 12 owned by USACE, 3 owned by the County of Orange, and 1 private properties. In order for the project to match the proposed widening of Euclid Avenue, additional right of way is required from the parcels in the northwest and southwest quadrants of Euclid Avenue and Pine Avenue. In addition, TCEs would be required north and south of Pine Avenue along the alignment.

As mentioned above, this alternative would require reverse curves between SR-71 and the Pomona Rincon Road/Fairfield Ranch Road intersection The reverse curve radii required to accommodate the southerly realignment would not meet the California HDM transportation safety requirements for horizontal curve radii and vertical curve stopping sight distance and further would not qualify for a substantial conformance exception. In addition, this alternative would not comply with the County's Transportation and Mobility Element or the Cities' Circulation Elements. Specifically, the proposed reverse curve would require a speed reduction to 25 miles per hour and present an unacceptable hazard to the public. The reverse curve would likely also impact the level of service objectives for the Pine Avenue/SR-71 interchange minimum of LOS D. Based on the above, this alternative is not consistent with the overall project purpose and not considered a practicable alternative.

- Straight Alignment (Four Lanes) Alternative. This alternative would widen Pine Avenue to four lanes between Euclid Avenue and Pomona Rincon Road/Fairfield Ranch Road and SR-71 to match the existing ramps on the east side of SR-71, and elevate Pine Avenue above the 2-percent chance (50-year) flood in Prado Reservoir. Within the City of Chino Hills, this alternative would provide a 10-ft median, two 12-ft inner lanes, two 16-ft outer lanes, an outside curb and gutter, and two 6-ft parkways. The roadway would have a 40 to 45 miles per hour design speed and a ratio of 2:1 fill slopes. Within the City of Chino, this alternative would provide a 12-ft median, four 12-ft travel lanes, a 13-ft southern parkway, and a 5-ft northern parkway.

  The roadway would be elevated approximately 13 ft, to 50 ft above existing grade between SR-71 and El Prado Road and would slope to existing grade approximately at El Prado Road.

This alternative would provide a straight alignment from SR-71 and contains one curve just east of Pomona Rincon Road/Fairview Ranch Road. This alternative would shift the Pomona Rincon Road/Fairfield Ranch Road approximately 70 ft to the north and would create a greater skew at the intersection of Pine Avenue and Pomona Rincon Road/Fairfield Ranch Road.

This alternative would require fill material for the roadway embankments, which would be placed within the impoundment area of Prado Reservoir. This alternative would require approximately 342,000 cubic yards of fill.

Permanent right of way would be required from properties north and south of Pine Avenue in order to accommodate the roadway widening. These parcels include one owned by the City of Chino Hills, several owned by the USACE, two owned by the County of Orange, and 10 private properties. In order for the project to match the proposed widening of Euclid Avenue, additional right of way is required from the parcels in the northwest and southwest quadrants of Euclid Avenue and Pine Avenue. TCEs would be required north and south of Pine Avenue along the alignment. The golf course crossing east of Cypress Creek would be grade separated under Pine Avenue in order to allow for the increased traffic volumes and design speed.

Similar to the Central Alignment, this alternative would require a curve between SR-71 and the Pomona Rincon Road/Fairfield Ranch Road intersection. The curve radii required would not meet the California HDM transportation safety requirements for horizontal curve radii and vertical curve stopping sight distance and further would not qualify for a substantial conformance exception. In addition, this alternative would not comply with the County's Transportation and Mobility Element or the Cities' Circulation Elements. Specifically, the proposed curve would require a speed reduction to 25 miles per hour and present an unacceptable hazard to the public. The curve would likely also impact the level of service objectives for the Pine Avenue/SR-71 interchange minimum of LOS D. Based on the above, this alternative is not consistent with the overall project purpose and not considered a practicable alternative.

- Full Span Suspension Bridge Alternative. With this alternative Pine Avenue would be widened to four lanes between Euclid Avenue and Pomona Rincon Road/Fairfield Ranch Road, provide a four-lane roadway between Pomona Rincon Road/Fairfield Ranch Road and SR-71 to match the existing ramps on the east side of SR-71, and elevate Pine Avenue above the 2-percent chance (50-year) flood level in Prado Reservoir. Under this alternative, two bridges would be constructed, consisting of a 1,000-foot full span suspension bridge over the flood control basin (identified as Feature 2) at the western terminus of the project and a 500-foot span bridge over Chino Creek. The suspension bridge over Feature 2 would merge with the existing centerline alignment of Pine Avenue to the east of Pomona Rincon Road/Fairfield Ranch Road.

  Within the City of Chino Hills, this alternative would provide a 10-foot median, two 12-foot inner lanes, two 16-foot outer lanes, an outside curb and gutter, and two 6-foot parkways. The roadway would have a 40 to 45 miles per hour design speed and 2:1 fill slopes. Within the City of Chino, this alternative would provide a 12-foot median, four

12-foot travel lanes, a 13-foot southern parkway, and a 5-foot northern parkway. The roadway would have a 40 to 45 miles per hour design speed and ratio of 2:1 fill slopes. Storm flows would sheet flow from the roadway into curb and gutter inlets and to the earthen ditches that parallel Pine Avenue. Drainage would follow the existing pattern to Chino Creek or Cypress Creek.

Depending on current elevations, the roadway would be elevated approximately 12 feet (west of El Prado Road) to 51 feet (at SR-71 connection) above existing grade and would slope to existing grade approximately at El Prado Road. An approximately 1,000-foot-long suspension bridge would be constructed over Feature 2 (flood control basin) at the western project terminus. The bridge would be designed to avoid all wetland and non-wetland waters of the U.S./State identified within a flood control basin (Feature 2). In addition, a 500-foot-long span bridge would be constructed over Chino Creek. In the event of extreme storm events beyond the 2-percent chance (50-year) event, the roadway would be temporarily submerged until the ponded runoff is released downstream. In addition, the existing culvert at Cypress Channel would be replaced, the existing sewer line operated by SAWPA would be relocated in the vicinity of Chino Creek, and a low-flow bioswale and retention basin would be constructed immediately east of Chino Creek. The existing alignment of Pine Avenue from El Prado Road westward to Pomona Rincon Road/Fairfield Ranch Road would be abandoned. Lastly, the golf course crossing east of Cypress Channel would be grade separated under Pine Avenue.

This alternative would require fill material for the roadway embankments (roadbed and slopes), which would be placed within the impoundment area of Prado Reservoir. Approximately 120,000 cubic yards of clean earthen fill would be required, to be sourced from the proposed borrow site.

In order to provide adequate clearance between existing high voltage power lines east of SR-71 and above the proposed roadway alignment, one high voltage power line tower or steel inline pole would be added just south of Pine Avenue. Permanent right of way would be required from properties north and south of Pine Avenue in order to accommodate the roadway widening. These parcels include 1 owned by the City of Chino Hills, 12 owned by the USACE, 3 owned by the County of Orange, and up to 1 private properties. In order for the project to match the proposed widening of Euclid Avenue, additional right of way is required from the parcels in the northwest and southwest quadrants of Euclid Avenue and Pine Avenue. In addition, TCEs would be required north and south of Pine Avenue along the alignment.

Construction of this alternative would cost approximately $111.5 million dollars, a 221 percent increase over the Build Alternative. Based on available funding, including federal cost share, this alternative would not be advanced to construction. The full span suspension bridge would also result in aesthetic and visual impacts due to the size and proportion to the surrounding area. Due to the reasons mentioned above, this alternative is not considered a practicable alternative.

- Euclid Avenue Improvements (Off-Site) Alternative. This off-site alternative would consist of widening and improving the existing roadway at South Euclid Avenue,

including the South Euclid Avenue/SR-71 interchange, to accommodate increased traffic. Specifically, this alternative would expand South Euclid Avenue from four lanes to eight lanes between SR-71 and Pine Avenue (approximately 1.65 miles). The roadway would have a 40 to 45 miles per hour design speed and ratio of 2:1 fill slopes.

In order to construct this alternative, the Euclid Avenue roadbed would need to be elevated 15 to 35 feet to meet flood safety requirements (i.e., above the 2-percent chance (50-year) pool inundation level in Prado Reservoir) as well as the current elevation of SR-71 and industry-standard grade requirements. In addition, an approximately 500-foot-long span bridge would be constructed over Chino Creek to accommodate the flow of stormwater along Chino Creek during a 1-percent annual chance (100-year flood event with no inundation pool in Prado Reservoir) as well as allow the unobstructed flow of the Prado Reservoir ponding water during a 2-percent chance (50-year inundation pool elevation with flood) event. Similar to all other build alternatives, the roadway would be temporarily submerged during extreme storm events beyond the 2-percent chance (50-year) event until the ponded runoff is released downstream. The volume of roadbed fill and slope fill that would be required are approximately 355,000 cubic yards and 120,000 cubic yards, respectively. The available export fill from the proposed borrow site located approximately 2.1 miles to the southeast of the proposed project location is approximately 350,000 cubic yards, so the applicant would need to identify and purchase an additional borrow site in order to meet this fill requirement.

Permanent right of way would be required from properties north and south of Euclid Avenue in order to accommodate the roadway widening. These parcels include two owned by the City of Chino Hills, seven owned by the USACE, four owned by the County of Orange, and up to one private property. In addition, temporary construction easements (TCEs) would be required north and south of Euclid Avenue along the proposed alignment.

Compared with the Build Alternative this alternative would result in substantially greater permanent and temporary impacts to wetland and non-wetland waters of the U.S./State. Specifically, this alternative would result in approximately 9.00 acres of permanent impacts and 2.42 acres of temporary impacts to wetland waters of the U.S. and approximately 3.20 acres of permanent impacts and 0.73 acre of temporary impacts to non-wetland waters of the U.S. The construction of this alternative would cost approximately $75.8 million, an approximately 118 percent increase over the Build Alternative. In addition, the volume of roadbed fill and slope fill that would be required for this alternative would total approximately 475,000 cubic yards. As the available export fill from the proposed borrow site is approximately 350,000 cubic yards, a separate borrow site will need to be identified and purchased in order to meet this extra fill requirement which would result in a significant cost and logistics impediment. Furthermore, as this alternative is located within the Prado Reservoir inundation area, fill cannot be imported from outside of the inundation area based on basin capacity and flood safety requirements, which presents an additional logistical constraint for this alternative. As such, this alternative was not considered a practicable alternative to the proposed project.

1.5 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications (PLACs) listed in the following table would be required for project construction.

Table 1.5-1. Required Permits, Reviews, and Approvals

Agency	Permit/Approval	Status
California Department of Fish and Wildlife	-1600 Streambed Alteration Agreement -2081 Incidental Take Permit	-Application submitted to CDFW for review. Draft permit received 06/09/21, revised draft received 04/27/22, final permit anticipated August 2022. -Application submitted to CDFW. Draft permit received 10/25/21, final permit anticipated August 2022.
Regional Water Quality Control Board	Porter-Cologne Act and CWA Section 401 Water Quality Certification	-Application submitted for review. Permit issuance anticipated August 2022.
U.S. Army Corps of Engineers	- CWA Section 404 -404(b)(1) Analysis	-Application submitted for review. Permit issuance anticipated August 2022. - Submitted to USACE. Permit issuance anticipated August 2022.
California Department of Transportation	Assumption of Eligibility Memorandum	Approved by Caltrans Cultural Studies Office (CSO) on 01/25/2021.
U.S. Fish and Wildlife Service	Biological Opinion (BO), BO Amendment	Received from USFWS in June 2020. BO Amendment pending, ongoing coordination with USFWS.
State Water Resources Control Board	Clean Water Act Section 402 –NPDES. A SWPPP required by the General NPDES Construction Permit will be prepared and provide necessary temporary pollution and erosion control measures required during construction.	To be submitted after approval of Final Environmental Document.
Federal Highway Administration	Air Quality Conformity Determination	FHWA's air quality conformity analysis determination letter will be obtained prior to approval of the final Environmental Document for the project.
City of Chino Hills	Encroachment Permit	Ongoing discussions between Chino and Chino Hills.
City of Chino	Encroachment Permit	Encroachment permit plans in review with City of Chino.
San Bernardino County Flood Control District	Encroachment Permit	Final permit document submitted July 2022.

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

As part of the scoping and environmental analysis carried out for the 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.

- Coastal Zone: The proposed project is not in the vicinity of a coastal zone.
- Wild and Scenic Rivers: The proposed project is not in the vicinity of a designated Wild and Scenic River.
- Farmlands/Timberlands: According to the California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, the proposed project area is designated as Urban and Built-up Land with some Grazing Land designations adjacent to the project site along SR-71. The borrow site is also located on land designated as Grazing Land. As such, the proposed project is not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, the proposed project would have no effect on farmlands.
- Growth: The proposed project would extend Pine Avenue from SR-71 eastward to El Prado road as an four-lane arterial and widen Pine Avenue to a four-lane arterial from El Prado road to Euclid Avenue in the Cities of Chino and Chino Hills. Pine Avenue is designated as a Primary Arterial in the City of Chino General Plan Transportation Element and as a 4-lane Minor Arterial in the City of Chino Hills General Plan Circulation Element. The proposed project would not induce growth, but would serve to accommodate existing and anticipated future growth in the area. As such, no growth impacts or indirect impacts on growth would occur.
- Community Impacts, Environmental Justice: According to the United States Census Bureau, 2020 Decennial Census, the proposed project is located within Census Tract 1.15 and Census Tract 19.03 in San Bernardino County. The two Census Tracts are collectively referred to as the project study area. The majority of the project area consists of individuals that identify themselves as Asian, followed closely by Latino/Hispanic ethnicity. Furthermore, the median household income for the Census Tracts ($102,935 and $96,783) where the project is located is much greater than that reflected for San Bernardino County ($63,362), the City of Chino ($81,711), but below that of the City of Chino Hills ($106,347). Low income is based on the U.S. Department of Health and Human Services (DHHS) poverty guidelines. For 2020, the poverty guideline was $26,200 for a family of four, therefore, the project area with a median household income of $102,935 and $96,783, would not be considered a low-income area, as it is well above the DHHS poverty guidelines. Comparing demographics (i.e., race and ethnicity) of the project study area with each of the City of Chino, City of Chino Hills, and San Bernardino County, the study area population is characterized as having a similar ethnic composition with the City of Chino Hills with a majority of Asian, followed closely by Latino/Hispanic ethnicity, then White ethnicity. The City of Chino has an ethnic composition

similar to that of San Bernardino County with a majority of Latino/Hispanic ethnicity, followed by White, and Asian. Based on income data, the project area is characterized as having a much higher median household income when compared with the City of Chino and San Bernardino County and slightly less than the City of Chino Hills. There are no business or residential relocations associated with the proposed project. Acquisition of new permanent right of way along the project alignment would be required to accommodate the improvements. The proposed project would require a right of access and an easement for roadway improvements from the USACE. For property owned by others, a permanent right of way acquisition would be required. However, no relocations would be required with implementation of the proposed project. The project is not anticipated to cause a disproportionately high and adverse effect on any minority or low income population with regards to air quality, noise, water pollution, hazardous wastes, aesthetics, or accessibility. No minority or low-income populations that would be adversely affected by the proposed project have been identified as determined above. Therefore, this project is not subject to the provisions of Executive Order 12898.

- NOAA Fisheries Service: This project is located outside of NOAA Fisheries Service jurisdiction; therefore, a NOAA species list is not required and no effects to NOAA species are anticipated.

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Affected Environment

The proposed project area is within the northern Prado Flood Control Basin in San Bernardino County, California. Specifically, the proposed project area is located in the City of Chino and Chino Hills, along the existing Pine Avenue alignment between SR-71 and Euclid Avenue and the borrow site is located between Cucamonga Avenue and Hellman Avenue, south of Chino Corona Road.

Based on the City of Chino General Plan 2013-2021 Housing Element, during the past 30 years, Chino has gradually transformed from an agricultural based community to a suburban community which can be linked to the construction of the SR-60 and SR-71 freeways, which opened access to the housing and job markets throughout the Inland Empire and Los Angeles County. Chino's population rose dramatically between 1980 and 1990 and has continued to increase steadily ever since. The City's population growth from 2000 to 2010 saw an increase of 16 percent and from 2010 to 2019 the City's population grew 21 percent.

Existing Land Use

The proposed project area is within the northern Prado Flood Control Basin in San Bernardino County, California. Specifically, the proposed project area is located in the City of Chino and Chino Hills, along the existing Pine Avenue alignment between SR-71 and Euclid Avenue and the borrow site is located between Cucamonga Avenue and Hellman Avenue, south of Chino Corona Road. Currently, Pine Avenue does not exist between SR-71 and Pomona Rincon Road/Fairfield Ranch Road. Pine Avenue between Pomona Rincon Road/Fairfield Ranch Road and El Prado Road is a two-lane roadway with approximately 60 feet of right of way, which is closed to public use. East of El Prado Road, Pine Avenue is an improved two-lane roadway to Euclid Avenue. The borrow site is currently vacant land owned by USACE. Land uses in the vicinity include recreational/open space, the El Prado Golf Course, Chino Creek, and commercial/industrial uses. Pine Avenue is designated as a Primary Arterial in the City of Chino General Plan Transportation Element and as a 4-lane Minor Arterial in the City of Chino Hills General Plan Circulation Element. As an east-west roadway, Pine Avenue is also designated as a City of Chino Truck Route in the City of Chino General Plan Transportation Element. As agricultural uses have been replaced with industrial warehouse uses in the City of Chino, particularly in the southwestern portion of Chino, and combined with access to SR-71, the result has been a continued increase in volume and changes in truck travel patterns. As such, to accommodate and facilitate truck travel while controlling impacts on non-truck generating land uses, the City of Chino has designated truck routes on major routes to provide access to the industrial areas and through the City of Chino. The designated truck routes in the City of Chino are typically designated on major arterials, allowing trucks weighing more than 10,000 pounds to access commercial and industrial areas.

Future Land Use

According to the City of Chino General Plan Transportation Element, Pine Avenue is designated as a Primary Arterial and as a 4-lane Minor Arterial in the City of Chino Hills General Plan Circulation Element. Future planned and approved land development projects under consideration by the City in the vicinity of the project are listed Section 2.4, Cumulative Impacts.

Consistency with State, Regional, and Local Plans and Programs

Southern California Association of Governments (SCAG) 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

The 2020-2045 RTP/SCS is a plan that charts a path toward a more mobile, sustainable and prosperous region by making key connections between transportation networks, between planning strategies and between the people whose collaboration can make the plans a reality. The plan was adopted on September 3, 2020. The project is included in the 2020-2045 RTP/SCS as RTP ID 200207-200207 Pine Ave Extension (0-4 Lanes) from Route 71 to Euclid Avenue in the City of Chino, CA.

Southern California Association of Governments 2019 Federal Transportation Improvement Program

The FTIP, formerly referred to as the Regional Transportation Improvement Program, is a capital listing of all transportation projects proposed over a six year period for the SCAG region. The projects include highway improvements, transit, rail, and bus facilities, high occupancy vehicle lanes, signal synchronization, intersection improvements, freeway ramps, etc. The FTIP is prepared to implement projects and programs listed in the RTP and developed in compliance with state and federal requirements. The 2019 FTIP was adopted by SCAG's Regional Council on September 6, 2018 and FHWA and FTA provided conformity determination concurrence related to the 2019 FTIP on December 17, 2018. The project is listed in SCAG's 2019 FTIP as Local Highway Project FTIP ID 200207, Pine Ave Extension (0-4 Lanes) From Route 71 to Euclid Avenue in the City of Chino, CA.

City of Chino General Plan

As previously stated the City of Chino General Plan Transportation Element designates Pine Avenue as a Primary Arterial. The Goals, Objectives, Policies, and Actions of the City of Chino General Plan Transportation Element include the following:

- Goal TRA-1, A roadway system that meets the needs of Chino's residents and visitors, provides safe, convenient, and efficient travel in, around, and through the City, and preserves and/or enhances the City's distinctive qualities.

- Objective TRA-1.1, Develop and maintain a street network that meets Chino's needs and responds to new development.

- Goal TRA-2, Continue to integrate Chino into the broader regional street network and transportation system.

- Goal TRA-6, Improve the convenience, intuitiveness, and safety of Chino's street network.

- Objective TRA-6.1, Foster connectivity in the Chino street system.

City of Chino Hills General Plan

The City of Chino Hills General Plan designates Pine Avenue as a 4-lane Minor Arterial in the City of Chino Hills General Plan Circulation Element. Pine Avenue is also included as one of three planned roadways in the City of Chino Hills. The City of Chino Hills Circulation Element includes the following goals, policies, and actions to support the circulation plan of the City of Chino Hills.

- Goal C-1: Provide a comprehensive vehicular transportation network.

- Policy C-1.1: Provide a comprehensive roadway network that supports the movement of people and goods in a safe and efficient manner.

- Goal C-2: Support Regional Transportation Policies that link Chino Hills to neighboring cities and counties.

2.1.1.2 Environmental Consequences

Build Alternative

2020-2045 RTP/SCS

The project is included in SCAG's 2020-2045 RTP/SCS as RTP ID 200207-200207 and is consistent with the project description in the 2020-2045 RTP/SCS.

2019 FTIP

The project is listed in SCAG's 2019 FTIP as a Local Highway Project (FTIP ID 200207) and is consistent with the project description in the 2019 FTIP.

City of Chino General Plan

The City of Chino General Plan establishes goals, objectives, policies, and actions that will guide the City of Chino as it grows and becomes a Healthy City over the next 20 years. Specifically, among its goals, the City of Chino General Plan aims to define a realistic vision of what the City of Chino desires to be in 20 years, and express Chino's policy direction in regard to the physical, social, economic, cultural, and environmental character of the City of Chino. The Build Alternative would meet the project purpose and need, to provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand and elevate Pine Avenue so that it would be above the 2-percent chance (50-year) flood for the Prado Basin and the 1 percent chance (100-year) flood for Chino Creek and Cypress Channel. The Build Alternative would be consistent with the City of Chino General Plan Transportation Element Goal TRA-1, Objective TRA-1.1, Goal TRA-2, Goal TRA-6, Objective TRA-6.1.

City of Chino Hills General Plan

The City of Chino Hills General Plan guides the City of Chino Hills through its goals, policies, and actions during the next 20 years. As the City looks forward to its next 20 years, the City of Chino Hills General Plan builds upon its success and lays out a course to maintain a high quality of life for the future. The Build Alternative would be consistent with the City of Chino Hills General Plan Circulation Element Goal C-1 of providing a comprehensive vehicular circulation network, Policy C-1.1 of providing a comprehensive roadway network that supports the movement of people and goods in a safe and efficient manner, and Goal C-2 of supporting the Regional Transportation Policies that link Chino Hills to neighboring cities and counties.

Based on the above discussions and analysis, the proposed Build Alternative would be consistent with adjacent land uses and land use plans.

No-Build Alternative

Under the No-Build Alternative, Pine Avenue would remain in its current state with no connection to SR-71. The No-Build Alternative is not consistent with the goals and policies mentioned above for the City of Chino and City of Chino Hills. Furthermore, the No-Build Alternative does not address the purpose and need of the project.

2.1.1.3 Avoidance, Minimization, and Mitigation Measures

Based on the above discussion and analysis, no measures are required.

2.1.2 Parks and Recreational Facilities

2.1.2.1 Regulatory Setting

The Park Preservation Act (California Public Resources Code [PRC] Sections 5400-5409) prohibits local and state agencies from acquiring any property that is in use as a public park at the time of acquisition unless the acquiring agency pays sufficient compensation or land, or both, to enable the operator of the park to replace the park land and any park facilities on that land.

2.1.2.2 Affected Environment

El Prado Golf Course, a public recreation golf course with two regulation 18-hole golf courses, is located to the north and south of Pine Avenue. Prado Regional Park, offering fishing, camping, hiking, biking, trails, and picnic facilities, is located west of Cucamonga Avenue, to the west of the proposed borrow area. Vila Borba Park is a City of Chino Hills park facility located approximately 0.5-mile west of the western end of the proposed project site, west of SR-71. The Prado Regional Park and Vila Borba Park are protected by the Park Preservation Act as they are public parks operated by a public agency. The parks and recreational facilities within 0.5-mile of the proposed project are summarized in the table below.

Table 2.1-1. Public Parks, Trails, and Other Recreational Facilities within 0.5 Mile of the Proposed Project

Jurisdiction	Name	Location	Approximate Distance from the Project	Type	Amenities
San Bernardino County	El Prado Golf Course	6555 Pine Avenue, Chino	Within 0.5-mile north and south of proposed project	Public golf course	Two 18-hole golf courses, driving range, clubhouse, and banquet facility.
San Bernardino County	Prado Regional Park	16700 South Euclid Avenue, Chino	0.5-mile south of proposed project	Regional park	Fishing, camping, hiking, biking, trails, picnic facilities, and meeting room.
City of Chino Hills	Vila Borba Park	17001 Amadora Drive	0.5-mile west of proposed project	City park	Tot lot, dog park area, and restrooms.
Sources: County of San Bernardino Regional Parks Department web page. Available: http://cms.sbcounty.gov/parks/Parks/PradoRegionalPark.aspx. El Prado Golf Course web page. Available: https://www.elpradogolfcourses.com/ City of Chino Hills Park and Facility Guide web page: https://www.chinohills.org/dogpark.					

Section 4(f) Resources

Section 4(f) of the U.S. Department of Transportation Act of 1966, codified at 49 U.S.C. §303, declares that "it is the policy of the United States government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Section 4(f) specifies that the Secretary of Transportation may approve a transportation program or project requiring use of the publicly owned land of a park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land of a historic site of national, state, or local significance (as determined by the federal, state, or local officials with jurisdiction over the park, area, refuge, or site) only if:

- There is no prudent and feasible alternative to using that land, and
- The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development when developing transportation projects and programs that would use lands that are protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer (SHPO) would also be needed.

The El Prado Golf Course is a Section 4(f) resource within the project vicinity; and implementation of the proposed project would result in a use of the resourceFurther evaluation is presented in Appendix A.

2.1.2.3 Environmental Consequences

Build Alternative

Construction

Construction of the proposed project, i.e., the Build Alternative, would not result in closure of the El Prado Golf Course, and access to the golf course and related facilities, including golf cart access, would be maintained during construction. No construction impacts would occur at Prado Regional Park or Villa Borba Park because of their distance, being located 0.5 mile south and east of the project site, respectively. The proposed project would involve use of El Prado Golf Course property to construct a 14-foot wide by 10-foot high golf cart undercrossing of Pine Avenue, east of the Cypress Channel, and constructing a golf cart pathway on both sides of the undercrossing. The project would also result in modification to the existing golf course and cart pathways along El Prado Road, Pomona Rincon Road and Pine Avenue. The construction of these components would result in construction traffic, however, the golf course would remain open and accessible during construction.

Operation

The Build Alternative would result in a golf cart undercrossing of Pine Avenue. This would be a safety benefit as currently the golf cart path is at-grade along Pine Avenue with golf carts having to avoid vehicles traveling along Pine Avenue and crossing when safe to do so. The 14-foot wide by 10-foot high reinforced concrete box (RCB) golf cart undercrossing would eliminate the at-grade crossing of golf carts at Pine Avenue.

Section 4(f) Properties

The publicly owned parks and recreational areas within 0.5 mile of the project area were evaluated with respect to the requirements of Section 4(f). That evaluation, presented in Appendix A, concluded that the proposed project would have no "use" of the recreational facilities (Prado Regional Park and Vila Borba Park) and a de minimis finding on the El Prado Golf Course. Access to the El Prado Golf Course would be maintained, and the project would not affect or change the use of any Section 4(f) properties. Refer to Appendix A for additional details.

No-Build Alternative

Under the No-Build Alternative, the project improvements would not be carried out and no construction would occur. Therefore, no existing and/or planned parks or recreational facilities in the area would be affected, and no use of Section 4(f) resources would occur.

2.1.2.4 Avoidance, Minimization, and/or Mitigation Measures

Refer to measure TMP-1in Section 2.1.4.3.

2.1.3 Utilities/Emergency Services

2.1.3.1 Affected Environment

Currently, there are existing sewer, water, Southern California Gas, Frontier Communications fiber optic/communication lines, and Southern California Edison (SCE) lines located along Pine Avenue in the project vicinity, including above ground power poles and transmission towers.

The Inland Empire Utilities Agency also operates a water reclamation facility, Regional Plant #2, approximately 0.5 mile north of Pine Avenue at 16400 El Prado Road in Chino.

The Chino Valley Fire District provides fire and emergency services in the project area as well as for the City of Chino and Chino Hills and surrounding unincorporated areas of San Bernardino County. The nearest fire stations are Station 63 located at 7550 Kimball Avenue in Chino, approximately 1.5 mile northeast, and Station 62 located at 5551 Butterfield Ranch Road in Chino Hills, approximately 1.20 miles west of the project site.

The Chino Police Department provides for the public safety response needs of the project area within the City of Chino. The Chino Police Department is located at 5450 Guardian Way in the City of Chino approximately 6 miles north of the project site. The City of Chino Hills has contracted with the San Bernardino County Sheriff's Department for law enforcement services since 1991. The nearest Chino Hills police station is located at 14077 Peyton Drive in the City of Chino Hills, approximately 5.2 miles northwest of the project site.

2.1.3.2 Environmental Consequences

Build Alternative

The proposed Build Alternative would affect utilities in the following way:

-Relocation of existing sewer line under Chino Creek at Pine Avenue.
-Raise existing overhead power lines located between SR-71 and Pomona Rincon Road;
-Construction of access driveway for utilities services located between SR-71 and Pomona Rincon Road;
-Construction of access driveway east of Chino Creek;
-Installation of a traffic signal at the intersection of El Prado Road at Pine Avenue;
-Relocation of existing overhead utilities and utility poles along the project alignment;
-Installation of local area storm drains along Pine Avenue.
-Utilities would be adjusted or relocated, as needed, to accommodate the proposed improvements.

Construction activities, including nighttime construction, have the potential to result in temporary lane closures along Pine Avenue along the project route during the construction period. This could increase response times for emergency vehicles during construction; however, the proposed project would include preparation and implementation of a Traffic Management Plan (TMP). Furthermore, there are adjacent roadways that would provide alternate access in and around the area of Pine Avenue including Fern Avenue, Bickmore Avenue, Mountain Avenue, and Euclid Avenue. Construction impacts would be short term, lasting only the length of construction, and cease upon completion of construction.

When construction is completed, Pine Avenue would provide an additional east/west connection to SR-71 and the surrounding area and provide emergency vehicles with an additional travel route to access the area. This would be a beneficial impact that may result in improvements to emergency vehicle response times.

No Build Alternative

Under the No-Build Alternative, the project improvements would not be carried out and no construction would occur. As no connection would occur at Pine Avenue to SR-71, emergency services would utilize existing routes for travel when responding to emergencies in the project area. No relocation of utilities and no traffic signals would be installed as a result of this alternative.

2.1.3.3 Avoidance, Minimization, and/or Mitigation Measures

Refer to TMP-1 in Section 2.1.4.3.

2.1.4 Traffic and Transportation

2.1.4.1 Regulatory Setting

The Department, as assigned by the Federal Highway Administration (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 Code of Federal Regulations [CFR] 652). 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.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [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.

2.1.4.2 Affected Environment

The information in this section is based on the Traffic Impact Analysis (TIA)(Caltrans 2020a) prepared for the project. The TIA was prepared to evaluate the potential circulation system deficiencies that may result from the development of the project, and to recommend improvements to achieve acceptable circulation system operational conditions. The TIA was prepared in accordance with the San Bernardino County Congestion Management Program (CMP) Guideline for CMP Traffic Impact Analysis Reports, the Caltrans Guide for the Preparation of Traffic Impact Studies, and consultation with the City of Chino. For purposes of the TIA, potential impacts to traffic and circulation have been assessed for each of the following conditions: Existing (2016), Opening Year (2023) without Project, Opening Year (2023) with Project, Horizon Year (2043) without Project, and Horizon Year (2043) with Project.

The following ten study area intersection were selected for analysis based on consultation with City of Chino staff.

- Butterfield Ranch Road/Pine Avenue
- SR-71 Southbound Ramps/Soquel Canyon Parkway/Central Avenue
- SR-71 Southbound Ramps/Pine Avenue
- SR-71 Southbound Ramps/Shady View Drive/Butterfield Ranch Road
- SR-71/Northbound Ramps/Central Avenue
- SR-71 Northbound Ramps/Pine Avenue
- SR-71 Northbound Ramps/Euclid Avenue
- El Prado Road Ramps/Pine Avenue
- Fern Avenue/Pine Avenue
- Euclid Avenue/Pine Avenue

The study area identified a total of 14 existing/future roadway segments. The roadway segments include the segments on either side of the study area intersections and are listed in Table 2.1-2.

Table 2.1-2. Roadway Segment Analysis Locations

No.	Street	Segment
1	Soquel Canyon Parkway/Central Avenue	Pomona Rincon Road to SR-71
2		SR-71 to Fairchild Ranch Road
3	Butterfield Ranch Road	Slate Drive to Pine Avenue
4		Pine Avenue to Park Crest Drive
5	Pine Avenue	Butterfield Ranch Road to SR-71
6		SR-71 to El Prado Road
7		El Prado Road to Fern Avenue
8		Fern Avenue to Euclid Avenue
9		Euclid Avenue to Meadowhouse Avenue
10	El Prado Road	Bickmore Avenue to Pine Avenue
11	Euclid Avenue	Bickmore Avenue to Pine Avenue
12		Pine Avenue to Pomona Rincon Road
13	Butterfield Ranch Road	Twin Knolls Drive to SR-71
14		SR-71 to Pomona Rincon Road
Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).		

The freeway mainline segments analyzed for the project are shown in Table 2.1-3.

Table 2.1-3. Freeway Mainline Segment Analysis Locations

No.	Freeway Mainline Segments
1	SR-71 Southbound, north of Central Avenue
2	SR-71 Southbound, Central Avenue to Pine Avenue
3	SR-71 Southbound, Pine Avenue to Euclid Avenue
4	SR-71 Southbound, south of Euclid Avenue
5	SR-71 Northbound, north of Central Avenue
6	SR-71 Northbound, Central Avenue to Pine Avenue
7	SR-71 Northbound, Pine Avenue to Euclid Avenue
8	SR-71 Northbound, south of Euclid Avenue
Source: TIA, 2020 (Caltrans 2020a).	

The freeway merge/diverge ramp junction analysis locations shown in Table 2.1-4 were analyzed for each direction of flow, as shown below.

Table 2.1-4. Freeway Merge/Diverge Ramp Junction Analysis Locations

No.	Freeway Merge/Diverge Ramp Junctions
1	SR-71 Southbound, Off-ramp at Central Avenue (Diverge)
2	SR-71 Southbound, Loop On-Ramp at Central Avenue (Upstream) (Merge)
3	SR-71 Southbound, Loop On-Ramp at Central Avenue (Downstream) (Merge)
4	SR-71 Southbound, On-Ramp at Central Avenue (Merge)
5	SR-71 Southbound, Off-Ramp at Pine Avenue (Diverge)
6	SR-71 Southbound, On-Ramp at Pine Avenue (Merge)
7	SR-71 Southbound, Off-Ramp at Euclid Avenue (Diverge)
8	SR-71 Southbound, Loop On-Ramp at Euclid Avenue (Upstream) (Merge)
9	SR-71 Southbound, Loop On-Ramp at Euclid Avenue (Downstream) (Merge)
10	SR-71 Southbound, On-Ramp at Euclid Avenue (Merge)
11	SR-71 Northbound, On-Ramp at Central Avenue (Merge)
12	SR-71 Northbound, Loop On-Ramp at Central Avenue (Upstream) (Merge)
13	SR-71 Northbound, Loop On-Ramp at Central Avenue (Downstream) (Merge)
14	SR-71 Northbound, Off-Ramp at Central Avenue (Diverge)
15	SR-71 Northbound, On-Ramp at Pine Avenue (Merge)
16	SR-71 Northbound, Off-Ramp at Pine Avenue (Diverge)
17	SR-71 Northbound, On-Ramp at Euclid Avenue (Merge)
18	SR-71 Northbound, Off-Ramp at Euclid Avenue (Diverge)
Source: TIA, 2020 (Caltrans 2020a).	

The City of Chino has determined that since the project was initiated in 2008, with overall footprint finalized in 2017, and technical studies for the project prepared before implementation of California Code of Regulations Section 15064.3, performing vehicle miles traveled (VMT) analysis for this project is not applicable (refer to Chapter 3.2.17 for additional details). Traffic operations of roadway facilities are described using Level of Service (LOS) standards. LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flowing conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow. According to the City of Chino General Plan, Objective TRA-1.2, Policy P1, “the City shall achieve an average LOS D or better at intersections and along roadway segments...”

Existing (2016) intersection traffic conditions are presented in Table 2.1-5, while existing (2016) segment traffic conditions are presented in Table 2.1-6.

Table 2.1-5. Existing (2016) Intersection Traffic Conditions

Intersection	Delay (seconds)		Level of Service	
	AM	PM	AM	PM
Butterfield Ranch Road/Pine Avenue	12.8	12.9	B	B
SR-71 Southbound Ramps/Soquel Canyon Parkway/Central Avenue	14.3	25.8	B	C
SR-71 Southbound Ramps/Pine Avenue	12.4	10.6	B	B
SR-71 Southbound Ramps/Shady View Drive/Butterfield Ranch Road	40.9	24.1	D	C
SR-71 Northbound Ramps/Central Avenue	7.3	7.1	A	A
SR-71 Northbound Ramps/Pine Avenue	9.5	8.4	A	A
SR-71 Northbound Ramps/Euclid Avenue	15.8	13.0	B	B
El Prado Road/Pine Avenue	9.9	11.9	A	B
Fern Avenue/Pine Avenue	6.1	6.7	A	A
Euclid Avenue/Pine Avenue	48.4	46.1	D	D
Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).				

Table 2.1-6. Existing (2016) Segment Traffic Conditions

Roadway	Segment Limits	V/C	Level of Service
Soquel Canyon Parkway/Central Avenue	Pomona Rincon Road to SR-71	0.52	A
	SR-71 to Fairchild Ranch Road	0.61	B
Butterfield Ranch Road	Slate Drive to Pine Avenue	0.12	A
	Pine Avenue to Park Crest Drive	0.29	A
Pine Avenue	Butterfield Ranch Road to SR-71	0.31	A
	SR-71 to El Prado Road	n/a	n/a
	El Prado Road to Fern Avenue	0.44	A
	Fern Avenue to Euclid Avenue	0.37	A
	Euclid Avenue to Meadowhouse Avenue	1.71	**F**
El Prado Road	Bickmore Avenue to Pine Avenue	0.37	A
Euclid Avenue	Bickmore Avenue to Pine Avenue	0.40	A
	Pine Avenue to Pomona Rincon Road	0.85	D
Butterfield Ranch Road	Twin Knolls Drive to SR-71	0.21	A
	SR-71 to Pomona Rincon Road	1.78	**F**

V/C = volume to capacity ratio
n/a = intersection does not currently exist
Bolded entries indicate an LOS of E or worse
Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).

As shown in Table 2.1-5, the study are intersections are currently operating at LOS D or better during the peak hours. As shown in Table 2.1-6, the following study area roadway segments are currently operating at LOS E or worse.

- Pine Avenue, East of Euclid Avenue- LOS F
- Butterfield Ranch Road, East of SR-71- LOS F

The Existing (2016) SR-71 segment analysis results are shown in Table 2.1-7.

Table 2.1-7. Existing (2016) State Route 71 Segment Analysis

Segment	Volume		Density[1]		Level of Service	
	AM	PM	AM	PM	AM	PM
SR-71 Southbound, north of Central Avenue	3,487	3,410	18.3	17.9	C	B
SR-71 Southbound, Central Avenue to Pine Avenue	3,019	2,337	24.7	18.4	C	C
SR-71 Southbound, Pine Avenue to Euclid Avenue	2,808	2,069	22.6	16.3	C	B
SR-71 Southbound, south of Euclid Avenue	3.415	1,736	29.2	13.7	D	B
SR-71 Northbound, north of Central Avenue	5,722	5,122	62.4	30.5	**E**	D
SR-71 Northbound, Central Avenue to Pine Avenue	4,687	4,716	37.6	60.0	**F**	**F**
SR-71 Northbound, Pine Avenue to Euclid Avenue	4,356	4,573	62.4	54.8	**F**	**F**
SR-71 Northbound, south of Euclid Avenue	4,197	5,257	24.1	32.0	C	D

[1] Density is measured by passenger cars per mile per lane (pc/mi/ln)
Bolded entries indicate an LOS of E or worse
Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).

As shown in Table 2.1-7, the study area freeway mainline segments are currently operating at an acceptable LOS during the AM and PM peak hours, with the exception of the following:

- SR-71 Northbound, North of Central Avenue – LOS E (AM peak hour only)
- SR-71 Northbound, Central Avenue to Pine Avenue- LOS F (AM and PM peak hours)
- SR-71 Northbound, Pine Avenue to Euclid Avenue – LOS F (AM and PM peak hours)

The Existing (2016) SR-71 merge/diverge analysis results are shown in Table 2.1-8.

Table 2.1-8. Existing (2016) State Route 71 Merge/Diverge Analysis

Location	AM Peak Hour		PM Peak Hour	
	Density[1]	LOS	Density[1]	LOS
SR-71 Southbound, Off-ramp at Central Avenue (Diverge)	26.2	C	27.8	C
SR-71 Southbound, Loop On-Ramp at Central Avenue (Upstream) (Merge)	18.9	B	15.8	B
SR-71 Southbound, Loop On-Ramp at Central Avenue (Downstream) (Merge)	18.9	B	15.8	B
SR-71 Southbound, On-Ramp at Central Avenue (Merge)	18.8	B	15.5	B
SR-71 Southbound, Off-Ramp at Pine Avenue (Diverge)	31.1	D	24.6	C
SR-71 Southbound, On-Ramp at Pine Avenue (Merge)	26.3	C	19.9	B
SR-71 Southbound, Off-Ramp at Euclid Avenue (Diverge)	29.5	D	22.5	C
SR-71 Southbound, Loop On-Ramp at Euclid Avenue (Upstream) (Merge)	27.4	C	16.6	B
SR-71 Southbound, Loop On-Ramp at Euclid Avenue (Downstream) (Merge)	27.4	C	16.6	B
SR-71 Southbound, On-Ramp at Euclid Avenue (Merge)	32.1	D	17.9	B
SR-71 Northbound, On-Ramp at Central Avenue (Merge)	35.0	D	30.6	D
SR-71 Northbound, Loop On-Ramp at Central Avenue (Upstream) (Merge)	31.7	D	28.1	D
SR-71 Northbound, Loop On-Ramp at Central Avenue (Downstream) (Merge)	31.7	D	28.1	D
SR-71 Northbound, Off-Ramp at Central Avenue (Diverge)	49.6	**F**	49.0	**F**
SR-71 Northbound, On-Ramp at Pine Avenue (Merge)	44.8	**F**	44.2	**F**
SR-71 Northbound, Off-Ramp at Pine Avenue (Diverge)	46.6	**F**	47.7	**F**
SR-71 Northbound, On-Ramp at Euclid Avenue (Merge)	41.5	**F**	42.8	**F**
SR-71 Northbound, Off-Ramp at Euclid Avenue (Diverge)	27.2	C	32.6	D

[1] Density is measured by passenger cars per mile per lane (pc/mi/ln)

LOS = Level of Service

Bolded entries indicate an LOS of E or worse

Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).

As shown in Table 2.1-8, the study area ramp junctions are currently operating at an acceptable LOS during the AM and PM peak hours, with the exception of the following intersections, which are predicted to operate at LOS F during both the AM and PM peak hours.

- SR-71 Northbound off-ramp at Central Avenue
- SR-71 Northbound on-ramp at Pine Avenue
- SR-71 Northbound off-ramp at Pine Avenue
- SR-71 Northbound on-ramp at Euclid Avenue

2.1.4.3 Environmental Consequences

Build Alternative

Construction

The Build Alternative would implement construction staging strategies in order to minimize traffic delays and congestion during the construction period. Many of the strategies will be specifically defined during the Plans, Specifications & Estimates (PS&E) phase of the project. However, some strategies that would be part of the Traffic Management Plan (TMP) (measure **TMP-1**) prepared for the project include limiting temporary lane closures to late night and early morning off-peak periods, and detours would be clearly established and marked for motorists. In order to ensure that existing lanes of traffic are maintained through the construction of the project, a detailed construction staging plan will be created during the PS&E phase. The TMP would be prepared and approved prior to construction. The TMP would include a public awareness program through the use of local media, newsletters, flyers, and/or social media and internet. Although construction activities could result in temporary, localized traffic disruptions affecting the local community, construction of the project is not expected to result in impacts that would be adverse under NEPA or significant under CEQA during construction.

Operation

Opening Year (2023) Conditions

Intersection Analysis
The projected intersection analysis results from the TIA for Opening Year (2023) are presented in Table 2.1-9.

Table 2.1-9. Opening Year (2023) Intersection Analysis

Location	Without Project				With Project			
	Delay (seconds)		Level of Service		Delay (seconds)		Level of Service	
	AM	PM	AM	PM	AM	PM	AM	PM
Butterfield Ranch Road/Pine Avenue	14.6	13.7	B	B	18.1	15.2	B	B
SR-71 Southbound Ramps/Soquel Canyon Parkway/Central Avenue	53.8	43.8	D	D	23.5	34.0	C	C
SR-71 Southbound Ramps/Pine Avenue	13.5	11.1	B	B	104.4	180.4	**F**	**F**
SR-71 Southbound Ramps/Shady View Drive/Butterfield Ranch Road	58.4	33.2	**E**	C	45.8	24.5	D	C
SR-71 Northbound Ramps/Central Avenue	8.4	10.3	A	B	7.5	9.2	A	A
SR-71 Northbound Ramps/Pine Avenue	10.2	9.0	B	A	>100.0	>100.0	**F**	**F**
SR-71 Northbound Ramps/Euclid Avenue	14.1	12.7	B	B	9.7	13.7	A	B
El Prado Road/Pine Avenue	13.2	19.7	B	C	69.3	>100.0	**F**	**F**
Fern Avenue/Pine Avenue	6.1	6.6	A	A	82.3	>200.0	**F**	**F**
Euclid Avenue/Pine Avenue	89.1	115.3	**F**	**F**	>200.0	>200.0	**F**	**F**
Bolded entries indicate an LOS of E or worse Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).								

As indicated in Table 2.1-9, the following study area intersections are anticipated to operate at LOS E or worse during one or more peak hours under Opening Year (2023) without Project conditions:

- SR-71 Southbound Ramps/Shady View Drive/Butterfield Ranch Road – LOS E (AM peak hour)
- Euclid Avenue/Pine Avenue – LOS F (AM and PM peak hours)

In comparison, the following study area intersection are anticipated to operate at LOS F during the AM and PM peak hours under the Opening Year (2023) with Project traffic conditions, as shown in Table 2.1-9.

- SR-71 Southbound Ramps/Pine Avenue
- SR-71 Northbound Ramps/Pine Avenue
- El Prado Road/Pine Avenue
- Fern Avenue/Pine Avenue
- Euclid Avenue/Pine Avenue

Horizon Year (2043) Conditions

Intersection Analysis

As indicated in Table 2.1-10, the following study area intersections are anticipated to operate at LOS E or worse during one or both peak hours under Horizon Year (2043) without Project traffic conditions.

- SR-71 Southbound Ramps/Shady View Drive/Butterfield Ranch Road – LOS E (AM peak hour)
- El Prado Road/Pine Avenue – LOS F (PM peak hour)
- Euclid Avenue/Pine Avenue – LOS F (AM and PM peak hours)

Table 2.1-10. Horizon Year (2043) Intersection Analysis

	Without Project				With Project			
	Delay (seconds)		Level of Service		Delay (seconds)		Level of Service	
Location	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Butterfield Ranch Road/Pine Avenue	41.9	19.2	D	B	41.8	19.2	D	B
SR-71 Southbound Ramps/Soquel Canyon Parkway/Central Avenue	54.4	54.8	D	D	32.5	54.1	C	D
SR-71 Southbound Ramps/Pine Avenue	14.4	15.3	B	B	124.0	152.9	**F**	**F**
SR-71 Southbound Ramps/Shady View Drive/Butterfield Ranch Road	55.3	26.2	**E**	C	44.7	24.4	D	C
SR-71 Northbound Ramps/Central Avenue	9.7	41.6	A	D	7.9	21.1	A	A
SR-71 Northbound Ramps/Pine Avenue	12.7	10.5	B	B	>200.0	>200	**F**	**F**
SR-71 Northbound Ramps/Euclid Avenue	19.7	18.2	B	B	14.3	12.3	B	B
El Prado Road/Pine Avenue	23.7	153.2	C	**F**	149.8	173.7	**F**	**F**
Fern Avenue/Pine Avenue	8.8	8.6	A	A	43.6	19.8	D	B
Euclid Avenue/Pine Avenue	>200	>200	**F**	**F**	>200	>200.0	**F**	**F**

Bolded entries indicate an LOS of E or worse
Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).

In comparison, the following study area intersections are anticipated to operate at LOS E or worse during one or more peak hours under Horizon Year (2043) with Project traffic conditions.

- SR-71 Southbound Ramps/Pine Avenue – LOS F (AM and PM peak hours)
- SR-71 Northbound Ramps/Pine Avenue – LOS F (AM and PM peak hours)
- El Prado Road/Pine Avenue – LOS F (AM and PM peak hours)
- Fern Avenue/Pine Avenue – LOS E(AM and PM peak hours)
- Euclid Avenue/Pine Avenue – LOS F (AM and PM peak hours)

Opening Year (2023) Conditions

Roadway Segment Analysis
As indicated in Table 2.1-11, three study area roadway segments are anticipated to operate at LOS F under Opening Year (2023) without Project traffic conditions.

- Pine Avenue, Euclid Avenue to Meadowhouse Avenue
- Euclid Avenue, South of Pine Avenue
- Butterfield Ranch Road, SR-71 to Pomona Rincon Road

Table 2.1-11. Opening Year (2023) Roadway Segments Projected to Operate at LOS E or F

Roadway	Segment Limits	Level of Service	
		Without Project	With Project
Pine Avenue	El Prado Road to Fern Avenue	n/a	**F**
	Fern Avenue to Euclid Avenue	n/a	**F**
	Euclid Avenue to Meadowhouse Avenue	**F**	**F**
Euclid Avenue	Pine Avenue to Pomona Rincon Road	**F**	C
Butterfield Ranch Road	SR-71 to Pomona Rincon Road	**F**	**F**

n/a = intersection does not currently exist and would not existing under the without Project condition
Bolded entries indicate an LOS of E or worse
Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).

In comparison, the following study area roadway segments are anticipated to operate at LOS E or worse under Opening Year (2023) with Project traffic conditions, with the proposed extension of Pine Avenue.

- Pine Avenue, El Prado Road to Fern Avenue – LOS F
- Pine Avenue, Fern Avenue to Euclid Avenue – LOS F
- Pine Avenue, Euclid Avenue to Meadowhouse Avenue – LOS F
- Butterfield Ranch Road, SR-71 to Pomona Rincon Road – LOS F

Horizon Year (2043) Conditions

Roadway Segment Analysis
As indicated in Table 2.1-12 the following study area roadway segments are anticipated to operate at LOS E or worse under Horizon Year (2043) without Project traffic conditions.

- Pine Avenue, Euclid Avenue to Meadowhouse Avenue – LOS F
- Butterfield Ranch Road, SR-71 to Pomona Rincon Road – LOS E
- Euclid Avenue, South of Pine Avenue – LOS F
- Butterfield Ranch Road, SR-71 to Pomona Rincon Road – LOS F

Table 2.1-12. Horizon Year (2043) Roadway Segments Projected to Operate at LOS E or F

Roadway	Segment Limits	Level of Service	
		Without Project	With Project
Pine Avenue	El Prado Road to Fern Avenue	B	**F**
	Fern Avenue to Euclid Avenue	A	**F**
	Euclid Avenue to Meadowhouse Avenue	**F**	**F**
Euclid Avenue	Bickmore Avenue to Pine Avenue	**E**	**E**
	Pine Avenue to Pomona Rincon Road	**F**	**F**
Butterfield Ranch Road	SR-71 to Pomona Rincon Road	**F**	**F**

n/a = intersection does not currently exist and would not existing under the without Project condition
Bolded entries indicate an LOS of E or worse
Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).

In comparison, the following study area roadway segments are anticipated to operate at LOS E or worse under Horizon Year (2043) with Project traffic conditions, with the proposed extension of Pine Avenue, in addition to those previously identified under Existing and Horizon Year (2043) with Project conditions:

- Pine Avenue, El Prado Road to Fern Avenue – LOS F
- Pine Avenue, Fern Avenue to Euclid Avenue – LOS F
- Pine Avenue, Euclid Avenue to Meadowhouse Avenue – LOS F
- Butterfield Ranch Road, SR-71 to Pomona Rincon Rod – LOS E
- Euclid Avenue, South of Pine Avenue – LOS F
- Butterfield Ranch Road, SR-71 to Pomona Rincon Road – LOS F

Opening Year (2023) Conditions

Freeway Facility Analysis

As shown in Table 2.1-13, five study area freeway mainline segments are anticipated to operate at LOS E or worse during one or both of the peak hours under Opening Year (2023) without Project and with Project traffic conditions.

Table 2.1-13. Opening Year (2023) State Route 71 Segment Analysis

Segment	Level of Service			
	AM	PM	AM	PM
SR-71 Southbound, north of Central Avenue	C	C	C	C
SR-71 Southbound, Central Avenue to Pine Avenue	D	C	D	C
SR-71 Southbound, Pine Avenue to Euclid Avenue	D	C	D	B
SR-71 Southbound, south of Euclid Avenue	**E**	C	**E**	C
SR-71 Northbound, north of Central Avenue	**F**	**E**	**F**	**E**
SR-71 Northbound, Central Avenue to Pine Avenue	**F**	**F**	**F**	**F**
SR-71 Northbound, Pine Avenue to Euclid Avenue	**F**	**F**	**F**	**F**
SR-71 Northbound, south of Euclid Avenue	D	**F**	D	**F**

Bolded entries indicate an LOS of E or worse
Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).

As shown in Table 2.1.-14, there are eleven study area ramp junction locations that are anticipated to operate at LOS E or worse during one or both of the peak hours under Opening Year (2023) without Project and with Project traffic conditions.

Table 2.1-14. Opening Year (2023) State Route 71 Merge/Diverge Ramp Junction Analysis

	Level of Service			
	Without Project		With Project	
Location	AM	PM	AM	PM
SR-71 Southbound, Off-ramp at Central Avenue (Diverge)	D	**F**	D	D
SR-71 Southbound, Loop On-Ramp at Central Avenue (Upstream) (Merge)	C	B	C	B
SR-71 Southbound, Loop On-Ramp at Central Avenue (Downstream) (Merge)	C	B	C	B
SR-71 Southbound, On-Ramp at Central Avenue (Merge)	C	B	C	B
SR-71 Southbound, Off-Ramp at Pine Avenue (Diverge)	**E**	D	**E**	D
SR-71 Southbound, On-Ramp at Pine Avenue (Merge)	D	C	D	C
SR-71 Southbound, Off-Ramp at Euclid Avenue (Diverge)	D	C	D	C
SR-71 Southbound, Loop On-Ramp at Euclid Avenue (Upstream) (Merge)	D	C	D	C
SR-71 Southbound, Loop On-Ramp at Euclid Avenue (Downstream) (Merge)	D	C	D	C
SR-71 Southbound, On-Ramp at Euclid Avenue (Merge)	**E**	C	**E**	C
SR-71 Northbound, On-Ramp at Central Avenue (Merge)	**F**	**E**	**F**	**E**
SR-71 Northbound, Loop On-Ramp at Central Avenue (Upstream) (Merge)	**E**	D	**E**	D
SR-71 Northbound, Loop On-Ramp at Central Avenue (Downstream) (Merge)	**E**	D	**E**	D
SR-71 Northbound, Off-Ramp at Central Avenue (Diverge)	**F**	**F**	**F**	**F**
SR-71 Northbound, On-Ramp at Pine Avenue (Merge)	**F**	**F**	**F**	**F**
SR-71 Northbound, Off-Ramp at Pine Avenue (Diverge)	**F**	**F**	**F**	**F**
SR-71 Northbound, On-Ramp at Euclid Avenue (Merge)	**F**	**F**	**F**	**F**
SR-71 Northbound, Off-Ramp at Euclid Avenue (Diverge)	D	**F**	D	**F**

[1] Density is measured by passenger cars per mile per lane (pc/mi/ln)

LOS = Level of Service

Bolded entries indicate an LOS of E or worse

Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).

Horizon Year (2043) Conditions

Freeway Facility Analysis

As shown in Table 2.1-15, seven study area freeway mainline segments are anticipated to operate at LOS E or worse during one or both of the peak hours under Horizon Year (2043) without Project and with Project traffic conditions.

Table 2.1-15. Future Year (2043) State Route 71 Segment Analysis

Segment	Level of Service			
	AM	PM	AM	PM
SR-71 Southbound, north of Central Avenue	D	D	D	D
SR-71 Southbound, Central Avenue to Pine Avenue	**F**	C	**F**	D
SR-71 Southbound, Pine Avenue to Euclid Avenue	**E**	C	**F**	C
SR-71 Southbound, south of Euclid Avenue	**F**	D	**F**	C
SR-71 Northbound, north of Central Avenue	**F**	**F**	**F**	**F**
SR-71 Northbound, Central Avenue to Pine Avenue	**F**	**F**	**F**	**F**
SR-71 Northbound, Pine Avenue to Euclid Avenue	**F**	**F**	**F**	**F**
SR-71 Northbound, south of Euclid Avenue	**E**	**F**	**E**	**F**
Bolded entries indicate an LOS of E or worse Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).				

As shown in Table 2.1-16, there are fifteen study area ramp junction locations that are anticipated to operate at LOS E or worse during one or both of the peak hours under Opening Year (2043) without Project and with Project traffic conditions.

Table 2.1-16. Future Year (2043) State Route 71 Merge/Diverge Ramp Junction Analysis

Location	Level of Service			
	Without Project		With Project	
	AM	PM	AM	PM
SR-71 Southbound, Off-ramp at Central Avenue (Diverge)	**E**	**F**	**E**	**F**
SR-71 Southbound, Loop On-Ramp at Central Avenue (Upstream) (Merge)	C	C	D	C
SR-71 Southbound, Loop On-Ramp at Central Avenue (Downstream) (Merge)	C	C	D	C
SR-71 Southbound, On-Ramp at Central Avenue (Merge)	C	B	C	C
SR-71 Southbound, Off-Ramp at Pine Avenue (Diverge)	**E**	C	**F**	**E**
SR-71 Southbound, On-Ramp at Pine Avenue (Merge)	**E**	C	**F**	C
SR-71 Southbound, Off-Ramp at Euclid Avenue (Diverge)	**E**	C	**F**	C
SR-71 Southbound, Loop On-Ramp at Euclid Avenue (Upstream) (Merge)	**F**	D	**F**	D
SR-71 Southbound, Loop On-Ramp at Euclid Avenue (Downstream) (Merge)	**F**	D	**F**	D
SR-71 Southbound, On-Ramp at Euclid Avenue (Merge)	**F**	D	**F**	D
SR-71 Northbound, On-Ramp at Central Avenue (Merge)	**F**	**F**	**F**	**F**
SR-71 Northbound, Loop On-Ramp at Central Avenue (Upstream) (Merge)	**F**	**F**	**F**	**F**
SR-71 Northbound, Loop On-Ramp at Central Avenue (Downstream) (Merge)	**F**	**F**	**F**	**F**
SR-71 Northbound, Off-Ramp at Central Avenue (Diverge)	**F**	**F**	**F**	**F**
SR-71 Northbound, On-Ramp at Pine Avenue (Merge)	**F**	**F**	**F**	**F**
SR-71 Northbound, Off-Ramp at Pine Avenue (Diverge)	**F**	**F**	**F**	**F**
SR-71 Northbound, On-Ramp at Euclid Avenue (Merge)	**F**	**F**	**F**	**F**
SR-71 Northbound, Off-Ramp at Euclid Avenue (Diverge)	**E**	**F**	**E**	**F**

[1] Density is measured by passenger cars per mile per lane (pc/mi/ln)

LOS = Level of Service

Bolded entries indicate an LOS of E or worse

Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).

Summary of Results

The projected traffic data results under the without Project and with Project conditions for the Horizon Year (2043) were reviewed to identify locations where under the without Project condition LOS D or better is predicted but where under the with Project condition LOS E or worse is projected at these same locations. These locations are shown in Table 2.1-17.

Table 2.1-17. Horizon Year (2043) – Traffic Results Comparison

No.	Location	Level of Service			
		Without Project		With Project	
		AM	PM	AM	PM
	Intersections				
1	SR-71 Southbound Ramps/Pine Avenue	B	B	**F**	**F**
2	SR-71 Northbound Ramps/Pine Avenue	B	B	**F**	**F**
3	El Prado Road/Pine Avenue	C	F	**F**	**F**
	Roadway Segments				
4	Pine Avenue - El Prado Road to Fern Avenue	B		**F**	
5	Pine Avenue – Fern Avenue to Euclid Avenue	A		**F**	
	State Route 71 Merge/Diverge Ramp Junction Analysis				
6	SR-71 Southbound, Off-Ramp at Pine Avenue (Diverge)	E	C	**F**	**E**

Bolded entries indicate an LOS of E or worse under with Project conditions compared to LOS A through D under without Project conditions.
Source: Traffic Impact Analysis (TIA), 2020 (Caltrans 2020a).

Th City is currently moving forward with two independent improvement projects that are scheduled to be completed prior to the Pine Avenue Extension Project being open to traffic. These projects are:

- State Route 71/Pine Avenue Interchange Improvements
- Euclid Avenue/Pine Avenue Intersection

A Traffic Operations Analysis Report (TOAR) was prepared for the SR-71/Pine Avenue interchange project (Caltrans, 2022c). In the interchange TOAR it is predicted that locations 1 and 2 in Table 2.1-17 would operate at LOS C during the AM and PM peak hours under the Horizon Year (2043) condition. Furthermore, the TIA for the Pine Avenue Extension project evaluated the projected traffic results under the Horizon Year (2043) with Project condition, with the inclusion of the SR-71/Pine Avenue Interchange and Euclid Avenue/Pine Avenue intersection projects, along with proposed modifications to the Pine Avenue/El Prado Road intersection design, which have been incorporated into the Pine Avenue Extension project. With these identified improvements, locations 3 through 5 in Table 2.1-17 are all projected to operate at LOS D or better under the Horizon Year (2043) with Project condition. Although improvements to mainline SR-71 are beyond the scope of the Pine Avenue Extension project, the City is committed to continuing to support Caltrans and the San Bernardino County Transportation Authority (SBCTA) in terms of pursuing future improvements to SR-71 that would alleviate more comprehensively the various freeway segment locations and merge/diverge areas that are projected to operate at LOS E or F (see Tables 2.1-15 and 2.1-16) by 2043, including location 6 in Table 2.1-17.

Based on the above discussion, and consistent with the City of Chino General Plan, Objective TRA-1.2, Policy P1, the Project, when taking into consideration the overall City roadway network, is expected to result in an average LOS D or better at intersections and along roadway segments.

2.1.4.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance/minimization measure shall be implemented.

TMP-1 Prior to construction, a Traffic Management Plan (TMP) would be prepared and will be implemented during construction of the project. The TMP would include public information and awareness campaigns, motorist information strategies, and incident management strategies to minimize potential impacts on emergency services and commuters during construction.

2.1.5 Visual/Aesthetics

2.1.5.1 Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, establishes that the federal government shall use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 USC 4331[b][2]). To further emphasize this point, the Federal Highway Administration (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, taking into account adverse environmental impacts, including, among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act (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" (California Public Resources Code [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.

2.1.5.2 Affected Environment

Information in this section is based on the Visual Impact Assessment (Caltrans 2018b) prepared for the proposed project.

The proposed project is located along Pine Avenue between SR-71 and Euclid Avenue in the cities of Chino and Chino Hills in San Bernardino County, California. The Chino Hills, which are foothills of the Santa Ana Mountains, can be seen rising approximately one mile due west of the project. The predominant land uses along the project corridor are recreational and undeveloped open space and commercial/industrial land uses.

Waterbodies in the project area include Chino Creek and Cypress Channel, both of which bisect the El Prado Golf course and flow under Pine Avenue. To the north of Pine Avenue, between SR-71 and Chino Creek, the land is undeveloped open space that is vegetated with some chaparral shrubbery and serves as an overflow area for Chino Creek during high flows.

The project corridor is visible from the site and bordering roadways, but access from this area is limited as access to Pomona Rincon Road/Fairfield Ranch Road is blocked off at Pine Avenue.

In addition, the segment of Pine Avenue between Pomona Rincon Road/Fairfield Ranch Road and El Prado Road is blocked and restricted to access.

The Inland Empire Utilities Agency plant along El Prado Road is located just north of Pine Avenue, however, views of Pine Avenue are not available because they are blocked by perimeter landscaping along the southern border of the facility and the raised, vacant lot that is just south of the facility.

The majority of the project corridor is bordered to the north and south by the El Prado Golf Course, which is characterized by gently rolling terrain that is landscaped with trees and highly manicured lawns and greens. The entry and parking lot for the golf clubhouse are located in close proximity to El Prado Road and Pine Avenue. Most views of the project corridor from the golf course are either blocked partially and screened or blocked by the rolling terrain and trees, but views of Pine Avenue are available from the areas directly bordering Pine Avenue. In addition, there are two golf cart crossings across Pine Avenue, allowing for direct views of the project corridor. A large unvegetated vacant lot exists between the golf course and Euclid Avenue along the south side of Pine Avenue.

The industrial uses include several warehouses and located on either side of Fern Avenue adjacent to Pine Avenue. Views toward the Chino Hills and Santa Ana Mountains are available over the vacant land to the south of Pine Avenue, but are not considered scenic vistas because views are interrupted by the high-voltage lattice steel transmission corridors that pass in front of the view, within the foreground that consists of a vacant lot. Views from Euclid Avenue, Fern Avenue, and El Prado Road are available on approach to the project corridor.

Prado Regional Park is generally located south of Pine Avenue and south of the El Prado Golf Course, which prevents views of the project corridor. Furthermore, the majority of the park amenities including picnic areas, playground, campsites, and ball fields are all located southeast of Pine Avenue.

Commercial and residential uses are located west of SR-71, however, sound barriers along SR-71 and the SR-71 facility itself prevent views toward the project site from the residential areas. Views may be visible from second story windows of the commercial buildings that are located near the southbound SR-71 on-ramp at Pine Avenue. Views along SR-71 from vehicles are not available as SR-71 is at a lower elevation than the raise Pine Avenue on-and off-ramps. As such, views of the project corridor are available from the Pine Avenue overcrossing over SR-71 and the tops of the northbound on-and off-ramps because they are located at a higher elevation than the project corridor.

The borrow site is located to the southeast of Pine Avenue with the existing ground elevated from the surrounding area and resembling a mound of dirt. The borrow site is east of the Prado Regional Park and immediately north of Prado Airpark, a remote-control model airplane field utilized for flying model airplanes. Views to the proposed borrow site from Prado Airpark is unobstructed. Views towards the Chino hills and Santa Ana Mountains are available from this location.

There are no roadways in or near the project area that are designated in federal, state, or local plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds. Furthermore, according to Caltrans, SR-71 is not a Classified Landscaped Freeway

2.1.5.3 Environmental Consequences

Build Alternative

Construction

The Build Alternative involves realigning Pine Avenue between the existing SR-71 ramp at Pine Avenue and El Prado Road and widening Pine Avenue from two to four lanes. The realignment would cross undeveloped open space lands and affect trees and shrubs associated on that land. The widening would affect formal and informal landscaping terrain, and fencing associated with the El Prado Golf Course located adjacent to the project. The proposed project would slightly alter the entry, parking lot, and golf cart paths associated with the El Prado Golf Course. The most notable changes associated with the golf course would be the removal of mature trees that would be seen by recreationalists, and also affect views along Pine Avenue for vehicles utilizing the roadway. However, avoidance and minimization measure VIS-3, which would replace or relocate site features and landscaping affected by the project, would lessen impacts to El Prado Golf Course.

Construction of three access driveway points east of Cypress Channel to Euclid Avenue, installation of local area storm drains along Pine Avenue, raising of utility poles and lines, and utility relocations would occur, to accommodate the project. This would result in minor visual changes as the modifications are occurring and would not result in substantial visual changes once built because these changes are minor and are seen as in keeping with the existing conditions of the surrounding area.

Fill would also be needed to raise the elevation of Pine Avenue to meet the existing SR-71 ramp at Pine Avenue. The proposed borrow site would be excavated down approximately 20 to 30 feet in depth to reach suitable soils and the suitable soils would be transported on local roadways to the fill location. Afterwards, the borrow site would be re-compacted with the existing, remaining soil, leveling the center of the site, and graded to a final free draining condition (i.e., no standing water) and stabilized with a vegetated mix. The construction traffic would be visible on local roadways mostly to recreational roadway users visiting the Prado Airpark and El Prado Golf Course. Construction traffic may be disruptive as construction trucks enter and exit the borrow site and fill site but would generally be consistent with the agricultural traffic and agricultural vehicles in the area. The placement of the fill would introduce a new landform into views, but the embankment would be similar to the exiting landforms associated with SR-71 and the existing developed, urban condition of Pine Avenue west of SR-71. The included measures VIS-1 to VIS-6 would aid in further minimizing visual impacts associated with roadside grading and slopes.

Along Pine Avenue, roadside grading, which includes both cut and fill, would require erosion control measures to vegetate exposed soils. In addition, a new bridge structure, approximately 500-foot long, would be constructed to span Chino Creek, increasing the transportation infrastructure at this location. While visual access to this affected area is somewhat minimal, the

affected viewers are mostly recreationalists who tend to have a higher interest in their visual surroundings. Measures VIS-4 and VIS-5 would provide visual interest and help the embankment to better blend with the existing SR-71 corridor. The roadside aesthetics would be enhanced by adding non-invasive, native wildflowers to erosion control seed mix which would be applied to disturbed areas and vegetate the embankment slopes where applicable.

Construction of the RCB culverts across the Cypress Channel would result in minor visual changes as the modifications are occurring. This would not result in substantial visual changes once built because such changes would hardly be noticeable when viewed in conjunction with the embankment and widened roadway corridor. Construction of the Pine Avenue RCB golf cart undercrossing would create a safer crossing for golf carts by removing the need for the golf carts to cross at-grade. This undercrossing, and the associated realigned golf cart pathways, are likely to be viewed as positive visual changes. These changes would provide for unimpeded access to the golf course on either side of Pine Avenue and prevent the need for golfers to stop and wait for passing vehicular traffic.

The increase in the paved areas and the removal of some roadside vegetation that currently provides shade would result in nominal increase in daytime glare. However, the additional pavement areas would reduce glare while roadside vegetation would still be present along the right of way. Measure VIS-5 would serve a dual purpose to help reduce glare by replacing sources of shade through replacement plantings. As such, the proposed paving would not create a new source of substantial glare that would adversely affect daytime or nighttime views in the area. However, street lighting is proposed along the project corridor and if not properly designed, could adversely affect nearby roadway neighbors and roadway users. Furthermore, installation of traffic signals at the intersection of Fairfield Ranch Road/Pomona Rincon Road at Pine Avenue and at El Prado Road at Pine Avenue would result in an incremental increase in light and glare associated with the project. Street lighting utilizing light emitting diode (LED) lighting can adversely affect humans by increasing nuisance light and glare. This could result in a substantial source of light and glare that could adversely affect nighttime views in the area. Measure VIS-6 would reduce potential adverse effects associated with street lighting.

Changes associated with the project would result in slight alterations to the existing visual character of the site but would still appear largely consistent with the existing conditions. The proposed project would tie into existing portions of Pine Avenue and are wide enough to accommodate four lanes near Euclid Avenue, as such, this portion of Pine Avenue would conform to the existing visual conditions located at either end of the project corridor. This would create a visually consistent roadway corridor throughout the project vicinity. With implementation of the proposed measures, changes associated with the project would remain consistent with the existing visual environment. The project would neither affect any scenic resources along a State scenic route or Classified Landscaped Freeway nor any scenic vista views during construction.

Operation

There are no scenic roadways in or near the project area, so there would be no affect to such resources during operation. Scenic vista views would not be adversely affected during operation because the project would not introduce features that would block or alter such views. Minor

visual changes would result from operation of the project. Utilities would be relocated or raised along Pine Avenue, however, the presence of utilities would be consistent with existing conditions. Utilities are already existing visual elements within the project corridor, therefore, their relocation or raising would not alter the visual character of views of and from the project corridor. The proposed culverts would result in minor visual changes, once in operation. However, such changes would not stand out in conjunction with the embankment and widened roadway corridor. In addition, the El Prado Golf Course entrance would be slightly altered but measure VIS-3 would aid in replacing entryway plantings. This measure would also help to replace roadside landscaping associated with the golf course and help to reduce glare. Access driveways would be visually consistent with existing conditions and the golf cart underpass would not affect existing visual resources. The project would result in slight alterations to the visual character, but the changes would be largely consistent with the existing visual character by conforming to widths that currently exist on either end of the project corridor. The embankment would stand out slightly and reduce the amount of undeveloped open space in the area. By adding non-invasive, native wildflowers and grasses to erosion control seed mix, which would be applied to disturbed areas and by vegetating the embankment slopes where applicable, visual interest would be provided, the embankment would better blend with the existing SR-71 corridor, and roadside aesthetics would be enhanced.

2.1.5.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following measure would avoid, minimize, and/or mitigate visual impacts:

VIS-1: Avoid and Protect Trees in Staging Areas during Construction. Trees that are located within staging areas will be avoided and protected during construction. Tree protection zones for all trees will be the dripline radius plus one foot. The fencing will remain in place throughout the duration of time that the staging area is used. Tree protection fencing must be a minimum six-foot-tall orange safety fencing or substitute fencing. The location of the fencing will be indicated on the project design engineer's grading plans. The fencing will be erected before demolition, grading, or any other construction activity begins. Fencing should not be placed on private property without written authorization from the property owner. The following activities are prohibited throughout the course of the project within the tree protection zone.

- Storage or parking of vehicles, building materials, refuse, or excavated soil material.
- Use, access, or parking of heavy equipment, such as backhoes, tractors, and other heavy vehicles and equipment.
- Dumping of poisonous chemicals or materials, with known or unknown properties that potentially could be deleterious to tree health, such as paint, petroleum products, concrete or stucco mix, or dirty water.
- The use of tree trunks for winch support, anchorage, power pole, sign post, or any other function.
- Drainage changes, grade changes, soil disturbance.

VIS-2: Minimize Fugitive Light from Portable Sources Used for Construction. At a minimum, the construction contractor shall minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights will be used. Portable lights will be operated at the lowest allowable wattage and height and will be raised to a height no

greater than 20 feet unless otherwise necessary for safety considerations. All lights will be screened and directed downward toward work activities and away from the night sky and roadway users and highway neighbors to the maximum extent possible. The number of nighttime lights used will be minimized to the greatest extent possible.

VIS-3: Replace or Relocate Site Features and Landscaping Affected by the Project. Where appropriate and to the degree possible, landscaping and related appurtenances, such as fencing, removed from private properties because of construction will be relocated, replaced, or restored in place and in kind to minimize visual impacts.

VIS-4: Use Native Grass and Wildflower Species in Erosion Control Grassland Seed Mix. The project proponent will require construction contractors to incorporate regionally appropriate drought tolerant native grass and wildflower seed in standard seed mixes for erosion control measures that will be applied to all exposed slopes. Under no circumstances will any invasive grass or wildflower plant species be used as a component in any erosion control measures. Wildflowers will provide seasonal visual interest to areas where trees and shrubs are removed and grasslands are disturbed. Species will be chosen that are indigenous to the area and for their appropriateness to the surrounding habitat. For example, upland grass and wildflower species will be chosen for drier, upland areas, and wetter species will be chosen for areas that will receive more moisture. Any wildflowers not appropriate to the surrounding habitat should not be included in the seed mix. The final seed mix shall be approved by Caltrans biologist and landscape architect.

VIS-5: Implement Slope Landscaping. Landscaping on applicable areas of the constructed earth slopes, including median and parkway landscaping where applicable, will improve the visual quality of the roadway corridor by enhancing corridor aesthetics and reducing the apparent scale of the new embankment. During final design, and prior to approval of the roadway design, the Caltrans project landscape architect shall review project designs and ensure that the following elements are implemented into the project landscaping plan, as well as meet the City of Chino landscape requirement for parkways and medians, if applicable:

- One hundred percent of the species composition will reflect native and indigenous species to the project area and California. Native plant species can be used to create attractive spaces, high in aesthetic quality, are drought-tolerant, and will attract more wildlife than non-native landscape plant palettes. Use of native species, promotes a visual character of California that is being lost through development and reliance on non-native ornamental plant species.

- The species list will include both evergreen and deciduous trees, shrubs, and an herbaceous understory of varying heights, as well as both evergreen and deciduous types. Plant variety will increase the effectiveness of the roadside planting areas by providing multiple layers, seasonality, diverse habitat, and reduced susceptibility to disease. Evergreen groundcovers or low-growing plants should be used in areas where taller vegetation would potentially cause driving hazards by obscuring site distances.

- Under no circumstances will any invasive plant species be used at any location.

- Vegetation shall be planted within the first six months following project completion.

VIS-6: Apply Minimum Lighting Standards. All artificial outdoor lighting and overhead street lighting will be limited to safety and security requirements and the minimum required for driver safety. Lighting will be designed using Illuminating Engineering Society's design guidelines and in compliance with IDA–approved fixtures. All lighting will be designed to have minimum impact on the surrounding environment and will use downcast, cut-off type fixtures that are shielded and direct the light only toward objects requiring illumination. Therefore, lights will be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, or backscatter into the nighttime sky. The lowest allowable wattage will be used for all lighted areas, while minimizing the number of nighttime lights needed. Light fixtures will have non-glare finishes that will not cause reflective daytime glare. Lighting will be designed for energy efficiency, with daylight sensors or timers with an on/off program. Lights will provide good color rendering with natural light qualities, with the minimum intensity feasible for security, safety, and personnel access. Lighting, including light color rendering and fixture types, will be designed to be aesthetically pleasing. LED lighting will avoid the use of BRWL lamps and use a correlated color temperature that is no higher than 3,000 Kelvin, consistent with the IDA's Fixture Seal of Approval Program (International Dark-Sky Association 2010a, 2010b, 2015). In addition, LED lights will use shielding to ensure that nuisance glare and light spill does not affect sensitive residential viewers. Technologies to reduce light pollution evolve over time. Design measures that are currently available may help but may not be the most effective means of controlling light pollution once the project is designed. Therefore, all design measures used to reduce light pollution will use the technologies available at the time of project design to allow for the highest potential reduction in light pollution.

2.1.6 Cultural Resources

2.1.6.1 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 and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including "historic properties," "historic sites," "historical resources," and "tribal cultural resources." Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the Federal Highway Administration (FHWA), the ACHP, the California State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the ACHP's

regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA's responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 USC 327).

The 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. California Public Resources Code (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. Historical resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill 52 (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 (as well as identifying measures to avoid, preserve, or mitigate effects to them). 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. Unique archaeological resources are referenced in PRC Section 21083.2.

2.1.6.2 Affected Environment

This section is based on the Historic Property Survey Report (HPSR), and associated Historic Resources Evaluation Report (HRER), ESA Action Plan, Finding of Effect (FOE), and Archaeological Survey Report (ASR) prepared for this project.

Area of Potential Effect

The Area of Potential Effect (APE) for the project was established from the proposed area of direct impact, plus a buffer area to include potential indirect effects. The vertical extent of excavation varies from 65 feet below the ground surface at pile locations to between 2 to 6 feet below grade elsewhere along the Pine Avenue alignment, and 20 to 30 feet below grade at the borrow site. The vertical APE height limit is 52.5 feet to account for the height of the proposed bridge across Chino Creek and the heights of proposed streetlights atop the bridge. The APE includes all anticipated direct impacts from construction plus a buffer to include potential indirect effects.

Local Agencies and Groups

Letters describing the project and request for cultural resources input was sent to the following agencies in July 2017:

- City of Chino Hills Planning Division: Joann Lombardo responded by letter on August 22, 2017. She shared that the City of Chino Hills Plan Update is available online with information on local resources. The source was reviewed and no additional resources in or near the APE were discovered.
- City of Chino Planning Department: Follow-up letter was sent on March 6, 2020. No response was received and a follow-up email was sent on May 4, 2020 with no response

received. On February 4, 2021, a follow-up phone call was made. Warren Morelion stated that he did not know of any cultural resources in the project area.

- San Bernardino Historic Preservation Commission: Follow-up letter was sent on March 6, 2020. No response was received and a follow-up email was sent on May 4, 2020 with no response received. On February 4, 2021, a follow-up phone call was made. Lesa Nichols responded on February 8, 2021 and stated that the Commission only covers the City of San Bernardino. She provided contact information for the Chino Valley Historical Society and recommended contacting them for information.
- Riverside County Planning Department: Patrick McDonough, Senior Planner for Riverside County responded by email on August 2, 2017. He stated he was not aware of any resources and that the City of Chino was more likely to provide information.
- Riverside County Historical Commission: Follow-up letter was sent on March 6, 2020. No response was received and a follow-up email was sent on May 4, 2020 with no response received. On February 4, 2021, a follow-up phone call was made. No response was received.
- Riverside County Transportation and Land Management Agency: Follow-up letter was sent on March 6, 2020. No response was received and a follow-up email was sent on May 4, 2020 with no response received. On February 4, 2021, a follow-up phone call was made. No response was received.

Native American Consultation

The Native American Heritage Commission (NAHC) was contacted regarding the project on December 9, 2016. The NAHC responded on December 14, 2016 that a search of its Sacred Lands Database did not yield any sacred lands or traditional cultural properties within the project area. The NAHC provided a list of Native American contacts who may have additional information regarding cultural resources in the area. Consultation letters and maps of the project were sent to the following Native American groups on February 23, 2017 and consultation was reinitiated in July 2018:

- Gabrieleno Band of Mission Indians-Kizh Nation (Andrew Salas): Email received on March 14, 2017 stating that the Gabrieleno Band of Mission Indians-Kizh Nation would discuss the project only with the lead agency for Assembly Bill (AB) 52 purposes. Follow-up consultation letter sent on July 16, 2018. Mr. Salas contacted Caltrans by email on July 19, 2018 requesting consultation with Caltrans and the City of Chino, pursuant to Section 106 of the NHPA and AB52, respectively. As part of the AB52 consultation, Mr. Salas indicated ongoing communication with the City of Chino and had requested monitoring for the entire project due to the presence of a prehistoric site. Mr. Salas also provided ethnographic documents, which have been utilized for portions of the Archaeological Survey Report (ASR) prepared for the project. On October 25, 2021 copies of the ASR and notification of the Finding of No Adverse Effects without Standard Conditions were sent to the Gabrieleno Band of Mission Indians-Kizh Nation. A copy of the HPSR with the Finding of No Adverse Effects without Standard Conditions was also submitted on January 21, 2022. The FOE contains a measure for

monitoring of the Archaeological Monitoring Area (AMA) only. No responses have been received by Caltrans to date.

- Gabrieleno/Tongva San Gabriel Band of Mission Indians (Anthony Morales): Phone call received on March 17, 2017 from Mr. Morales indicated a nearby project that found buried artifacts during construction and stressed the importance of having a Native American Monitor present during project construction. Follow-up consultation letter sent on July 16, 2018. Mr. Morales was contacted on December 4, 2018 and had requested to be a part of future consultation and for an archaeological monitor and a Native American Monitor from the Gabrieleno/Tongva San Gabriel Band of Mission Indians to be present for ground disturbing activities. On October 25, 2021, copies of the ASR and notification of the Finding of No Adverse Effects without Standard Conditions were sent to the Gabrieleno/Tongva San Gabriel Band of Mission Indians. A copy of the HPSR with the Finding of No Adverse Effects without Standard Conditions was also submitted on January 21, 2022. The FOE contains a measure for monitoring of the Archaeological Monitoring Area (AMA) only. No responses have been received by Caltrans to date.
- Gabrielino/Tongva Nation (Sandonne Goad): Follow-up phone calls made and messages left on March 20, 2017, and July 13, 2017. Follow-up consultation letter sent on July 16, 2018. Follow-up phone calls and messages left on December 4, 2018, and January 3, 2019. No responses have been received.
- Gabrielino Tongva Indians of California Tribal Council (Robert F. Dorame): Follow-up phone call made on March 20, 2017, July 13, 2017. Follow-up consultation letter sent on July 16, 2018. Follow-up phone calls made on December 4, 2018 and January 3, 2019. No messages were left due to inactive voice mail system. No responses have been received.
- Gabrielino-Tongva Tribe (Linda Candelaria): Follow-up phone calls with messages made on March 20, 2017 and July 13, 2017. Follow-up consultation letter sent on July 16, 2018. Follow-up phone call made on December 4, 2018, and January 3, 2019. No responses have been received.
- San Fernando Band of Mission Indians (John Valenzuela): Follow-up phone call and messages left on March 20, 2017, July 13, 2017. Follow-up consultation letter sent on July 16, 2018. Follow-up phone call and messages left on December 4, 2018 and January 3, 2019. No responses have been received.
- Soboba Band of Luiseno Indians (Joseph Ontiveros): Added to list of Native American contacts list during July 16, 2018 follow-up communication. Mr. Ontiveros was contacted on December 4, 2018 and he stated that the project was outside of his tribal area and to further consult with the Gabrielino Tribes.

Historical Societies/Historic Preservation Groups

Letters were also sent to the following historical societies and historic preservation groups in July 19, 2017, March 6, 2020, and May 4, 2020:

- Chino Valley Historical Society: The Chino Valley Historical Society indicated receiving project information on May 5, 2020. They did not provide any additional information identifying cultural resources in or near the APE.

- San Bernardino County Museum: Jenifer Dickerson responded via email on May 4, 2020 with information about the Yorba-Slaughter Families Adobe. The site, owned by San Bernardino County since 1971 is a California State Historical Landmark and listed on the National Register of Historic Places. This site is located outside of the project APE.
- San Bernardino Historical Society: No responses have been received on previous attempts. On February 4, 2021, a follow-up phone call was made and the San Bernardino Historical Society did not have any information on historical resources in the project area.
- The Yorba-Slaughter Families Adobe: No responses have been received to date. On February 4, 2021, a follow-up phone call was made. No responses have been received.

Archaeological Resources

The following sources were also consulted: the National Register of Historic Places (NRHP), California Points of Historical Interest, California Register of Historical Resources (CRHR), California Historical Resources Information System (CHRIS), National Historic Landmark (NHL), Caltrans Historic Bridge Inventory, Los Angeles Public Library, Sanborn Fire insurance Maps, San Bernardino County Archives, and historic aerial photography.

Background records searches were conducted at the Eastern Information Center (EIC) and South Central Coastal Information Center (SCCIC) in December 2016. The records searches indicated that 100 percent of the APE has been previously surveyed and that seven previously recorded cultural resources are present in the APE with three of the seven resources no longer extant; an additional 64 resources have been recorded within a half-mile radius of the APE. The previously recorded cultural resources within the APE are listed below:

- Pomona-Rincon Road (P-36-006817/CA-SBR-6817);
- Southern Sierras and Southern California Edison 115 kV line (P-36-013627/CA-SBR-12613H);
- Cypress Channel (P-36-024903);
- Cogstone Point (P-36-005096/CA-SBR-5096);
- Stahl Dairy (P-36-013728) (No longer extant);
- MAK Chino Dairy 25 Watt Power Pole (P-36-013729) (No longer extant);
- Farm complex (P-36-023479) (No longer extant);
- Stahl Dairy Prehistoric Site (P-36-005242/CA-SBR-5242)

There are approximately 10.29 acres of land covered in dense vegetation with little to no visibility and could not be surveyed previously. This area will be surveyed during the grubbing and clearing activities.

Historic resource field surveys were also conducted in June 2017, February 2020, and January 2021. The survey resulted in three previously recorded resources and identification and recordation of one new built environment resource, the Southern California Edison Chino-San Juan Capistrano Transmission Line.

The following archaeological site within the APE are considered eligible for inclusion in the NRHP for the purposes of this project because it will be protected in its entirety from any potential effects through the establishment of an Environmentally Sensitive Area (ESA):

- P-36-005096/CA-SBR-5096/Cogstone Point.

2.1.6.3 Environmental Consequences

Build Alternative

There are cultural resources within the APE that were evaluated as a result of this project and determined not eligible for inclusion in the NRHP, as listed below:

- Pomona Rincon Road (P-36-006817/CA-SBR-6817);
- Southern Sierras and Southern California Edison 115kV line (P-36-013627/CA-SBR-12613H);
- Cypress Channel (P-36-024903);
- Southern California Edison Chino-San Juan Capistrano Transmission Line.

Caltrans determined the four cultural resources ineligible for listing in the NRHP and received SHPO concurrence via letter dated July 25, 2022. As stated previously, archaeological site P-36-005096/CA-SBR-5096/Cogstone Point within the APE is considered eligible for inclusion in the NRHP due to its large size and minimal potential to effect. As all of the intact bulk of the site can be avoided and protected in place, evaluation was determined to be not required. The potential to disturb intact elements of the site is minimal and the area affected is limited to portions of previously disturbed fringes, of an otherwise large intact site, where erosion has likely re-deposited artifacts from the core area on higher ground into a secondary context downslope, which was subsequently further disturbed by past agricultural activity.

The results of the literature and records search indicate that one previously recorded archaeological resource (P-36-005096/CA-SBR-5096/Cogstone Point) was identified in the APE. This archaeological site contains groundstone and lithics. Additionally, six previously recorded built environment resources occur in the APE, and two other reported but unrecorded sites were identified as potentially located in the APE during identification efforts. Approximately 10.29 acres of the APE was not surveyed due to dense vegetation and sensitive biological habitat concerns resulting in the need for a minor phased identification and survey of the remaining approximately 10.29 acres. This would be postponed to the grubbing and clearing stages of preliminary construction activity. The phased identification protocol allows for completion of archaeological survey prior to project construction. In compliance with the National Historic Preservation Act, Caltrans anticipates that the project will have no adverse effect without standard conditions. The unsurveyed portion of the APE has been subjected to seasonal alluvial flooding and there is a low likelihood of finding intact surface deposits. A Finding of No Adverse Effect without Standard Conditions for the project was prepared because potential effects on archaeological resources, while low, remain undetermined. Based on record searches, an archaeological survey, and soil conditions, it is anticipated that no intact archaeological resources are present in the unsurveyed portion of the APE. This will be confirmed after vegetation is removed and a survey is completed based on the methods

consistent with the inventory surveys completed in February 2017. Once completed, Caltrans will consult with the SHPO to validate or review the proposed Finding of No Adverse Effect.

Although potential for cultural resources in the APE cannot be discounted, it must be noted that the majority of the APE is extremely disturbed with modern development, grading activities, and landscaping. In addition, a portion of the APE has been subjected to seasonal alluvial flooding, therefore, the potential for intact cultural resources is considered low.

If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State 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 shall be contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), which will then notify the most likely descendant. At that time, the person who discovered the remains will contact Gary Jones, Caltrans, Environmental Support, Cultural Studies, District Native American Coordinator (DNAC), Prehistoric Archaeology, so that he can 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.

No-Build Alternative

Under the No-Build Alternative, no modifications or construction to the existing roadway or the land would occur; therefore, no effects on historical or archaeological cultural resources would occur.

2.1.6.4 Avoidance, Minimization, and/or Mitigation Measures

CR-1: If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

CR-2: If human remains are discovered, State 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 shall be contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which will then notify the most likely descendent. At that time, the person who discovered the remains will contact Andrew Walters, District Environmental Branch Chief (DEBC): (909) 383-2647, so that he can 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.

CR-3: An ESA exists in the western portion of the project, adjacent to the south side of the ADI for Pine Avenue. The ESA boundary is set along the edge of construction and surrounds archaeological site P36-005096/CA-SBR-5096 Cogstone Point in its entirety, as shown as shown on the APE Map, in the Project Plans, and in the ESA / AMA Monitoring and Discovery Plan. The ESA is closed and may not be entered.

CR-4: An AMA exists in the western portion of the project, covering the northern portion of archaeological site P36-005096/CA-SBR-5096 Cogstone Point where the ADI for Pine Avenue construction traverses a small, previously disturbed portion of the site. The AMA boundary is set along the southern edge of construction and covers the previously recorded limits of the site on the northern side of the ESA fence line, as shown on the APE Map, in the Project Plans, and in the ESA / AMA Monitoring and Discovery Plan. Construction activity within the limits of the AMA may not commence without the presence of the archaeological monitor.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

2.2.1.1 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. The Federal Highway Administration (FHWA) requirements for compliance are outlined in 23 Code of Federal Regulations (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."

2.2.1.2 AFFECTED ENVIRONMENT

The following section is based on the Location Hydraulic Study Report (Caltrans 2018d) prepared for the project.

The project area is located just upstream of the Prado Dam Flood Control Basin in the Cities of Chino and Chino Hills, in San Bernardino County. Surface water occurring on site is ultimately conveyed to either Chino or Cypress Creeks, which convey flows to the Prado Dam Flood Control Basin and into the Santa Ana River. Flows from two perennial streams, Chino Creek and Cypress Channel, are conveyed under Pine Avenue. The Federal Emergency Management Agency (FEMA) Digital Flood Insurance Rate Map (DFIRM) Panel #06071C9335H shows that the existing alignment of Pine Avenue falls within a Flood Hazard Zone AE with 1 percent annual exceedance probability (AEP) elevation of 552 feet. Euclid Avenue south of Pine Avenue is designated as a Zone AE with 1 percent AEP elevation of 552 feet. During major flooding events, it is expected that both Pine Avenue and Euclid Avenue will be closed to traffic due to hazardous conditions.

The maximum water surface elevation on record in the Prado Basin was recorded on February 22, 1980. On that day the water surface elevation reached a level of 528 feet and based on existing topographic data, the event flooded a 230-foot long segment of the existing Pine Avenue in the vicinity of Chino Creek. Furthermore, the existing double 72-inch corrugated metal pipe (CMP) culvert running underneath Pine Avenue at Chino Creek is undersized to pass the 100-year peak discharge and the 15-foot span by 3-foot rise culvert at Cypress Channel running under

Pine Avenue is also undersized to pass the 100-year peak discharge. During storm events of rarer frequency, the soffit of each culvert becomes submerged and the roadway becomes overtopped and flooded. During the 2011-2012 rainy season, the erosive forces resulted in the culvert at Chino Creek to be washed out and Pine Avenue, west of El Prado Road has been closed to traffic since.

Beneficial uses represent the services and qualities of a water body. Water quality in a typical surface water body is influenced by processes and activities that take place within the watershed. Due to the urbanized nature of the project vicinity, surface water quality in the area is directly affected by stormwater runoff from adjacent streets, highways, and properties with fertilizers, pesticides, metals, hydrocarbons, and other pollutants. Beneficial uses for Chino Creek and the Santa Ana River are designated in the Santa Ana Water Board Basin Plan. The majority of drainage features in the project vicinity ultimately discharge to Chino Creek or Cypress Channel and then to the Santa Ana River through Prado Dam.

2.2.1.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

With implementation of water quality Best Management Practices (BMPs) during construction, including the use of soil stabilizers, flow conveyance control, and sediment control, surface runoff water quality impacts during construction would be minimized. No direct or indirect adverse short-term impacts would occur from construction of the project.

Operation

As part of the proposed project, a Clean Water Act 404 Permit will be obtained from USACE for placement of dredge or fill materials within Waters of the United States and impacts to aquatic environments are anticipated. Consistent with the direction received from USACE, the fill materials to be used for the project would be generated from a separate area located within the Prado Basin. The borrow site, located at the northeast corner of McCarty Road and Cucamonga Avenue, would result in positive natural drainage (ie., no standing water or blockage of flows) within the Prado Basin and would not reduce the storage capacity of the Prado Basin. In addition, the Location Hydraulics Study Report analysis demonstrates that the final design would allow water to back-flow into the reservoir north of Pine Avenue without impediments.

The Location Hydraulics Study Report analysis also shows that the friction losses, or loss of energy for water contact with the existing ground, due to the embankment and the design of the bridge over Chino Creek would be slightly increased by 2 inches. These impacts show that the friction losses would be minimal at the Chino Creek bridge when water from Prado Basin backflows upstream of the embankment. Similarly, the analysis concluded that the friction losses due to the embankment and the design of the improved culvert at Cypress Channel would be slightly decreased by 1 inch. As such, there would be minimal floodplain impacts associated with the project. The project would cause increases in impervious areas, but these areas are insignificant when compared to the tributary drainage area of Chino Creek and would not significantly increase flows or affect the floodplain area.

Implementation of the project would improve the existing crossings with Chino Creek and Cypress Channel with the proposed design being in compliance with the Caltrans design criteria. Based on the analysis conducted in the Location Hydraulics Study Report, there are no risks associated with the filling and dredging activities within the Prado Flood Control Basin, the project would have a de minimis impact on the hydraulic conveyance capacity within Prado Basin, and would allow water to backflow into the reservoir without impediment and not cause changes in the 100-year water surface elevation.

No-Build Alternative

Under the No-Build Alternative, the extension of Pine Avenue would not be carried out and no construction would occur. Therefore, the No-Build Alternative would not result in short-term or long-term direct or indirect adverse impacts related to hydrology or floodplains.

2.2.1.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

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

2.2.2 Water Quality and Storm Water Runoff

2.2.2.1 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 (MS4s).

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

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The 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.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404 (b)(1) Guidelines (40 Code of Federal Regulations [CFR] Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[2] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

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. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. 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

[2] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) 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. In California, RWQCBs designate beneficial uses for all waterbody 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 WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). 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. RWQCBs 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 (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An 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 the Department as an owner/operator of an MS4 under federal regulations. The Department's MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department's MS4 Permit Order No. 2012-0011-DWQ (adopted on September 19, 2012 and became effective on July 1, 2013), as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014) and Order No. 2015-0036-EXEC (conformed and effective April 7, 2015) has three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);
2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit

Construction General Permit, Order No. 2009-0009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012). The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water 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 General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit 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 Storm Water Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with the Department's SWMP and Standard Specifications, a Water Pollution Control Program (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The

401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as waste discharge requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

2.2.2.2 AFFECTED ENVIRONMENT

The primary source used in the preparation of this section is the Water Quality Assessment Report (Caltrans 2018a) prepared for the project.

The project involves extending Pine Avenue from SR-71 eastward to El Prado Road as an urban four-lane arterial and widening Pine Avenue to a four-lane arterial from El Prado Road to Euclid Avenue in the cities of Chino and Chin Hills. The project is located within the northern portion of Prado Basin in San Bernardino County. The project occurs within the Prado Basin floodplain with the Chino Creek located 0.15 mile west of El Prado Road. The Cypress Channel also bisects the project site and is located 0.30 mile east of El Prado Road. The project area is within the Santa Ana River hydrologic unit code (HUC) 8 watershed, more specifically, the Chino Creek HUC 10 watershed, which is a sub-watershed of the larger Santa Ana River HUC 8 watershed. The project is also within the Upper Santa Ana Valley groundwater basin, specifically, the Upper Santa Ana Valley-Chino Sub-basin. Refer to Figure 4, Hydrologic Features map.

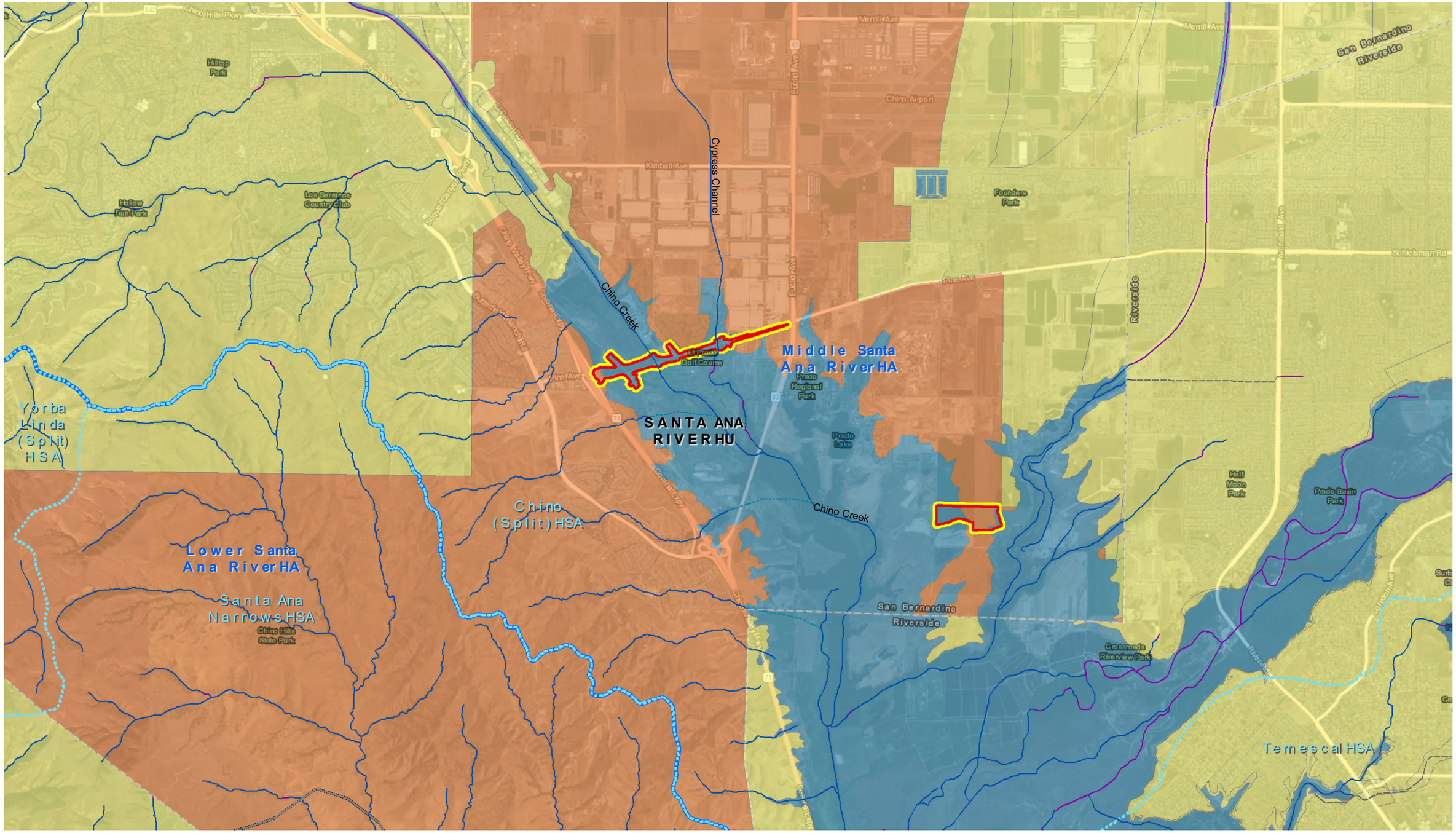
The project area is upstream of Prado Basin in the cities of Chino and Chino Hills. Surface water occurring on the site is ultimately conveyed to either Chino or Cypress Creeks, which convey flows to Prado Basin and the Santa Ana River. The two perennial streams, Chino Creek and Cypress Channel, defined as Waters of the U.S., have their flows conveyed under Pine Avenue.

Chino Creek

Chino Creek drains a watershed of about 218 square miles that is mostly developed for residential, industrial, and agricultural uses. It originates from resurfacing groundwater in Pomona in eastern Los Angeles County. A concrete channel enters southwestern San Bernardino County and runs generally southeast across the Chino Valley between Chino Hills to the south and the City of Chino to the northeast. One of the creek's main tributaries is San Antonio Creek, which confluences with Chino Creek approximately 550 feet upstream of Chino Avenue. The course of Chino Creek in the lower part of the watershed runs parallel to SR-71. As it passes under South Central Avenue, the streambed changes from a concrete trapezoidal channel to an engineered earthen trapezoidal channel. As it passes Fairfield Ranch Park and the Big League Dreams baseball field, Chino Creek outlets into the Prado Basin.

Cypress Channel

The Cypress Channel drains an approximately 8.8-square mile drainage area that is predominantly a combination of residential, agricultural, and commercial land uses. Residential land uses are predominant in the upper portion of the watershed, with agricultural and dairy



Map Prepared: 5/21/2018
Source: ESRI Basemap; CalH2O

N

0 0.5 1 Mile
1:40,000

Legend

- Limits of Disturbance
- Study Area
- Hydrologic Area
- Hydrologic Subarea

Flood Hazard Zones

- 0.2% Annual Chance
- 1% Annual Chance
- Undetermined

Flowline (NHD)

- Connector
- ArtificialPath
- Pipeline
- CanalDitch
- StreamRiver

Figure 4
Hydrologic Features
Pine Avenue Extension Project

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operations south of Edison Avenue. The channel originates in the City of Ontario, traverses the City of Chino in a southerly direction, and continues through El Prado Golf Course where it crosses Pine Avenue. Cypress Channel is a predominantly trapezoidal channel with a concrete-lined bed and bank from Kimball Avenue to approximately 2,750 feet south of Bickmore Avenue where it outlets into the El Prado Golf Course. As it travels in a southerly direction through Prado Basin, Cypress Channel is an earthen non-engineered channel that low flows across Pine Avenue. Cypress Channel is not included in the Basin Plan for water quality objectives or beneficial uses, and it has not been identified under Section 303(d) of the federal Clean Water Act (CWA) as a water of the State.

Prado Basin

The Prado Basin is within the Santa Ana River watershed, which encompasses about 2.26 square miles. Four major watercourses drain into Prado Basin, including Chino Creek, Mill Creek, the Santa Ana River, and Temescal Creek. As previously mentioned, the project falls within the inundation zone of the Prado Basin. The Prado Dam, constructed in 1941, is operated by the USACE to control flooding in downstream urban areas within the County of Orange. As of 2008, the operational storage capacity of Prado Dam was 174,000 acre-feet.

Surface Water Quality and Beneficial Uses

Beneficial uses represent the services and qualities of a water body and its value. Water quality in a typical surface water body is influenced by processes and activities that take place within the watershed. Because of the urbanized nature of the project vicinity, surface water quality in the area is directly affected by stormwater runoff from adjacent streets, highways, and properties with fertilizers, pesticides, metals, hydrocarbons, and other pollutants. Typically, the pollutant levels are highest following the first stormflows of the season when constituents that accumulated during the dry season are flushed into the river. The Santa Ana Water Board designates region-wide and water body specific beneficial uses and sets numeric and narrative water quality objectives for several substances and parameters in the numerous surface waters in its region. Beneficial uses for Chino Creek and the Santa Ana River are designated in the Santa Ana Water Board Basin Plan. The majority of drainage features in the project vicinity discharge to Chino Creek or Cypress Channel and then to the upper Santa Ana River at Prado Dam. Beneficial uses for Chino Creek Reach 1B and Santa Ana River Reach 3 are designated in the Santa Ana Water Board Basin Plan and summarized in the table below.

Table 2.2-1. Designated Beneficial Use

Water Body	Designated Beneficial Uses
Chino Creek Reach 1B	Municipal and Domestic Supply (MUN), Water Contact Recreation (REC1), Non-contact Water Recreation (REC2), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), and Rare, Threatened, or Endangered Species (RARE).
Santa Ana River Reach 3	Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Groundwater Recharge (GWR), Water Contact Recreation (REC1), Non-contact Water Recreation (REC2), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Rare, Threatened, or Endangered Species (RARE), and Spawning, Reproduction, and Development (SPWN).
Source: Water Quality Assessment Report, September 2018.	

List of Impaired Waters

CWA Section 303(d) requires states to identify waters of the state that do not meet the CWA's national goal of "fishable" and "swimmable" and develop total maximum daily loads (TMDLs) for such waters, with oversight from the Environmental Protection Agency (EPA). Chino Creek Reach 1B is on the CWA Section 303(d) list of water-quality-limited segments. Chino Creek Rach 1B is impaired by chemical oxygen demand (COD), nutrients, and indicator bacteria. A TMDL for indicator bacteria within Chino Creek Rach 1B was adopted and approved by EPA in 2007. The TMDL expected completion date for nutrients is 2019; the expected completion date for COD is 2021. Prado Basin is listed as impaired for pH. The middle Santa Ana River is currently impaired for indicator bacteria, lead, and copper. Currently, one bacteria TMDL has been adopted for fresh water in the Santa Ana River watershed: the Middle Santa Ana River Bacteria TMDL, which became effective on May 16, 2007. The Santa Ana Water Board adopted the Middle Santa Ana River Bacteria TMDL in 2005; it was subsequently approved by EPA on May 16, 2007.

2.2.2.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Short-term or temporary construction impacts on water quality include the biological, physical/chemical, and human impacts that have the potential to occur during existing pavement removal, grading activities, and construction of the bridge, culverts, undercrossing, and widened roadway related to the project. Water quality impacts would be associated with soil disturbing and construction related activities.

Heavy construction equipment, construction-related materials, or post-construction roadway operations could introduce pollutants of concern or toxic chemicals to the project site that have the potential to violate water quality standards or waste discharge requirements (WDRs). Pollutants of concern are toxic chemicals from heavy construction equipment or construction-related materials such as paints and asphalt. A typical construction site uses many chemicals or compounds, including gasoline, oils, grease, solvents, lubricants, and other petroleum products. Many petroleum products contain a variety of toxic compounds and impurities and tend to form oily film on water surfaces, thereby altering the oxygen diffusion rates. Concrete, soap, trash, and sanitary wastes are other common sources of potentially harmful materials at construction sites. Water used for cleaning or washing equipment and tools as well as waste that is dumped or spilled on the construction site can easily introduce pollutants to surface waters or seep into groundwater. Construction occurring during the dry seasons are less likely to cause soil and channel erosion or result in runoff that could potentially introduce toxic chemicals to streams. However, low summer flows are less able to dilute pollutants before entering a watercourse. Heavy metals, oils, grease, and polycyclic aromatic hydrocarbons (PAHs) are common pollutants in road runoff. These and other contaminants are typically washed off the roadway surface by rainfall before entering stormwater runoff. The construction contractor would be required to regularly inspect and maintain the BMPs to ensure they are in good working order, as required in the Construction General Permit SWPPP. The contractor would implement appropriate hazardous material management practices, spill prevention measures, and other good housekeeping measures to reduce the potential for chemicals spills or releases of contaminants,

including any non-stormwater discharge to drainage channels. Implementation of these measures would minimize the potential for surface and groundwater contamination.

Aquatic features within the project area include Chino Creek and Cypress Channel. The project would result in construction of seven 12-foot wide by 5-foot high RCB culverts within Chino Creek floodplain. During construction, particulate material, debris, or sediment could be transported to other locations as a result of stormwater flow, thereby leading to potential degradation of water quality within and beyond the project area. Construction work, such as the cast-in-drilled-hole piles for the bridge, would disturb sediment on the embankment of Chino Creek, which could remobilize sediments as well as contaminants adsorbed to the sediments. Non-soluble contaminants with a tendency to adsorb to sediments (as opposed to soluble contaminants, which have a tendency to be readily diluted in water) can accumulate in the substrate over time. Resuspension of contaminants found in bottom substrate can remobilize the contaminants and release them into the water column, which can degrade water quality. In addition, re-suspended particulate material could be transported to other locations in the creek as a result of flow patterns, leading to potential degradation of water quality beyond the study area. Construction of the proposed facilities within the waterways is anticipated to occur during the summer months when the creeks have low flows. Any potential impact would be temporary and would cease upon completion of construction activities.

During construction, potential short-term increase in suspended particulates or turbidity, would result from soil erosion and suspended solids from land disturbances being introduced into water in storm drains and channels. As a result, temporary increases in turbidity may occur in the immediate area and potentially downstream. This could violate water quality standards or WDRs related to turbidity and have the potential to result in physiological, behavioral, and habitat effects on aquatic life. Construction activities occurring on land adjacent to the channels could cause the erosion of sediments and contribute to short-term increases in turbidity. Land-disturbing activities, such as demolition and grading, could result in erosion or debris being deposited into the storm drains or channels, which would increase turbidity in the drainage channels that ultimately lead to Prado Basin and the Santa Ana River. Construction of the proposed project is expected to disturb approximately 44 acres of land along the Pine Avenue corridor and approximately 33 acres of land at the proposed borrow site. The contractor would implement the erosion and sediment control BMPs specified in the project Construction General Permit SWPPP to prevent sediment and suspended solids from entering the storm drains within the project area or minimize the amount of sediment and suspended solids.

Recharge of the basin does not occur within the project site and changes to groundwater occurrences and levels due to project construction would not affect regional groundwater production detrimentally or change existing water quality. Shallow groundwater dewatering is not anticipated because of the nature of the improvements. If dewatering is required, and water is discharged to storm drains or surface waters as part of the proposed project, the contractor would be required to comply with the Santa Ana Water Board's Low-Threat Discharge General Permit.

Operation

The proposed project would not substantially affect drainage patterns or water volume, depth, or flow rate. Under the existing condition, the culverts under Pine Avenue is undersized with respect to the 100-year peak discharge and during storm events of rare frequency, the soffit of

each culvert becomes submerged and the roadway becomes flooded. The existing drainage facilities would be reconstructed and upsized to accommodate the proposed Pine Avenue extension. The proposed project includes replacement of the existing culverts at Chino Creek and Cypress Channel. The existing culverts at Chino Creek would be replaced with a 500-foot long bridge and the existing culverts at Cypress Channel would be replaced with two double 12 -foot wide by 9-foot high RCB culverts across Cypress Channel. The soffit elevation would be 537 feet, which is above the 100-year water surface elevation of 534.5 feet. As such, the proposed project would improve existing drainage crossings within Chino Creek and Cypress Channel. The existing stormwater conveyance capacities along Pine Avenue would be met or exceeded with the proposed Pine Avenue extension. Furthermore, there would be no significant changes in the water profile within floodplains as a result of the project.

The table below summarizes the existing, proposed, and overall increases in impervious surface areas as a result of the project.

Table 2.2-2. Impervious Surface Areas

Roadway	Existing (acres)	Proposed (acres)	Increase (acres)
Pine Avenue	3.55	12.70	9.15
Pomona Rincon Road	0.18	0.47	0.28
El Prado Road	0.34	1.25	0.91
Total Impervious	4.07	14.42	10.35
Source: Water Quality Assessment Report, September 2018.			

Overall, the project would add an additional 10.35 acres of impervious area. However, compared with the 218 square miles of the Chino Creek watershed, this increase represents a ratio of less than 1 to 10,000. No existing treatment BMPs would be removed as part of the project. The City of Chino's MS4 Permit and Local Implementation Plan (LIP) require implementation of post-construction treatment controls for any projects that create 5,000 square feet or more of impervious surfaces and requires the post-construction treatment controls to be detailed in the project specific WQMP. The proposed project would implement structural treatment BMPs. There would be an insignificant change in the water surface elevation in identified floodplain areas due to the increase in impervious areas. As such, the existing drainage conditions would be improved.

Long-term water quality impacts are attributable to changes in stormwater drainage and/or soil disturbance from construction. The proposed project would increase the amount of impervious surfaces in the project area as a result of the road extension and construction of the bridge as well as the undercrossing. Increases in impervious surfaces change the storm hydrograph by increasing flow velocity as well as the quantity of storm runoff because of reduced natural infiltration (groundwater recharge) and uptake from native soils and vegetation. Furthermore, if periodic maintenance of the bridge requires in-water work, the potential would exist for increased turbidity. Future in-water work may require the appropriate permits (Section 404, 401) to be obtained. The increased flow velocity and potential quantity of water would further alter the storm hydrograph and could result in increased turbidity. According to the location hydraulic study, there would be an insignificant change in the water surface elevation in identified

floodplain areas due to increases in impervious areas. During operation, the proposed project would improve existing conditions by ensuring that stormwater runoff would not cause soil erosion, thereby reducing or avoiding permanent impacts on water quality.

Changes in temperature, dissolved oxygen levels, or other parameters of a water body could violate water quality standards, or WDRs and result in algal blooms that would adversely affect sensitive aquatic life. Furthermore, low river flows, stagnant water and algal blooms can affect dissolved oxygen levels. Neither of these conditions is expected to occur as a result of the project because it would not alter water flows and applicable BMPs would be in place to reduce turbidity and/or pollutants from entering the waterway. Chino Creek is currently classified as impaired for chemical oxygen demand. The proposed project would implement structural treatment BMPs, which would include trash catch basins along the project alignment. The catch basins would prevent trash, as well as organic materials from entering the waterways. In addition, significant amounts of organic and inorganic wastes are not anticipated from the increased impervious areas as a result of implementation of the proposed project. Farther downstream, the Santa Ana River is not considered impaired for dissolved oxygen or temperature; therefore, these parameters are not likely to indicate levels that would be detrimental to aquatic life as a result of the project.

The project would adhere to the City of Chino MS4 Permit requirements and ensure that stormwater pollution during operation and maintenance of the project would be minimal. Post construction BMPs would be implemented to ensure compliance with water quality standards and related regulations. Standard facilities that handle stormwater on-site are an array of structural elements that manage, direct, and convey stormwater. Project design measures, such as low impact development (LID) measures, are a means of complying with municipal stormwater permits and would be implemented as necessary.

No-Build Alternative

The No Build Alternative assumes no modifications or extension would be made to the current Pine Avenue roadway. The No Build Alternative does not include improvements to the Pine Avenue configuration. There would continue to be no roadway between Pomona Rincon/ Fairfield Ranch Road and SR-71 and no eastern interchange at SR-71 and Pine Avenue. Pine Avenue would continue to be a two-lane road between Pomona Rincon Road/Fairfield Ranch Road and SR-83/Euclid Avenue. Between El Prado Road and Pomona Rincon Road/Fairfield Ranch Road, Pine Avenue would continue to be subject to road closures due to flooding at Chino Creek during minor storms. The City of Chino and City of Chino Hills Circulation Elements specify that Pine Avenue is a four-lane road between SR-71 and SR-83; therefore, the No Build Alternative would not be consistent with adopted local plans.

2.2.2.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

With the net increase of one acre or more of new impervious area, the proposed project would be required to comply with the provisions of the Construction General Permit issued by the State Water Board. The project would implement construction BMPs and comply with all terms and conditions of the Section 404 Permit and Section 401 Certification. To ensure compliance, the following measures would also be implemented.

WQ-1: The project will comply with the provisions of the NPDES Construction General Permit, Order No. 2009-0009-DWQ, NPDES No.CAS000002, and any subsequent permits in effect at the time of construction. The project will comply with the Construction General Permit by preparing and implementing an SWPPP to address issues related to construction activities, equipment, and materials that have the potential to affect water quality. The SWPPP will identify the sources of pollutants that may affect the quality of stormwater and include BMPs to control the pollutants, such as sediment control measures, catch basin inlet protection, construction materials management, and non-stormwater BMPs. The BMPs would include, but are not limited to, temporary sediment control, temporary soil stabilization, waste management scheduling, materials handling, and other non-stormwater BMPs.

WQ-2: The project will comply with the City of Chino MS4 Permit for the portion of the Santa Ana River watershed within San Bernardino County (Order No. R8-2010-0036, NPDES Permit No. CAS618036) during final design of the project. A project-specific WQMP will be prepared, reviewed, and approved by the City of Chino, and City of Chino Hills for areas within its jurisdiction, that will identify the approved low impact development (LID) preventative measures and post-construction treatment controls that will be implemented to the maximum extent practicable, consistent with the requirements of the MS4 Permit and Local Implementation Plan for the project.

2.2.3 Geology/Soils/Seismic/Topography

2.2.3.1 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 the California Environmental Quality Act (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 Department's Seismic Design Criteria (SDC). The SDC 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. For more information, please see the Department's Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

2.2.3.2 AFFECTED ENVIRONMENT

The primary source used in the preparation of this section is the Water Quality Assessment Report (Caltrans 2018a).

Topography

The majority of the Pine Avenue Extension project area has a relatively flat topography, whereas the Borrow Site area consists of a relatively low-angle hillslope. The Pine Avenue Extension project area gently slopes downward from east to west from Euclid Avenue (555 feet above

mean sea level [amsl]) to Chino Creek (525 feet amsl). It slopes downward from west to east from SR-71 (555 feet amsl) toward Chino Creek, with Chino Creek and adjacent low, wet areas in the lowest elevations. Much of the Chino Creek floodplain and Prado Basin have been developed, compared with conditions depicted on the 1967 U.S. Geologic Survey (USGS) 7.5-minute Prado Dam topographic quadrangle map (USGS 1967). Topographic mapping depicts Chino Creek and an additional unnamed feature (Cypress Channel) as intermittent blue-line features; the outline of Prado Basin is depicted in the updated mapping in 1981. The Borrow Site area consists of a gently sloping hillside that slopes westward from a highpoint of 575 feet amsl. A portion of the Prado Basin floodplain overlaps the southwest corner of the Borrow Site study area (USGS 1967). The Borrow Site study area contains portions of two man-made basins and a small linear stream feature.

Soil Conditions

According to the NRCS Web Soil Survey, the soil series within the project area include various types of silt and clay loams as well as fine sandy loams. Most are considered well-drained or moderately drained soils. Soils in the study area are mostly loam, ranging from sandy to clay.

The NRCS Web Soil Survey also provided soil erosion information, including estimates of runoff potential, which are used to determine hydrologic soil groups. Soils are assigned to one of four groups, according to the rate of water infiltration when the soils are not protected by vegetation, thoroughly wet, and able to receive precipitation from long-duration storms. Soils range from those with a high infiltration rate (low runoff potential) when thoroughly wet (Group A) to those with a very slow infiltration rate when thoroughly wet (Group D). A summary of the soil types within the project area and their corresponding hydrologic soil group is provided in the table below.

Table 2.2-3. Soil Classification

Soil Unit Name	Hydrologic Soil Group
Chino silt loam	B
Chualar clay loam, 0-2% slopes	D
Chualar clay load, 2-9% slopes	D
Chualar clay loam, 9-15% slopes	D
Grangeville fine sandy loam	A
Ramona sandy loam, 2-9% slopes	A
Ramona sandy loam, 9-15% slopes	A
Soper gravelly loam, 15-30% slopes	A
Sorrento clay loam, 0-2% slopes, warm MAAT MLRA 19	D
Sorrento clay loam, 2-5% slopes	D
Source: Water Quality Assessment Report (September 2018) Notes: MAAT = mean annual air temperature MLRA = major land resource area	

Soil sediment and erosion risk potential is determined by the Revised Universal Soil Loss Equation (RUSLE) factors to obtain an estimate of project-related bare-ground soils loss. The RUSLE factors consist of R, K, or LS designations. Soil erosion factor K indicates the

susceptibility of a soil to sheet and rill erosion by water. This is one of six factors used in the RUSLE to predict the average annual rate of soil loss, expressed in tons per acre per year. The estimates are based primarily on the percentage of silt, sand, and organic matter as well as soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water and the greater the susceptibility to particle detachment and transport. Clayey and sandy soils have low K values because the soil particles are resistant to detachment from raindrop impact (clayey soils) or their infiltration capacity is higher (sandy soils). Loamy soils have moderate K values. Silty soils are the most susceptible to water erosion and have high K values. Erosion by surface water flows is most likely where slopes are steep. The project area, which is moderately flat, comprises 2 to 15 percent slopes.

Geologic Hazards

Landslides

According to the City of Chino General Plan Safety Element, natural causes of landslides are earthquakes, streams, and heavy rainfall. Furthermore, activities contributing to instability include extensive irrigation, poor drainage or groundwater withdrawal, removal of stabilizing vegetation, and over-steepening of slopes by undercutting or overloading with artificial fill. These causes of ground failure, which result in landslides and settlement, are augmented during earthquakes and strong ground shaking. Overall, the risk of landslides in the City of Chino is relatively low since the City is generally flat and level with few areas consisting of steep slopes. According to the City of Chino Hills General Plan, Safety Element, Landslide Susceptibility map, the project area is located in an area designated as in area 1, Least Susceptible Area, with landslides and features related to slope instability being rare to non-existent within this area.

Seismicity and Fault Rupture

According to the City of Chino General Plan Safety Element, there is one active fault in the Chino area, the Chino-Central Avenue Fault. The fault has two segments that run roughly south-east to north-west and are found on the western edge of the City of Chino and to the west in the City of Chino Hills. The Chino-Central Avenue Fault is a sub-surface fault that is not expected to rupture, and therefore is not mapped according to the Alquist-Priolo Act and is not listed as a city that would be affected by surface fault ruptures of an Alquist-Priolo Earthquake Fault Zone. However, the City of Chino and Chino Hills, as is all of southern California, are within a seismically active region, and earthquakes have the potential to cause ground shaking of significant magnitude. The Chino Hills General Plan, Safety Element lists the following active and potentially active earthquake faults within or proximate to Chino Hills: Chino Fault, Elsinore Fault Zone, San Jose Fault, Puente Hills Blind Thrust, Sierra Madre-Cucamonga Fault Zone, San Jacinto Fault Zone, and the San Andreas Fault Zone. These active and potentially active faults are capable of generating moderate to strong ground motions during earthquakes that could result in damage to buildings and civil works within the City of Chino Hills. The City of Chino is approximately 12 miles from the Sierra Madre fault, 20 miles from the San Jacinto fault, and 43 miles from the San Andreas fault. (Refer to Figure 5, Earthquake Faults Map.)

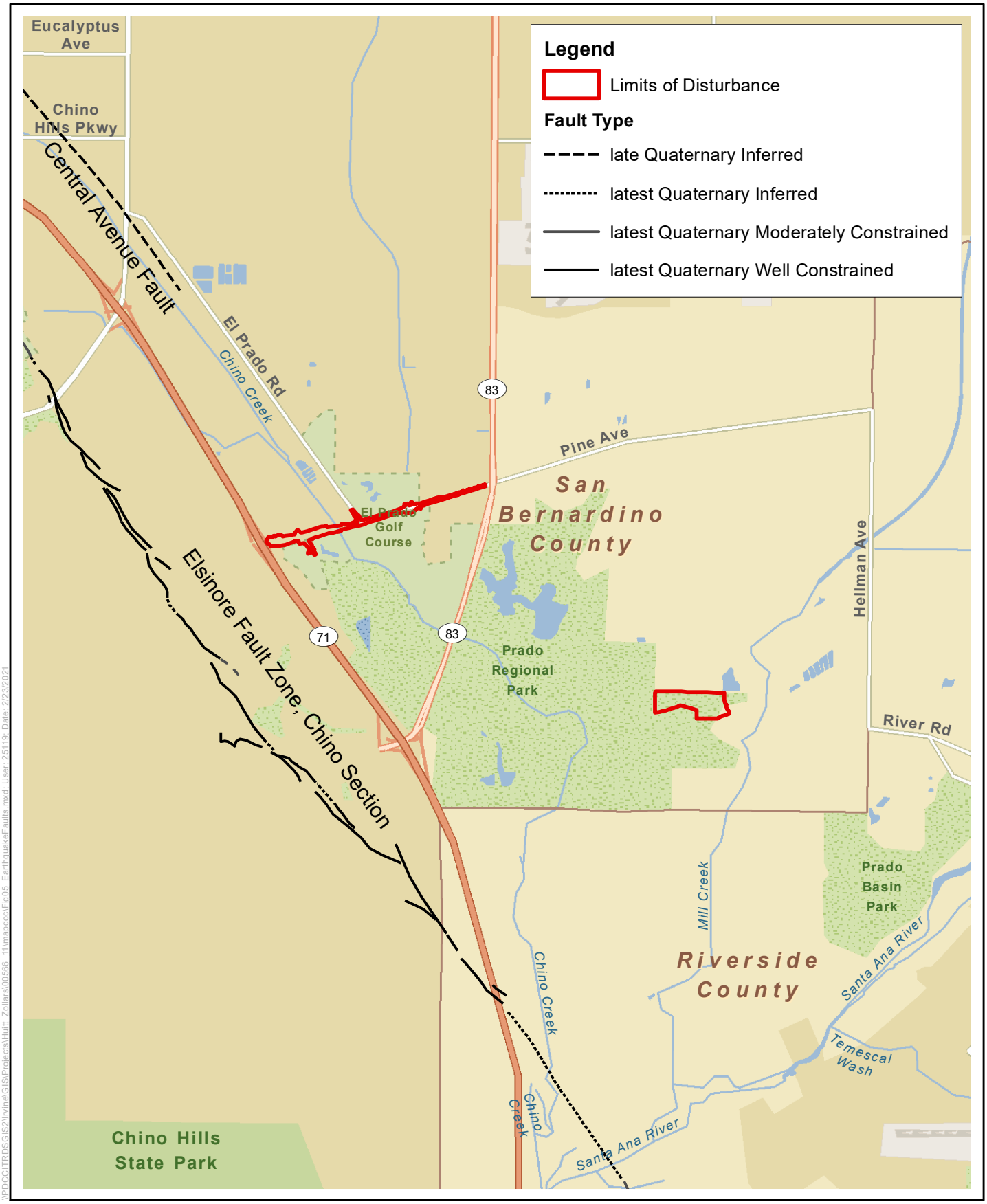
Liquefaction

Liquefaction is the loss of soil strength or stiffness due to a buildup of pore-water pressure during ground shaking. Liquefaction is associated primarily with loose (low-density) to medium dense, saturated, fine- to medium-grained cohesion-less soils, where the groundwater level is

shallow (typically within 50 feet below ground surface), and sustained ground shaking is anticipated. Effects of liquefaction can include sand boils, excessive displacements, bearing capacity failures, and lateral spreading. According to the City of Chino General Plan Safety Element, the City of Chino includes areas of soils susceptible to liquefaction. The liquefaction potential is greatest in the southern portion of the City of Chino, near Prado Dam, where the corresponding depth of groundwater is high. According to the City of Chino Hills General Plan, Safety Element, portions of Chino Hills may be underlain by loose, saturated alluvial materials subject to liquefaction. These areas considered most susceptible to liquefaction include the low-lying areas in the eastern portions of the City of Chino Hills within the Chino Basin and canyon areas in the City of Chino and Puente Hills. Based on the City of Chino Hills Liquefaction Susceptibility Seismically-Induced Landslide Hazard Zones map, the project is designated as Areas of High Liquefaction Potential.

Flooding and Inundation

The City of Chino is located at an elevation of approximately 700 feet above sea level in the Chino Basin, a relatively flat area surrounded by hills and mountains. As mentioned in the City of Chino General Plan Safety Element, the location of the City of Chino in combination with flash flood cycles common in the southern California region, has made the City of Chino area susceptible to flooding. The two types of flood risks in the City of Chino are flooding from local streams and flooding associated with the Prado Dam, located to the southwest. The southwest portion of the City of Chino, including the project area is located within a 100-year floodplain as defined by FEMA. The Prado Dam is designed to provide flood control for portions of Orange, Riverside, and San Bernardino Counties. The City of Chino is located upstream of Prado Dam, which creates a flood risk when the water level rises to the top of the dam. Areas below the flood inundation line will be subject to flooding when water levels rise. The project site is designated as being within the 566-foot Prado Dam Inundation Area. Based on the City of Chino Hills General Plan, Safety Element, runoff from the City of Chino Hills generally drains east and south, toward Chino Creek and Prado Flood Control Basin, and on to the Santa Ana River Basin. Localized flooding in the City of Chino Hills have known to occur is some areas of Chino Hills, notably the lowland areas bounded by Pipeline, Eucalyptus and Merrill Avenues, and the Chino Creek Channel, among other areas. Based on the City of Chino Hills Flooding and Inundation Hazards Map, the area nearest to the project is designed as Zone D, areas of undetermined, but possible flood hazards.



Map Prepared: 2/23/2021
Source: ESRI Streetmap; CGS

N

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Figure 5
Earthquake Faults
Pine Avenue Extension Project

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2.2.3.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

During construction of the Build Alternative, excavated soil would be exposed, increasing the potential for soil erosion. Additionally, during a storm event, unprotected soils including slopes would be subject to erosion. Short-term impacts related to construction activities could occur along the project limits due to grading and construction of fill slopes. Construction activities may also temporarily disturb soil within the project right of way, primarily in work areas, and heavy equipment traffic areas.

The temporary effects due to soil erosion within the proposed improvements are discussed in Section 2.2.1, *Water Quality and Storm Water Runoff*. Erosion potential would be addressed through the implementation of standardized measures as part of the project description. These include erosion control BMPs as part of the SWPPP. With implementation of these standardized measures, no short-term direct or indirect adverse impacts related to soil compaction or erosion would occur during construction of the Build Alternative.

Operation

The Build Alternative is not anticipated to adversely affect geologic or topographic conditions or be affected by fault rupture within the project limits. The primary geologic and geotechnical concerns associated with the design and construction of the Build Alternative are flooding, dam inundation, and seismic shaking.

Flooding and Inundation

The project site is not within a regulatory floodway. The majority of the project alignment is within Special Flood Hazard Areas, which are subject to inundation by the 1% annual-chance flood. Additionally, a small portion of the project alignment is within Federal Emergency Management Agency Flood Zone D (areas where flood hazards are undetermined but possible). The proposed project would elevate Pine Avenue so that it would be above the 50-year flood for Prado Basin and the 100-year flood for Chino Creek and Cypress Channel.

Seismic Shaking

The proposed project is in the seismically active Southern California region. Design and construction of the proposed project in accordance with the City of Chino's current roadway and structure seismic design standards would minimize potential impacts. With implementation of these standard measures, no direct or indirect, adverse, long-term impacts on seismic shaking would occur as a result of the Build Alternative.

No-Build Alternative

The No-Build Alternative would not result in any impacts on geology, soils, seismicity, or topography, as no construction would occur along Pine Avenue.

2.2.3.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

With adherence to the City of Chino's standard design and construction practices, including those mentioned in the City of Chino General Plan Safety Element, impacts related to geology,

soils, seismicity, and topography would be avoided or minimized. No additional measures are required.

2.2.4 Paleontology

2.2.4.1 REGULATORY SETTING

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic records as fossils.

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as part of federally authorized projects.

16 United States Code (USC) 431-433 (the "Antiquities Act") 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 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431-433 above and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

2.2.4.2 AFFECTED ENVIRONMENT

This section is based on the Pine Avenue Extension Paleontological Resource Assessment (SDNHM 2017) prepared for the project.

The project area occurs in the extreme northern portion of the Peninsular Ranges Geomorphic Province of California, a major geomorphic region lying south of the Transverse Ranges Geomorphic Province and west of the Colorado Desert Geomorphic Province, and extending south into Baja California. Within this province, the project area lies along the western side of the Chino Basin, a broad, inland alluvial plain located south of the San Gabriel Mountains, east of the Chino Hills, north of the Santa Ana River, and west of the San Bernardino Mountains. The Chino Basin is a down-dropped structural block that has formed between the Cucamonga Fault Zone to the north, the Chino Fault to the west, the uplifted Perris Structural block to the south, and the San Jacinto Fault Zone to the east. Locally, the project is underlain by Quaternary younger and older alluvial deposits. Furthermore, the Quaternary younger alluvial deposits along the roadway alignment are divided into young alluvial fan, axial channel, and wash deposits and suggest an early to late Holocene age (~10,000 years old to recent). The Quaternary older alluvial fan deposits that underlie the roadway alignment and the proposed borrow site are of probable early to middle Pleistocene age (~2 million to 120,000 years old). The Quaternary younger alluvial and wash deposits are associated with the modern Chino Creek drainage system, which transects portions of the project area. This active drainage system has eroded down

through the Pleistocene older alluvial fan deposits, creating a topography of an elevated older terrace surface and incised active stream channel. The Holocene wash deposits are described as unconsolidated boulder to sandy alluvium; the young alluvial fan deposits as unconsolidated gravel, sand, and silt; and the young axial channel deposits as unconsolidated sand, silt, and clay-bearing alluvium. The geology in the extreme western end of the proposed roadway alignment, just east of the Pine Avenue overcrossing of SR-71 is described as early Pliocene to Miocene (~6-4 million years old), marine siltstones, sandstones, and conglomerates of the Sycamore Canyon Member of the Puente Formation. It is also noted, that is appears that the existing Pine Avenue overcrossing is largely constructed of artificial fill materials. Thus any sedimentary rock in this area is likely buried beneath a thick fill cover and not exposed at the surface.

Records searches and background searches conducted for preparation of the Paleontological Resource Assessment indicated three recorded sites within ½ mile of the project site. These sites were discovered in strata of the Sycamore Canyon Member of the Puente Formation during paleontological monitoring of mass grading operations at the Hunters Hill residential development site located approximately 3,000 feet south of the SR-71 and Pine Avenue interchange. Fossil recovered from these sites include late Miocene to early Pliocene age marine bony fish remains and impressions of vascular land plants. A review of other completed paleontological reports indicate there are additional fossil localities from Pleistocene-age alluvial deposits within a 2-mile radius of the project site. Mass grading during construction at the Chino South Industrial Park Development, located west of Euclid Avenue and both north and south of Pine Avenue, produced fossils of extinct rodents, horse, bison, and mammoth from Pleistocene older alluvial fan deposits. The recovered vertebrate fossils were discovered at sites within a half mile of the Pine Avenue Extension right of way. Mass grading operations at the Majestic Chino Gateway Business Park, located in the northwest corner of the intersection of Euclid Avenue and Kimball Avenue approximately one mile north of the Pine Avenue Extension right of way, produced fossils of extinct horse, camel, bison, deer, mastodon, and mammoth.

2.2.4.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

There are no temporary impacts on paleontological resources. Any impacts on such resources during the construction period are considered permanent impacts and are discussed under the operation impacts heading below.

Operation

Impacts to significant paleontological resources occurs when earthwork operations cut into the geologic units containing those resources. The excavations at the proposed borrow site would cut into Pleistocene older alluvial fan deposits, which have a high paleontological potential, as such potential impacts to paleontological resources may occur. Construction activities related to the placement of fill material along the project alignment to create the proposed embankment would include an initial phase of remedial grading to remove and re-compact expansive soils to prepare the site for fill. Should this work extend deep enough to encounter Pleistocene older alluvial fan deposits, there is a high paleontological potential. Near the terminus of Pine Avenue adjacent to SR-71, grading has the potential to encounter strata of high paleontological potential. Construction activities related to the RCB culverts across Chino Creek and Cypress Channel,

golf cart undercrossing of Pine Avenue, construction of the driveway east of Chino Creek, installation of local storm drains along Pine Avenue, and bridge structure over Chino Creek, all have the likelihood to extend deep enough to encounter Pleistocene older alluvial fan deposits, which have a high paleontological potential.

Based on the widespread surficial occurrence of Pleistocene older alluvial fan deposits in the project area with a high paleontological potential, the numerous project components involving earthwork are likely to encounter these deposits, and the strong potential that this earthwork would result in adverse impacts to paleontological resources, as such, the paleontological measures below will be implemented.

2.2.4.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

PALEO-1 Prior to the start of earthwork, a qualified Project Paleontologist should be retained to oversee and implement the paleontological mitigation program. The Project Paleontologist shall have a graduate degree in paleontology or geo-biology, and proven experience in supervising paleontological assessments and paleontological mitigation programs.

PALEO-2 The Project Paleontologist should attend the pre-construction meeting to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. If necessary, the Project Paleontologist may conduct worker environmental awareness training.

PALEO-3 A paleontological monitor, under the guidance of the Project Paleontologist, should be on-site to monitor mass grading and remedial grading operations that encounter Pleistocene older alluvial fan deposits. Full-time monitoring is recommended for areas where Pleistocene older alluvial fan deposits are mapped at the surface (e.g., eastern half of the Pine Avenue Extension right of way and the entire borrow site). In addition, excavations that extend greater than 5 feet below existing grade in areas where Quaternary younger alluvial and wash deposits are mapped at the surface should be monitored on a part-time basis until it is confirmed that no Pleistocene older alluvial fan deposits are being impacted. The monitor should take appropriate field notes to document stratigraphical and paleontological data. The Project Paleontologist, in consultation with appropriate agencies, has the authority to reduce paleontological monitoring (e.g., part-time monitoring, spot-checking) based on results of the mitigation program to date, and current and anticipated conditions in the field.

PALEO-4 If fossils are discovered, they should be salvaged by the paleontological monitor and/or the Project Paleontologist. In most cases this fossil salvage can be completed in a short period of time (e.g., minutes to hours). However, in rare cases, a large fossil specimen or a bone bed may be discovered that could require an extended salvage period. In these instances, the paleontological monitor should be allowed to temporarily direct, divert, or halt excavations to allow the timely recovery of fossil remains in a timely manner.

PALEO-5 In the even that fossils are discovered during a period when paleontological monitor is not on site (an inadvertent discovery), earthwork within the vicinity of the discovery site shall temporarily halt, and the Project Paleontologist contacted to evaluate the significance of the

discovery. If the inadvertent discovery is determined to be significant, the fossils shall be recovered, as outline in measure PALEO-4.

PALEO-6 Fossil remains collected during monitoring and salvage should be cleaned, repaired, sorted, identified, and cataloged as part of the mitigation program. Fossil preparation may also include screen-washing for microfossils or other laboratory analyses (e.g., radiocarbon dating), if applicable. Fossil preparation and curation activities may be conducted at the laboratory of the contracted Project Paleontologist (if so equipped), at an appropriate outside agency, and/or at the designated fossil repository, and shall follow the standard of the designated repository.

PALEO-7 Prepared fossils, along with copies of all pertinent field notes, photos, and maps, should be housed in a regional scientific repository with permanent paleontological collections (e.g., San Bernardino County Museum, San Diego Natural History Museum, Western Science Center). Curation of the fossils should be accompanied by financial support for initial specimen storage (e.g., purchase of storage cabinets).

PALEO-8 A final summary report should be completed by the Project Paleontologist that outlines the results of the mitigation program. This report should include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils. This report shall be submitted to appropriate agencies (e.g., Caltrans, City of Chino), as well as to the designated repository (if fossils are recovered).

2.2.5 Hazardous Waste/Materials

2.2.5.1 REGULATORY SETTING

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

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 clean up abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also 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 clean up contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

2.2.5.2 AFFECTED ENVIRONMENT

Environmental Records Review

The primary sources used in the preparation of this section is the Phase I Environmental Site Assessment Report (Caltrans 2018c) and the Phase II Environmental Site Assessment Report (Caltrans 2019c).

The Phase I Environmental Site Assessment Report and Phase II Environmental Site Assessment Report involved property and vicinity reconnaissance, review of regulatory agency records, historical reviews, review of historical aerial photographs, database records searches, soils sampling, and methane survey and screening. Limitations include property owner interviews, which were not conducted, and access to the western portion of Pine Avenue beyond El Prado Road due to access restrictions. Based on records search conducted for the Phase I Environmental Site Assessment Report, the following properties were identified:

- Pine Street/El Prado Road (EDR Site ID No.2) – Identified on the Clandestine Drug Lab (CDL) database. Abandoned drug lab waste found at property in September 1996. No further information was recorded. Based on the single-incident and presumed clean-up operations at that time, this listing is not considered an environmental concern.

- Fairview Farms (6829 Pine Avenue, EDR Site ID No. A1) – Identified on the National Pollutant Discharge Elimination System (NPDES), San Bernardino County Permit and Waste Discharge System (WDS) databases. This site reportedly treats and disposes of wastes associated with confined and concentrated animal feeding. The site is currently inactive as of 1992. No violations were noted.

- Warren Mountain & Son Dairy (6800 Pine Avenue, EDR Site ID No. A3) – Identified on the CORTESE, ENF, HIST CORTESE and San Bernardino County databases. This site

reportedly treats and disposes of wastes associated with confined and concentrated animal feeding. The site is currently inactive as of 1997. No violations were noted.

- Orange County Flood Control (6829 Pine Avenue, EDR Site ID No. A4) – Identified as a small quantity generator of hazardous waste and identified on the Aboveground Storage Tank (AST), FINDS, HAZNET, and San Bernardino County databases. This site reportedly manifested empty containers of less than 30 gallons, other inorganic wastes and waste oil and mixed oil. No violations were reported. Based on the lack of violations and nature of use of the facility, this site is not expected to represent an environmental concern.

- El Prado Golf Course (6555 Pine Avenue, EDR Site ID No. B5, B6, B7) – Identified as a small quantity generator of hazardous waste and on the AST, FINDS, HAZNET, and San Bernardino County databases. This site reportedly manifested other inorganic wastes and waste oil and mixed oil. No violations were reported. Based on the lack of violations and nature of use of the facility, this site is not expected to represent an environmental concern, except for runoff.

The Phase I Environmental Site Assessment revealed no evidence of Registered Environmental Conditions (RECs) in connection with the project area, except for the following:

- Based on the historical use of the project site for agricultural use and close vicinity of the El Prado Golf Course, soils adjacent to the site may be impacted by agricultural chemicals including pesticides, herbicides, and metals.

- The presence of Pine Avenue, El Prado Road, and Pomona Rincon Road within the project limits for several decades indicates the exposed soil in the immediate vicinity of these roadways is a concern for aerially deposited lead (ADL).

- Historically, adjoining properties in the project area were used for dairy farm operations. Therefore, there is a potential for vapor migration by methane gas to the property.

The Phase II Environmental Site Assessment evaluated the following: (1) potential of pesticides, herbicides, and metals in surface and shallow subsurface soil due to historic agricultural uses, adjacent golf course use, and potential ADL alongside existing roadways, (2) evaluate whether methane gas, possibly generated from the biodegradation of organic material related to historic adjacent dairy operations has migrated to beneath the project site, and (3) identify if potential target analytes are present at concentrations greater than the threshold criteria.

The results of the Phase II Environmental Site Assessment are as follows:

- Eight metals (barium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc) were reported in the soil samples collected. However, the maximum concentration of all reported metals were less than the residential screening levels, and less than their hazardous waste thresholds.

- Two organochlorine pesticides (OCPs) were detected in four of the composite samples analyzed: dichlorodiphenyldichloroethylene (DDE) and dichlorodiphenyltrichloroethane (DDT). The maximum concentrations of all reported OCPs were less than the screening level for residential land uses.

- No organophosphorus pesticides (OPPs) or chlorinated herbicides (CHs) were reported in any of the 5 composite samples analyzed.

- Methane was not detected in any of the three probe sample locations.

2.2.5.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Based on the Phase I Environmental Site Assessment, no evidence of RECs were found in connection with the property, however, a Phase II Environmental Site Assessment was recommended to be completed to evaluate for the presence of agricultural chemicals, metals and aerially deposited lead in the surficial and subsurface soils. A Methane Survey was also recommended to evaluate if methane gas is present in the soil vapor at the project site from historic dairy farm operations.

The Phase II Environmental Site Assessment prepared for the project concluded that there appears to be limited impacts to the site from historical uses. No OPPs or CHs were reported in any of the five composite samples analyzed. Eight metals were reported in the soil samples, however, the maximum concentration of all reported metals were less than the residential screening levels, and less than their hazardous waste thresholds. DDE and DDT were detected in four of the composite samples analyzed; however, the maximum concentration of all reported OCPs were less than the screening level for residential uses. Methane was also not detected in any of the three probe locations. Based on the findings of the assessments performed for the project, concentrations of metals and pesticides reported in the shallow soils across the project site are less than the screening levels for residential land uses and the methane survey showed no evidence of methane gas at the project site.

Aerially deposited lead (ADL) from the historical use of leaded gasoline exists along roadways throughout California. If encountered, soil with elevated concentrations of lead as a result of ADL on the state highway system right of way within the limits of the project will be managed 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.

Appropriate health and safety measures will be taken to minimize the exposure of lead during construction of the Build Alternative. The project will include a Lead Compliance Plan and appropriate measures for removal of yellow or white traffic stripes, treated wood waste, paint, and thermoplastics.

Following construction of the proposed project, operations are not expected to result in the creation of any new health hazards or expose people to potential new health hazards. As such, the Build Alternative would not result in adverse effects.

Operation

Operations of the project are not expected to result in the creation of any new health hazards or expose people to potential new health hazards related to hazardous materials/waste. The project would not result in the storage of toxic materials or chemicals. Some vehicles that use the roadway may contain materials deemed hazardous, however, the hazards associated with vehicular transport of hazardous materials and wastes are regulated under existing programs and would not be affected by the project.

No-Build Alternative

Under the No-Build Alternative, no improvements would be implemented and no effects involving hazardous materials would occur.

2.2.5.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Appropriate standard measures to avoid or minimize effects related to hazardous wastes are included as part of the project. Refer to Section 1.3.2.

2.2.6 Air Quality

2.2.6.1 REGULATORY SETTING

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) 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). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM)—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM10) and particles of 2.5 micrometers and smaller (PM2.5)—and sulfur dioxide (SO_2). In addition, national and state standards exist for lead (PB), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H2S), and vinyl chloride. 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. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

Conformity

The conformity requirement is based on FCAA Section 176(c), which prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to the State Implementation Plan (SIP) 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. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. 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 for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM10 and PM2.5), and in some areas (although not in California), sulfur dioxide (SO_2). California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) 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 SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) 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. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP; the project has a design concept and scope[3] that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and EPA-approved emissions models; and in PM areas, the project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts.

[3] "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.

2.2.6.2 AFFECTED ENVIRONMENT

This section is based on the Air Quality Report (Caltrans 2019a) prepared for the project.

California is divided into 15 air basins with similar topography and meteorology to better manage air quality throughout the state. Each air basin has a local air district that is responsible for identifying and implementing air quality strategies to comply with ambient air quality standards. The project site is located in San Bernardino County within an area of the South Coast Air Basin (Basin), which includes all of the County of Orange and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The air quality regulations in the Basin are administered by the South Coast Air Quality Management District (SCAQMD).

Climate and Meteorological Conditions
The 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 Pomona Fairplex climatological station, maintained by the Western Regional Climate Center, is near the project site and representative of meteorological conditions near the project site. The climate of the project area is generally Mediterranean with cool winters and warm, dry summers. Temperature inversions are common, affecting localized pollutant concentrations in the winter and enhancing ozone formation in the summer. Mountains tend to trap pollutants in the region by limiting air flow. Annual average rainfall is 17 inches at the Pomona Fairplex climatological station, falling mainly during the winter months. The topography and climate of southern California combine to make the Basin an area of high air pollutant potential. A warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cooler surface layer, which traps pollutants near the ground in an "inversion" layer. In addition, abundant sunlight of the area triggers the photochemical reactions that produce ozone and the majority of the particulate matter (PM).

Attainment Status
Regional air quality is monitored by SCAQMD and ARB. These agencies operate a network of air quality monitoring stations in the Air Basin. The U.S. EPA determines regional air quality status based on data collected from these permanent monitoring stations. Existing air quality conditions in the project area can be characterized in terms of ambient air quality standards that the State of California and the federal government have established for several different pollutants. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health. The following tables provide the state and federal ambient air quality standards.

Table 2.2-4, Air Pollutants 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 VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (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 & 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 &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.
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.

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Visibility Reducing Particles (VRP)	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, 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

Table 2.2-5, State and Federal Criteria Air Pollutant Standards and Status

Pollutant	Averaging Time	State Standard [i]	Federal Standard [ii]	State Project Attainment Status	Federal Project Area Attainment Status
O_3 [iii]	1 hour	0.09 ppm [iv]	N/A	Nonattainment (Extreme)	N/A
O_3	8 hours	0.070 ppm	0.070 ppm (4^{th} highest in 3 years)	Nonattainment	Nonattainment (Extreme)
CO [v]	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	N/A	N/A
PM_{10} [vi]	24 hours	50 µg/m^3 [vii]	150 µg/m^3 (expected number of days above standard < or equal to 1)	Nonattainment	Attainment (Maintenance)
PM_{10}	Annual	20 µg/m^3	N/A	Nonattainment	N/A
$PM_{2.5}$ [viii]	24 hours	N/A	35 µg/m^3 [ix]	N/A	Nonattainment (Serious)
$PM_{2.5}$	Annual	12 µg/m^3	12.0 µg/m^3	Nonattainment	Nonattainment (Serious)
NO_2	1 hour	0.18 ppm	0.100 ppm [x]	Attainment	Attainment (unclassifiable)
NO_2	Annual	0.030 ppm	0.053 ppm	Attainment	Attainment (Maintenance)
SO_2 [xi]	1 hour	0.25 ppm	0.075 ppm (99^{th} percentile over 3 years)	N/A	Attainment (unclassifiable)
SO_2	3 hours	N/A	0.5 ppm [xi]	N/A	N/A
SO_2	24 hours	0.04 ppm	0.14 ppm (for certain areas)	N/A	Attainment (unclassifiable)
SO_2	Annual	N/A	0.030 ppm (for certain areas)	N/A	Attainment (unclassifiable)
Pb [xii]	Monthly	1.5 µg/m^3	N/A	N/A	N/A
Pb	Calendar Quarter	N/A	1.5 µg/m^3 (for certain areas)	N/A	N/A

Pollutant	Averaging Time	State Standard [i]	Federal Standard [ii]	State Project Attainment Status	Federal Project Area Attainment Status
Pb	Rolling 3-month average	N/A	0.15 µg/m^3 [xiii]	N/A	Nonattainment (Partial)
Sulfates	24 hours	25 µg/m^3	N/A	Attainment	N/A
H_2S	1 hour	0.03 ppm	N/A	Attainment	N/A
Visibility Reducing Particles (VRP) [xiv]	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70 %	N/A	Unclassified	N/A
Vinyl Chloride **Error! Bookmark not defined.**	24 hours	0.01 ppm	N/A	Attainment	N/A

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.

[i] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, 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.

[ii] Federal standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, 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 PM2.5, 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 U.S. EPA for further clarification and current national policies.

[iii] On October 1, 2015, the national 8-hour ozone 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 ozone primary and secondary standards on and after August 4th, 2019 (see Transportation Conformity Guidance for 2015 Ozone NAAQS Nonattainment Areas).

[iv] ppm = parts per million

[v] Transportation conformity requirements for CO no longer apply after June 1, 2018 for the following California Carbon Monoxide Maintenance Areas (see U.S. EPA CO Maintenance Letter).

[vi] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m^3 to 12 µg/m^3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[vii] µg/m^3 = micrograms per cubic meter

[viii] The 65 µg/m^3 PM2.5 (24-hr) NAAQS was not revoked when the 35 µg/m^3 NAAQS was promulgated in 2006. The 15 µg/m^3 annual PM2.5 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 PM2.5 NAAQS, conformity requirements still apply until the NAAQS are fully revoked.

[ix] Final 1-hour NO2 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 re-designation to nonattainment in some areas after 2016.

[x] 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 75ppb. The 1971 SO2 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.

[xi] 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.

[xii] The ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM_{10} and, in larger proportion, $PM_{2.5}$. Both the ARB and U.S. EPA have identified lead and various organic compounds that are precursors to ozone and $PM_{2.5}$ as toxic air contaminants. There are no exposure

Pollutant	Averaging Time	State Standard [i]	Federal Standard [ii]	State Project Attainment Status	Federal Project Area Attainment Status
criteria for adverse health effect due to toxic air contaminants, 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. [xiii] Lead NAAQS are not considered in Transportation Conformity analysis. [xiv] In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.					

The Ontario monitoring station located at 2330 South Castle Harbour is the nearest air quality monitoring station to the project site. As the Ontario monitoring station does not collect data for all air quality pollutants, data from other sites were utilized including the Pomona (924 North Garey Avenue) and Upland (1350 San Bernardino Road) monitoring stations. The San Bernardino County portion of the Basin is in nonattainment for the federal 8-hour ozone (O_3) standard and $PM_{2.5}$ standard but in attainment/maintenance or unclassified for all other criteria pollutants and their precursors. With respect to the state standards, the San Bernardino County portion of the Basin is in nonattainment for the 1-hour and 8-hour O_3 standards and the PM_{10} and $PM_{2.5}$ standards but in attainment for all other standards. The table below summarizes the state and federal attainment status for the Basin.

Table 2.2-6. State and Federal Attainment Status

Pollutant	State Attainment Status	Federal Attainment Status
O_3 (1-hour standard)	Nonattainment	N/A (federally rescinded^)
O_3 (8-hour standard)	Nonattainment	Nonattainment, Extreme
Respirable PM_{10}	Nonattainment	Attainment
Fine $PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment/Maintenance
Nitrogen Dioxide (NO_2)	Attainment	Unclassified/Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead (Pb)	Attainment	Attainment
Visibility-Reducing Particles	Unclassified	N/A
Sulfates	Attainment	N/A
Hydrogen Sulfide	Unclassified	N/A
Vinyl Chloride	N/A	N/A
Source: EPA, 2021 and CARB, 2021. Notes: ^ = The Basin was designated nonattainment-extreme for the 1-hour ozone NAAQS before the 8-hour standard replaced it, it has not yet attained the 1-hour standard. The 2012 South Coast Air Basin SIP (approved by the U.S. EPA 2014) includes an attainment demonstration for 1-hour ozone and ozone emission budgets consistent with both that and scheduled attainment of the 8-hour ozone NAAQS. Regional conformity analysis is based on those budgets for all versions of the ozone NAAQS.		

The following table lists air quality trends in data collected at the Ontario and Upland monitoring stations for the past 3 years. These stations are representative of the project site because of the similar climate, topography, and urban setting. During the 2018 to 2020 monitoring period, exceedances were recorded at the monitoring stations for the state and federal 8-hour O_3 standards and federal PM10 and PM2.5 standards.

Table 2.2-7. Air Quality Measured at Ontario and Upland Monitoring Stations.

Pollutant	Standard	2018	2019	2020
Ozone – Upland Monitoring Station				
Max 1-hour concentration (ppm)		0.133	0.131	0.158
Number of days exceeded: State	0.09 ppm	25	31	82
Max 8-hour concentration (ppm)		0.112	0.107	0.124
Number of days exceeded: State: Federal:	 0.070 ppm 0.070 ppm	 54 52	 54 52	 118 116
Carbon Monoxide – Ontario Monitoring Station				
Max 1-hour concentration (ppm)		1.6	1.5	1.5
Number of days exceeded: State: Federal:	 20 ppm 35 ppm	 0 0	 0 0	 0 0
Max 8-hour concentration (ppm)		1.2	1.1	1.1
Number of days exceeded: State: Federal:	 9 ppm 9 ppm	 0 0	 0 0	 0 0
PM_{10} – Upland Monitoring Station				
Max 24-hour concentration (µg/m^3)		156.6	125.9	174.8
Number of days exceeded: State: Federal:	 50 µg/m^3 150 µg/m^3	 N/A N/A	 N/A N/A	 N/A 0
Maximum annual concentration (µg/m^3)		33.4	29	33.5
Exceeded: State:	 20 µg/m^3	 N/A	 N/A	 N/A
$PM_{2.5}$ – Ontario Monitoring Station				
Maximum 24-hour concentration (µg/m^3)		60.4	57.7	59.2
Number of days exceeded: Federal	35 µg/m^3	7	6	14
Maximum annual concentration		14.5	12.8	15.1
Exceeded: State: Federal:	 12 µg/m^3 12 µg/m^3	 N/A N/A	 N/A N/A	 N/A N/A
Nitrogen Dioxide – Ontario Monitoring Station				
Maximum 1-hour concentration (ppm)		0. 079	0.088	0.102
Number of days exceeded: State: Federal:	 0.18 ppm 100 ppb	 0 0	 0 0	 0 0
Maximum annual concentration (ppm)		0.030	0.029	0.030
Exceeded: State: Federal:	 0.030 ppm 53 ppb	 No No	 No No	 No No

Source: EPA, 2022 and CARB, 2022.
Notes:
N/A= Not applicable due to insufficient data.

The following table summarizes the status of U.S. EPA-approved SIPs that are relevant to the proposed project.

Table 2.2-8 Status of SIPs of Project Area.

Name/Description	Status
Ozone	South Coast 1-hour NAAQS approved South Coast 1997 8-hour NAAQS approved South Coast 2008 8-hour NAAQS budgets adequate
PM_{10}	N/A
$PM_{2.5}$	South Coast 1997 NAAQS approved South Coast 2006 annual NAAQS budgets adequate
CO	N/A
NO_2	N/A
SO_2	N/A
Lead	N/A
Source: Air Quality Report (May 2019).	

The most prominent sources of mobile-source air toxics (MSAT) pollutants in the project area are vehicles that use local and regional roadways in the area, including SR-71, which is adjacent to the eastern portion of the project site. Of the vehicles operating in the project area, those that are diesel-powered are the largest sources of MSAT emissions.

2.2.6.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Temporary Construction Impacts

Site preparation and construction of the Pine Avenue extension project would involve clearing, cut and fill activities, grading, and paving roadway surfaces. During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated. These would include CO, nitrogen oxides (NOx), volatile organic compounds (VOCs), directly emitted PM10 and PM2.5, and toxic air contaminants such as diesel exhaust particulate matter. Construction activities may temporarily result in traffic delays and congestion that could result in temporary increases in emissions from traffic and vehicles idling during the delays. However, these emissions would be temporary and limited to the immediate area surrounding the construction site.

Constructions emissions were estimated for the project using detailed equipment inventories and project construction scheduling information provided by the engineering team, project designer, combined with emissions factors from the EMFAC 2017 and OFFROAD computer software models. The construction-related emissions for the project area are presented in the table below. The emissions represent the peak daily construction emissions that would be generated by the project.

Table 2.2-9. Construction Emissions Estimates

	VOC (lbs/day)	CO (lbs/day)	Nox (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
Grubbing/ Land Clearing	1	7	11	30	7
Grading/ Excavation	5	44	81	33	9
Drainage/ Utilities/ Sub-Grade	4	34	38	32	8
Paving	2	20	28	1	1
Maximum Daily	5	44	81	33	9
Source: SMAQMD, 2018.					

Implementation of measures, some of which may also be required for other purposes, such as stormwater pollution control, would reduce air quality impacts resulting from construction activities. Also, although these measures are anticipated to reduce construction-related emissions, these reductions cannot be quantified at this time.

- The construction contractor must comply with the Caltrans' Standard Specifications in Section 14-9 (2015). 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.

- Water or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions, consistent with SCAQMD Rule 403.

- Soil binder will be spread on any unpaved roads used for construction purposes and on all project construction parking areas.

- Trucks will be washed as they leave the right of way as necessary to control fugitive dust emissions.

- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low-sulfur fuel, as required by the California Code of Regulations, Title 17, Section 93114.

- A dust control plan will be developed, documenting sprinkling, temporary paving, speed limits, and timely re-vegetation of disturbed slopes as needed to minimize construction impacts on existing communities.

- Equipment and material storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.

- Environmentally sensitive areas will be established near sensitive air receptors. Within these areas, construction activities involving extended idling of diesel equipment or vehicles will be prohibited to the extent feasible.

- Track-out reduction measures, such as gavel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic will be used.

- All transported loads of soil and wet material 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 emissions of dust during transportation.

- Dust and mud deposited on paved public roads as a result of construction activity and traffic will be promptly and regularly removed to reduce PM emissions.

- 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.

- Mulch will be installed or vegetated as soon as practical after grading to reduce windblown PM in the area.

Toxic Air Contaminant Emissions
During the construction period, which is scheduled to last approximately 18 to 32 months, short-term generation of pollutants from construction vehicles and equipment would occur. However, the construction period is much shorter than the assumed 30-year exposure period used to estimate lifetime cancer risks, as recommended by the California Office of Environmental Health Hazard Assessment. It is also important to note that there is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime, as cancer potency factors are based on animal lifetime studies where there is long-term exposure. Furthermore, given the linear nature of the project, equipment would not be operated at a particular location along the alignment for an extended period of time. The diesel particulate matter generated from construction equipment would be sporadic, transitory, and short-term in nature. Therefore, the project would not expose receptors to acute and/or chronically hazardous toxic air contaminant pollutants.

Odors
The proposed project would not be a significant source of odors. The project involves the extension of Pine Avenue from SR-71 eastward to Euclid Avenue and any odors generated by the project would be similar to odors generated from the existing roadways in the adjacent area. Therefore, the project is not anticipated to generate significant odors. Construction of the project would not create substantial levels of odors in the surrounding area. Exhaust emissions from construction equipment and vehicles and fugitive emissions from construction activities would be tightly controlled. The minor amounts of odors generated by onsite construction activities would be substantially dispersed and diluted to negligible levels in adjacent offsite areas.

Asbestos and Aerially Deposited Lead
According to maps prepared by the California Department of Conservation, Division of Mines and Geology, the project site does not have any reported historic asbestos mines, historic asbestos prospects, asbestos-bearing talc deposits, fibrous amphiboles, or ultramafic rock outcrops. The project also does not involve the demolition or modification of structures or buildings that would release asbestos during construction or operation.

Lead is normally not an air quality issue for transportation-type projects, unless the project involves soil with high levels of aerially deposited lead (ADL) that would be disturbed, painting, or modification of structures with lead-based coatings. The project is not adjacent to any major industrial lead emissions sources and does not involve demolition of any structures. Therefore, the potential for aerially deposited lead on the project site is low. It is unknown if lead-based paint was used previously for striping along Pine Avenue. If encountered, any disturbance of lead-based paint must meet U.S. EPA and air district rules, pursuant to Caltrans Standard Specifications 14-9.02.

Permanent Operational Impacts

Operational emissions take into account long-term changes in emissions due to the project, excluding the construction phase. The operational emissions analysis compares forecast emissions for existing/baseline, No Build Alternative, and the Build Alternative under the existing, opening year (2023), and 20-year horizon year (2043) conditions.

Operational emissions of criteria pollutants and their precursors would occur as a result of changes in roadway operations with project implementation. In addition, operational emissions between different time periods would be affected by changes in circulation patterns, population growth, and reductions in per-vehicle emissions as older, less efficient vehicles are retired and replaced by cleaner vehicles. Estimates of emissions are based on data developed with use of an approved traffic microsimulation model, the pertinent output of which is vehicle miles traveled (VMT) apportioned into 5 mph speed bins. The VMT data were then used as the input into computer software models (CT-EMFAC 2017), which provides an estimate of emissions. The table below summarizes the results.

Table 2.2-10 Summary of Emissions Analysis

	VO (lbs/day)	CO (lbs/day)	NOx (lbs/day	PM10* (lbs/day)	PM2.5* (lbs/day)
Baseline (existing conditions)	146,338	1,592,491	599,666	377,559	78,662
2023 Opening Year No Build Alternative	82,401	861,314	285,718	427,439	80,610
2023 Opening Year Build Alternative	82,246	860,360	285,612	427,656	80,654
2023 Opening Year Net Emissions (Build minus No-Build)	(156)	(955)	(106)	216	45
2043 Horizon Year No Build Alternative	46,937	588,639	256,038	514,868	95,649
2043 Horizon Year Build Alternative	46,864	587,614	255,673	514,673	95,619
2043 Horizon Year Net Emissions (Build minus No-Build)	(73)	(1,024)	(365)	(195)	(30)

Source: Air Quality Report (May 2019).

Notes:

* = Includes re-entrained road dust.

Emissions of Sox would be negligible, based on the use of ultra-low sulfur diesel and gasoline.

The emissions were estimated using project specific VMT data apportioned into 5 mph speed bins as input into CT-EMFAC 2017 computer software modeling.

CO Analysis

The CO Protocol was developed for project-level conformity (hot-spot) analysis and approved for use by the U.S. EPA in 1997. It provides qualitative and quantitative screening procedures, as

well as quantitative modeling analysis methods, to assess 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, or worsen an existing violation, of the CO standards. Below is a step-by-step explanation of the CO Protocol flowchart. Each level cited is followed by a response, which in turn determines the next applicable level of the flowchart for the project.

3.1.1: Is the project exempt from all emissions analyses?

Response: No. The project is not exempt because it does not fit within any of the exemption categories identified in 40 C.F.R. § 93.126. The project would add travel lanes and therefore not meet the exemption (proceed to 3.1.2).

3.1.2: Is the project exempt from regional emissions analyses?

Response: No. The proposed project does not align with any of the project types exempted from regional emissions analyses under 40 C.F.R. § 93.127 (proceed to 3.1.3).

3.1.3: Is the project locally defined as regionally significant?

Response: Yes, the proposed project is considered a regionally significant transportation project, according to 40 C.F.R. § 93.101 because it is included in modeling of the area's transportation network (proceed to 3.1.4).

3.1.4: Is the project in a federal attainment area?

Response: No, the proposed project is in the South Coast Air Basin, which is a federal extreme nonattainment area for O_3 and a serious nonattainment area for PM2.5 (see Table 2.2-4). If a project area is not classified as an attainment area for all transportation-related criteria pollutants, the answer to Question 3.1.4 must be "no" (proceed to 3.1.5).

3.1.5: Is there a currently conforming RTP and TIP?

Response: Yes, the 2020-2045 RTP/Sustainable Communities Strategy (SCS) and 2021 FTIP (proceed to 3.1.6).

3.1.6: Is the project included in the regional emissions analysis supporting the currently conforming RTP and TIP?

Response: Yes, the project is identified in the 2020–2045 RTP/SCS and 2021 FTIP under Project ID 200207 (see Appendix A of Air Quality Report). Thus, it has been included in the regional emissions analysis (proceed to 3.1.7).

3.1.7: Has the project design concept and/or scope changed significantly from that in the regional analysis?

Response: No, the project design concept has not changed significantly from that in the regional analysis (proceed to 3.1.9).

3.1.9: The conclusion from this series of questions and answers is that the project needs to be examined for its local air impacts (proceed to Section 4, Figure 3, of the CO Protocol).

On the basis of the answers to the first flowchart, a second flowchart, Figure 3 of the CO Protocol (see Appendix D), is used to determine the level of local CO effect analysis required for the project.

The questions that are applicable to the project are in the second flowchart (provided in Appendix D), and the answers to those questions are as follows:

Level 1: Is the project in a CO nonattainment area?

Response: No, the Basin is an attainment/maintenance area for the federal CO standards (Table 2.2-4).

Level 1: Was the area redesignated as an attainment area after the 1990 Clean Air Act?

Response: Yes, the Basin was redesignated as an attainment area after the 1990 Clean Air Act

Level 1: Has "continued attainment" been verified with the local air district, if appropriate?

Response: Yes, continued attainment has been verified since the Basin was redesignated to maintenance in June 2007 (proceed to Level 7).

Level 7: Does project worsen air quality?

Response: Yes. According to Section 4.7.1 of the CO Protocol, the following criteria provide a basis for determining if a project has the potential to worsen localized air quality:

- *The project significantly increases the percentage of vehicles operating in the cold-start mode. Increasing the number of vehicles in cold-start mode by as little as 2 percent should be considered potentially significant.*

  The proposed project would not involve direct development of land, nor would it make undeveloped land more accessible such that an increase in the percentage of vehicles operating in cold-start mode would occur. The proposed project would widen and extend Pine Avenue to the SR-71 interchange. The proposed project 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 implementation of the proposed project.

- *The project significantly increases traffic volumes. Increases in traffic volumes in excess of 5 percent should be considered potentially significant. Increasing the traffic volume by less than 5 percent may still be potentially significant if there is also a reduction in average speeds.*

  As discussed in the April 2017 traffic operations analysis prepared for the proposed project and summarized in the table below, AADT on Pine Avenue between Fern Avenue and Euclid Avenue would increase to 29,200 under the 2023 opening-year Build Alternative compared with 8,000 under the 2023 opening-year No-Build Alternative. In the 2043 horizon year, Pine Avenue between El Prado Road and Fern Avenue would experience the greatest increase in AADT with implementation of the project. Specifically, AADT would increase to 21,000 under the Build Alternative compared with 9,900 under the No-Build Alternative. Although implementation of the Build Alternative would increase AADT on Pine Avenue, a reduction in average speeds is not expected because of the increased roadway capacity that would occur under the Build Alternative.

Table 2.2-11 Roadway Segment Daily Traffic Volumes

Roadway	Segment	No-Build Alternative AADT	Build Alternative AADT	% Change in AADT
Opening Year (2023)				
Soquel Canyon Parkway	West of SR-71	38,300	36,200	-5%
Central Avenue	East of SR-71	46,200	40,600	-12%
Pine Avenue	West of Butterfield Ranch Road	1,800	3,400	89%
Butterfield Ranch Road	North of Pine Avenue	12,400	8,700	-30%
Pine Avenue	SR-71 and Butterfield Ranch Road	11,400	15,300	34%
Butterfield Ranch Road	South of Pine Avenue	15,300	14,500	-5%
Pine Avenue	SR-71 and El Prado Road	—	25,700	-
El Prado Road	North of Pine Avenue	7,500	4,000	-47%
Fern Avenue	North of Pine Avenue	1,600	700	-56%
Pine Avenue	El Prado Road and Fern Avenue	9,000	28,900	221%
Pine Avenue	Fern Avenue and Euclid Avenue	8,000	29,200	265%
Pine Avenue	East of Euclid Avenue	32,600	32,700	0%
Euclid Avenue	North of Pine Avenue	30,600	31,100	2%
Euclid Avenue	South of Pine Avenue	49,700	30,200	-39%

Roadway	Segment	No-Build Alternative AADT	Build Alternative AADT	% Change in AADT
Butterfield Ranch Road	Pine Avenue and SR-71	8,800	11,800	34%
Euclid Avenue	SR-71 and Pine Avenue	51,600	32,100	-38%
Horizon Year (2043)				
Soquel Canyon Parkway	West of SR-71	31,000	31,000	0%
Central Avenue	East of SR-71	48,000	36,900	-23%
Pine Avenue	West of Butterfield Ranch Road	3,500	3,500	0%
Butterfield Ranch Road	North of Pine Avenue	17,200	17,200	0%
Pine Avenue	SR-71 and Butterfield Ranch Road	12,600	12,500	-1%
Butterfield Ranch Road	South of Pine Avenue	15,900	15,900	0%
Pine Avenue	SR-71 and El Prado Road	—	23,900	-
El Prado Road	North of Pine Avenue	8,200	2,500	-70%
Fern Avenue	North of Pine Avenue	1,800	800	-56%
Pine Avenue	El Prado Road and Fern Avenue	9,900	21,000	112%
Pine Avenue	Fern Avenue and Euclid Avenue	8,800	18,200	107%
Pine Avenue	East of Euclid Avenue	42,600	42,600	0%
Euclid Avenue	North of Pine Avenue	38,500	38,500	0%
Euclid Avenue	South of Pine Avenue	72,600	61,700	-15%
Butterfield Ranch Road	Pine Avenue and SR-71	26,100	26,100	0%
Euclid Avenue	SR-71 and Pine Avenue	69,900	59,000	-16%
Source: Air Quality Report (May 2019)				

- The project worsens traffic flow. For uninterrupted roadway segments, a reduction in average speeds (within a range of 3 to 50 mph) should be regarded as a worsening traffic flow. For intersection segments, a reduction in average speed or an increase in average delay should be considered a worsening of traffic flow.

  Although the Build Alternative would increase the roadway capacity of Pine Avenue within the project limits, delay at certain intersections within the study area is expected to increase. As shown in the table below, at the opening year (2023), the following intersections would experience an increase in delay, resulting in a less efficient level of service (LOS) in one or both of the peak hours of travel compared with the No-Build Alternative.

  - SR-71 southbound ramps/Pine Avenue
  - SR-71 northbound ramps/Pine Avenue
  - El Prado Road/Pine Avenue
  - Fern Road/Pine Avenue

The table below also shows that the following intersections would have additional delay at the horizon year (2043) under the Build Alternative.

- SR-71 southbound ramps/Pine Avenue
- SR-71 northbound ramps/Pine Avenue
- El Prado Road/Pine Avenue
- Fern Road/Pine Avenue

The table below also shows that the following intersections would have additional delay at the horizon year (2043) under the Build Alternative:

- SR-71 southbound ramps/Pine Avenue
- SR-71 northbound ramps/Pine Avenue
- El Prado Road/Pine Avenue
- Fern Avenue/Pine Avenue

Table 2.2-12. Intersection Levels of Service

Intersection	No-Build Alternative		Build Alternative	
	LOS (AM)	LOS (PM)	LOS (AM)	LOS (PM)
Opening Year (2023)				
Butterfield Ranch Road/Pine Avenue	B	B	B	B
SR-71 southbound ramps/Soquel Canyon Parkway/Central Avenue	D	D	C	C
SR-71 southbound ramps/Pine Avenue	B	B	**F**	**F**
SR-71 southbound ramps/Shady View Drive/Butterfield Ranch Road	**E**	C	D	C
SR-71 northbound ramps/Central Avenue	A	B	A	A
SR-71 northbound ramps/Pine Avenue	B	A	**F**	**F**
SR-71 northbound ramps/Euclid Avenue (SR-83)	B	B	A	B
El Prado Road/Pine Avenue	B	C	**F**	**F**
Fern Avenue/Pine Avenue	A	A	**F**	**F**
Euclid Avenue (SR-83)/Pine Avenue	**F**	**F**	**F**	**F**
Horizon Year (2043)				
Butterfield Ranch Road/Pine Avenue	D	B	D	B
SR-71 southbound ramps/Soquel Canyon Parkway/Central Avenue	D	D	C	D
SR-71 southbound ramps/Pine Avenue	B	B	**F**	**F**
SR-71 southbound ramps/Shady View Drive/Butterfield Ranch Road	**E**	C	D	C
SR-71 northbound ramps/Central Avenue	A	D	A	A
SR-71 northbound ramps/Pine Avenue	B	B	**F**	**F**
SR-71 northbound ramps/Euclid Avenue (SR-83)	B	B	B	B
El Prado Road/Pine Avenue	C	**F**	**F**	**F**
Fern Avenue/Pine Avenue	A	A	D	B
Euclid Avenue (SR-83)/Pine Avenue	**F**	**F**	**F**	**F**

Source: Urban Crossroads 2020 (see Appendix B Traffic Report).
BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

Because there would be increases in delay at certain study area intersections under the Build Alternative relative to the No-Build Alternative, the project has the potential to worsen traffic flow at specific locations.

On the basis of the CO Protocol screening criteria, the proposed project has the potential to worsen air quality; therefore, additional analysis is required (proceed to Section 4.7.2).

Level 7: Is the project suspected of resulting in higher CO concentrations than those existing within the region at the time of attainment demonstration?

Note: The Final 2016 Air Quality Management Plan (AQMP) is the most recent AQMP, but no additional regional or hot-spot CO modeling has been conducted to demonstrate attainment of the 8-hour average O3 standard because SCAQMD submitted a request to EPA to redesignate the Basin as an attainment area for the 8-hour federal CO standard in 2013 (South Coast Air Quality Management District 2013). Therefore, the 2003 AQMP is used as the basis for the following analysis. In addition, the 2003 AQMP did not provide model input assumptions. Instead, it refers to a 1992 CO plan in which a general description of input assumptions was provided (South Coast Air Quality Management District 2003).

Response: No. According to Section 4.7.2 of the CO Protocol, project sponsors are encouraged to use the following criteria to determine the potential for their project to result in higher CO concentrations than those existing within the region at the time of attainment demonstration:

a. The receptors at the location under study are the same distance (or farther) from the traveled roadway as the receptors at the location where attainment has been demonstrated.

   A receptor distance of 3 meters from the traveled roadway was used in the CO attainment demonstration prepared for the 2003 AQMP. With respect to the proposed project, all receptors are no closer than 3 meters from the traveled roadway.

b. The roadway geometry of the two locations is not significantly different. An example of a significant difference would be a greater number of lanes at the location under study compared with the location where attainment has been demonstrated.

   In the CO attainment demonstration prepared for the 2003 AQMP, four approach lanes, in all directions, were used to model the intersections at Wilshire/Veteran and La Cienega/Century, while three approach lanes, in all directions, were used to model the intersections at Sunset/Highland and Long Beach/Imperial. Therefore, if the total number of intersection approach lanes associated with the Build Alternative were to exceed 16 lanes, operations at the intersection could result in a potentially adverse effect. The maximum number of approach lanes at any intersection location would be 10 (Euclid Avenue at Pine Avenue), which is less than the 16 lanes used in the attainment demonstration.

c. Expected worse-case meteorology at the location under study is the same or better than the worst-case meteorology at the location where attainment has been demonstrated.

Relevant meteorological variables include wind speed, wind direction, temperature, and stability class.

In the CO attainment demonstration prepared for the 2003 AQMP, a wind speed of 1 meter per second, a stability class of D, and a worst-case wind angle were used as modeling assumptions. These assumptions are considered worst case; as such, the expected worst-case meteorology at the location under study would be the same or better. In addition, there is no meaningful difference in temperature between the attainment demonstration intersection locations and the proposed project study area intersection locations.

d. Traffic lane volumes at the location under study are the same or lower than those at the location where attainment has been demonstrated.

A comparison of the traffic volumes per lane used for modeling in the attainment plan demonstration and volumes per lane projected to occur at the studied intersection locations is provided in Table 4-6 for the opening year (2023) and horizon year (2043). As shown therein, the overall per-lane approach volumes would generally be lower than the approach lane volumes of the attainment demonstration intersections for the opening year (2023) and horizon year (2043), with the exception of the SR-71 northbound ramps/Euclid Avenue (SR-83) intersection. This intersection would have per-lane volumes at some approaches that would be greater than the highest per-lane approach volumes for the 2003 attainment demonstration. However, overall approach volumes at these locations would be lower than the attainment demonstration intersections, and the existing vehicle stock emits substantially less CO compared to vehicles in operation at the time of the 2003 attainment demonstration, a trend that will continue as older vehicles are replaced with newer vehicles that release lower levels of pollutants. Furthermore, as shown in Table 2.2-5, the existing maximum 8-hour background CO concentration in the project area is no greater than 1.1 ppm compared to the 8-hour background concentration of 7.8 ppm used for the 2003 attainment demonstration analysis (79 percent lower). Because of the lower overall intersection volumes, lower emissions from vehicles, and lower background concentrations, no CO hot spot is anticipated.

e. Percentage of vehicles operating in cold-start mode at the location under study is the same or lower than the percentage at the location where attainment has been demonstrated.

The proposed project would not increase the percentage of vehicles operating in cold-start mode in the project area because no parking facilities would be constructed as part of the proposed project.

f. Percentage of heavy-duty gas trucks at the location under study is the same or lower than the percentage at the location where attainment has been demonstrated.

The attainment area demonstration intersections are located along urban arterial roadways with a commercial and residential mix of land uses within the Basin. The project area intersections are located along urban arterials near primarily undeveloped or commercial

land uses. Because neither the demonstration intersection areas nor the project area has a high concentration of industrial uses or other uses that would be responsible for a substantial number of truck trips, the project area is anticipated to have a percentage of heavy-duty truck trips similar to that of the attainment demonstration intersections.

Table 2.2-13. 2023 and 2043 Peak Hour Approach Lane Volumes.

Location	Eastbound (AM/PM)	Westbound (AM/PM)	Northbound AM/PM)	Southbound (AM/PM)
Opening-Year Intersection Peak-Hour Approach-Lane Volumes				
Butterfield Ranch Rd./Pine Av.	162/101	54/149	187/115	197/169
SR-71 southbound ramps/Soquel Canyon Pwy./Central Av.	556/293	297/281	0/0	0/0
SR-71 southbound ramps/Pine Av.	335/216	67/130	0/0	0/0
SR-71 southbound ramps/Shady View Dr./Butterfield Ranch Rd.	426/154	133/165	0/0	23/159
SR-71 northbound ramps/Central Av.	441/440	325/356	0/0	0/0
SR-71 northbound ramps/Pine Av.	468/853	133/212	1/11	0/0
SR-71 northbound ramps/Euclid Av. (SR-83)	186/164	567/502	0/0	0/0
El Prado Rd./Pine Av.	413/642	427/358	0/0	0/0
Fern Av./Pine Av.	453/754	496/383	0/0	0/0
Euclid Av. (SR-83)/Pine Av.	239/499	303/174	242/212	219/232
Horizon-Year Intersection Peak-Hour Approach-Lane Volumes				
Butterfield Ranch Rd./Pine Av.	164/115	55/170	210/184	167/228
SR-71 southbound ramps/Soquel Canyon Pwy./Central Av.	627/469	114/200	0/0	0/0
SR-71 southbound ramps/Pine Av.	370/149	105/222	0/0	0/0
SR-71 southbound ramps/Shady View Dr./Butterfield Ranch Rd.	545/216	352/429	0/0	25/171
SR-71 northbound ramps/Central Av.	399/401	238/313	0/0	0/0
SR-71 northbound ramps/Pine Av.	455/681	165/249	1/13	0/0
SR-71 northbound ramps/Euclid Av. (SR-83)	337/431	1,114/1,125	0/0	0/0
El Prado Rd./Pine Av.	296/701	374/457	0/0	0/0
Fern Av./Pine Av.	309/692	351/453	0/0	0/0
Euclid Av. (SR-83)/Pine Av.	171/450	217/287	306/369	476/467
Attainment Demonstration Intersections (Used in the SCAQMD 2003 AQMP CO Attainment Demonstration)				
Wilshire Boulevard and Veteran Avenue (four lanes, all directions)	1,238/517	458/829	180/350	140/233
Sunset Boulevard and Highland Avenue (three lanes, all directions)	472/588	447/513	768/611	517/746
La Cienega Boulevard and Century Boulevard (four lanes, all directions)	635/561	473/682	346/507	205/419
Long Beach Boulevard and Imperial Highway (three lanes, all directions)	406/673	587/467	160/315	252/383
Source: Urban Crossroads 2017a; South Coast Air Quality Management District 2003.				

g. For projects involving intersections, average delay and queue length figures for each approach are the same or smaller for the intersection under study compared with those found in the intersection where attainment has been demonstrated.

   As shown in Table 2.2-11, the overall per-lane approach volumes would generally be lower than the approach-lane volumes of the attainment demonstration intersections for the opening year 2023 and horizon year 2043, with the exception of the SR-71 northbound ramps/Euclid Avenue (SR-83) intersection. This intersection would have per-lane volumes from some approaches greater than the highest per-lane approach volumes for the 2003 attainment demonstration. However, overall approach volumes (when approach volumes are not divided by the number of lanes) at these locations would be lower than the volumes at attainment demonstration intersections. Overall average delay and queue length figures for the Build Alternative are anticipated to be less than those for the attainment demonstration intersections.

h. Background concentration at the location under study is the same as or lower than the background concentration at the location where attainment has been demonstrated.

   As shown in Table 2.2-5, the maximum recorded background CO concentration in the project area in the past 3 years was 1.3 ppm for the 8-hour averaging period. This value is substantially less than the 8-hour average maximum background concentration of 7.8 ppm (2005) used for the 2003 AQMP attainment demonstration.

   Because the answer to the second Level 7 question is "no," per the CO Protocol, the project is satisfactory and no further analysis is needed. Because project implementation would not result in CO concentrations that would exceed the 1-hour or 8-hour ambient air quality standards, on the basis of CO Protocol analysis methodology, the Build Alternative is not expected to result in a new or more severe exceedance of either the NAAQS or CAAQS. As previously indicated, the proposed project was evaluated using Figure 1 and Figure 3 of the CO Protocol. Through this process, it was determined that the Build Alternative would not be expected to result in a new or more severe exceedance of either the NAAQS or CAAQS related to CO.

PM Analysis

PM emissions were estimated for the existing 2016 baseline, as well as the No-Build Alternative, and the Build Alternative under 2023 opening-year and the 2043 horizon-year conditions using project-specific traffic data and CT-EMFAC 2017. At the opening year (2023), the Build Alternative would be responsible for a net daily emissions increase of 216 pounds of PM10 and 45 pounds of PM2.5 relative to the No-Build Alternative. At the horizon year (2043), the Build Alternative would be responsible for a net daily emissions decrease of 195 pounds of PM10 and 30 pounds of PM2.5 relative to the No-Build Alternative. These emissions are regional mass emissions and would occur throughout the Basin, with a portion occurring in the immediate project area.

PM Hot Spot Analysis

In November 2015, the U.S. EPA released an updated version of the Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and

Maintenance Areas (Guidance) for quantifying the local air quality impacts of transportation projects and comparing them to the PM NAAQS (75 Federal Register 79370). The U.S. EPA originally released the quantitative guidance in December 2010 and released a revised version in November 2013 to reflect the approval of EMFAC 2011 and U.S. EPA's 2012 PM NAAQS final rule. The November 2015 version reflects MOVES2014 and its subsequent minor revisions, such as MOVES2014a, which revised design value calculations to be more consistent with other U.S. EPA programs and reflect guidance implementation and experience in the field. Note that EMFAC, not MOVES, should be used for project hot-spot analysis in California. The 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 significant 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 intersections 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 that are identified in the PM2.5 and PM10 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Hot Spot Screening

The proposed project involves a local roadway gap closure and widening, which would allow for increased access to and from the existing Pine Avenue/SR-71 interchange but would not involve a new or expanded highway. The project would not change surrounding land uses such that a significant increase in diesel vehicles would result.

Under the 2023 opening-year Build Alternative, six intersections would operate at LOS D or worse during one or both peak hours, including five intersections along Pine Avenue that would operate at LOS F. Under the 2043 horizon-year Build Alternative, eight intersections would operate at LOS D or worse, with four intersections along Pine Avenue projected to operate at LOS F during one or both peak hours. Because nearly all the land in the project vicinity designated for industrial uses by the general plans of the Cities of Chino and Chino Hills has already been developed for those uses, substantial increases in overall truck volumes in the project vicinity are not anticipated. The project would involve a redistribution of passenger vehicle and truck traffic from the SR-71 interchanges north and south of the project site to the project site because the proposed project would offer more direct access to SR-71 for properties to the east of SR-71 than the No-Build Alternative. Increases in truck traffic volumes on Pine Avenue between Fern Avenue and Euclid Avenue relative to the No-Build Alternative would be as much as 1,763 trucks per day under the 2023 Build Alternative and 787 trucks per day under

the 2043 Build Alternative. These increases in truck volumes under the Build Alternative would be met with corresponding reductions along other roadway segments in the project vicinity because the project would redistribute truck traffic to the more direct SR-71 access route from Pine Avenue.

The proposed project has no bus or rail terminal component and would not affect any bus terminals or transfer points. The proposed project would not expand any bus terminal, rail terminal, or related transfer point that would increase the number of diesel vehicles congregating at any single location.

The project site is not in or affecting locations, areas, or categories of sites that are identified in a PM10 or PM2.5 implementation plan. The immediate project area is not considered to be a site of violation or possible violation.

The U.S. EPA guidance for PM hot-spot analysis and interagency consultation were used to determine whether the project is a POAQC. On August 22, 2017, the project was presented to the members of the TCWG at an in-person meeting, and the members of the group determined that the project was not a POAQC.

NO_2 Analysis

As a surrogate for NO_2 emissions that would result from the proposed project, NO_X emissions were estimated for the existing 2016 baseline, as well as the No-Build Alternative, and the Build Alternative under 2023 opening-year and the 2043 horizon-year conditions using project-specific traffic data and CT-EMFAC 2017. At the opening year (2023), the Build Alternative would be responsible for a net daily emissions reduction of 106 pounds of NO_X relative to the No-Build Alternative. At the horizon year (2043), the Build Alternative would be responsible for a net daily emissions reduction of 365 pounds of NO_X relative to the No-Build Alternative. At both the 2023 opening year and 2043 horizon year, NO_X emissions for the Build Alternative and No-Build Alternative would be less than under existing (2016) conditions because of the improvement in engine emissions technologies as well as the retirement of older vehicles.

Mobile-Source Air Toxics

FHWA released updated guidance in October 2016 (FHWA 2016) for determining when and how to address MSAT impacts in the NEPA process for transportation projects. FHWA identified three levels of analysis:

- No analysis for exempt projects or projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; and
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

Projects with no impacts generally include those that a) qualify as a categorical exclusion under 23 CFR 771.117, b) qualify as exempt under the FCAA conformity rule under 40 CFR 93.126, and c) are not exempt but have no meaningful impacts on traffic volumes or vehicle mix.

Projects that have low potential MSAT effects 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.

Projects with high potential MSAT effects 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; or

- Create new or add significant capacity for urban highways such as interstates, urban arterials, or urban collector-distributor routes where AADT is projected to be in the range of 140,000 to 150,000, or greater, by the design year; and

- Are proposed to be located in proximity to populated areas or, in rural areas, in proximity to concentrations of vulnerable populations (i.e., schools, nursing homes, hospitals).

The purpose of the proposed project is to provide an additional link to SR-71 from Euclid Avenue and accommodate existing and future traffic demand in the cities of Chino and Chino Hills, consistent with the Circulation Elements from the general plans of the cities of Chino and Chino Hills. The project would not add substantial new capacity to the roadway; therefore, it is expected to have low potential for MSAT effects.

The amount of MSAT emitted would be proportional to VMT. The VMT estimated for the Build Alternative is slightly higher than that for the No-Build Alternative because the additional capacity would increase the efficiency of the roadway and attract trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions under the Build Alternative within the project corridor, along with a corresponding decrease in MSAT emissions along parallel routes. The emissions increase would be offset somewhat by lower MSAT emission rates due to increased speeds; according to the U.S. EPA's MOVES2014 model, emissions of all priority MSATs decrease as speed increases. Also, emissions will most likely be lower than present levels in the design year as a result of U.S. EPA's national control programs, which are projected to reduce annual MSAT emissions by more than 90 percent between 2010 and 2050 (FHWA 2016). Local conditions may differ from the national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the U.S. EPA-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 nearly all cases.

The widening of Pine Avenue and connection to the SR-71 interchange may result in localized areas where ambient concentrations of MSATs could be higher than concentrations under the No-Build Alternative. However, the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be reliably quantified because of incomplete or unavailable information for forecasting project-specific MSAT health impacts. Moreover, there

are no sensitive receptors within approximately 500 feet (150 meters) of the proposed project, and any localized increase in MSAT could be offset by increases in speeds and reductions in congestion, which are associated with lower MSAT emissions. Also, MSATs would be lower in other locations as traffic shifts away from them. However, on a regional basis, U.S. EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today's levels.

Construction Conformity
Construction activities would 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 C.F.R. §93 123(c)(5).

No-Build Alternative

Under the No-Build Alternative, increase congestion, when compared with the Build Alternative, would likely result in worsened air quality.

2.2.6.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

AQ-1 During project construction, exhaust and fugitive dust emission control measures, as required by Caltrans' Standard Specifications and local air district rules, shall be implemented to avoid and/or minimize impacts on air quality.

2.2.7 Climate Change

Neither the United States Environmental Protection agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. FHWA emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations, and maintenance. Because there have been requirements set forth in California legislation and executive orders on climate change, the issue is addressed in the California Environmental Quality Act (CEQA) chapter of this document. The CEQA analysis may be used to inform the National Environmental Policy Act (NEPA) determination for the project.

2.2.8 Noise

2.2.8.1 REGULATORY SETTING

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the 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.

California Environmental Quality Act

CEQA requires a strictly 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 Code of Federal Regulations Part 772 (23 CFR 772) noise analysis; please see Chapter 3 of this document for further information on noise analysis under CEQA.

National Environmental Policy Act and 23 CFR 772

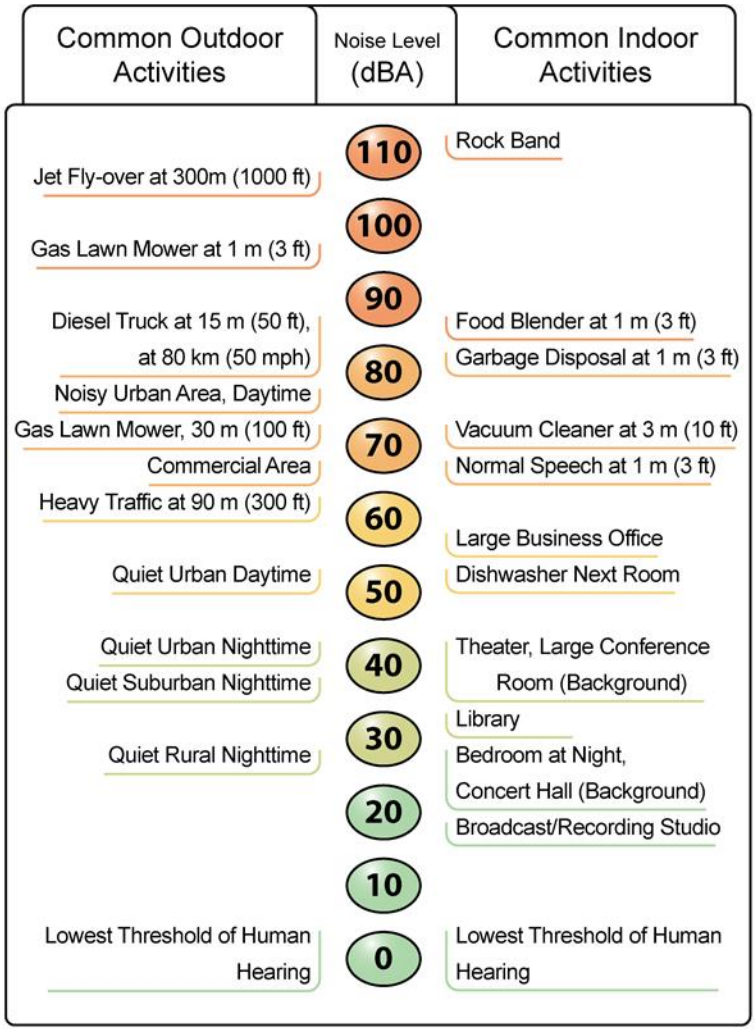
For highway transportation projects with Federal Highway Administration (FHWA) involvement (and the Department, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 Code of Federal Regulations [CFR] 772) govern the analysis and abatement of traffic noise impacts. The 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 noise abatement criteria (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 noise abatement criteria for use in the NEPA/23 CFR 772 analysis.

Table 2.2-14. Noise Abatement Criteria

Activity Category	NAC, 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[1]	67 (Exterior)	Residential.
C[1]	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.
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 NAC—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 NAC—reporting only	Undeveloped lands that are not permitted.

[1] Includes undeveloped lands permitted for this activity category.
Source: Noise Study Report (April 2019).

The figure below lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels in this section with common activities.



Source: California Department of Transportation ISEA Annotated Outline, March 2020.

Figure 6. Noise Level of Common Activities.

According to the Department's Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011, 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 increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming 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.

The Department's 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).

2.2.8.2 AFFECTED ENVIRONMENT

The primary source used in the preparation of this section is the Noise Study Report (Caltrans 2019b) prepared for the project.

A field investigation was conducted to identify the land uses that could be subject to traffic and construction noise impacts from the proposed project. Land uses in the project area were categorized by land use type, activity category, and the extent of frequent human use and summarized in the Noise Abatement Criteria table, above. Land uses for the project, identified along the project alignment, fall under Category C, F, and G. Activity Category C have noise impact criteria, but Category F and G do not.

Short-term measurement locations and modeling locations were selected to represent land uses along the project alignment. Additionally, a long-term measurement was conducted to capture the day/night traffic noise level patterns in the project area. Three short-term measurements were take on the El Prado Golf Course property (Activity Category C) located adjacent to noise sensitive locations such as a tee box, fairway, green, or driving range. Modeling locations were chosen to represent these same areas that were within the project alignment's vicinity. One short-term measurement was taken next to an undeveloped property (Activity Category G) east of the golf course. As the property was not able to be accessed, the measurement was taken at the property line 55 feet from the edge of Pine Avenue. One modeling receiver was used to represent this measurement location for this land use. Long-term monitoring was conducted at one location (LT-1) off of a golf cart pathway crossing Pine Avenue on the eastern property boundary of the El Prado Golf Course. The purpose of the long-term measurement was to identify the traffic noise pattern throughout a typical day/night cycle and collected over a period of 41 hours.

The figure below identifies the measurement and modeling locations and the table that follows the figure below summarizes the results of the short-term monitoring.

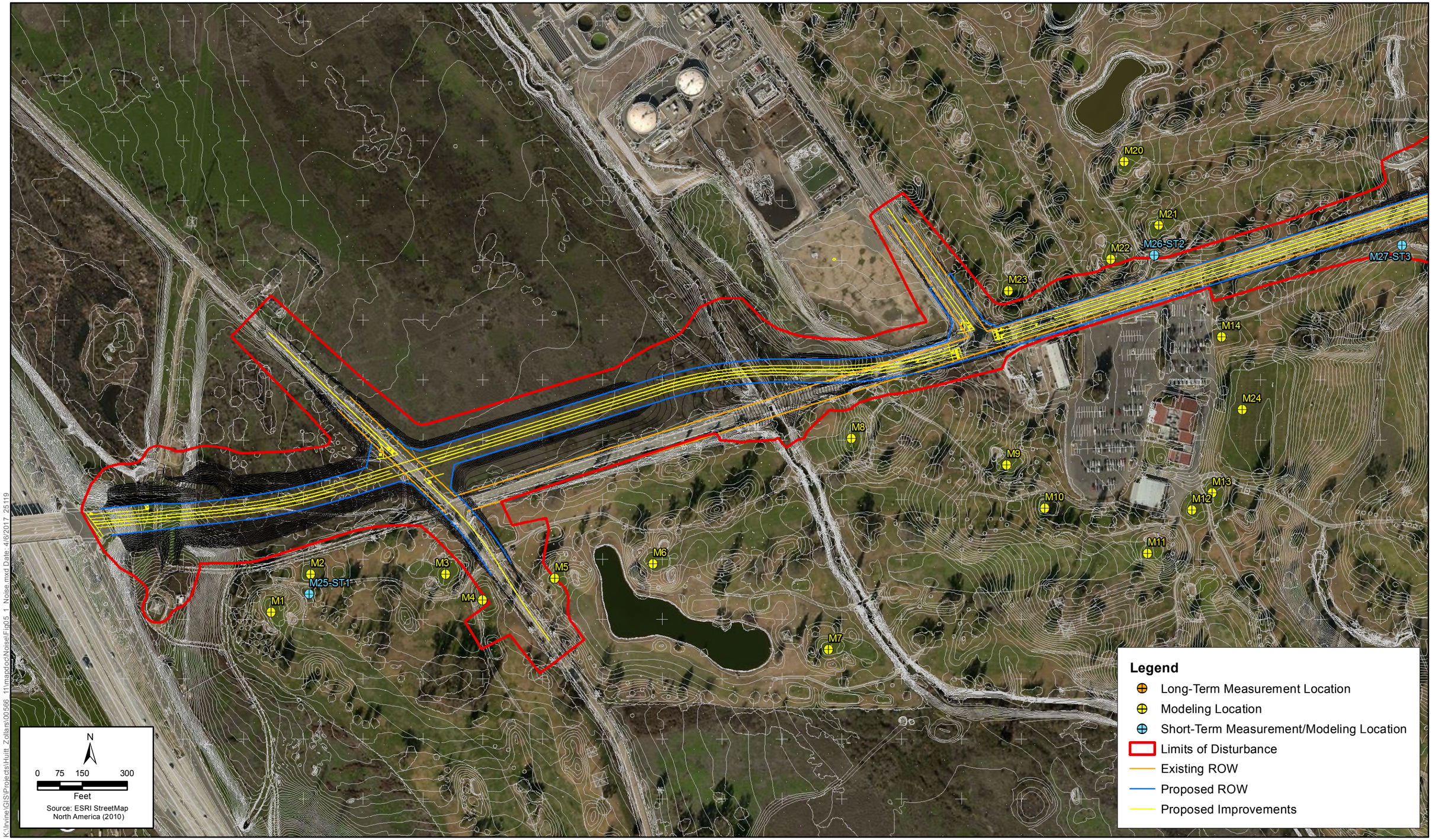


Figure 7 - Sheet 1
Noise Measurement and Modeling Locations
Pine Avenue Extension Project

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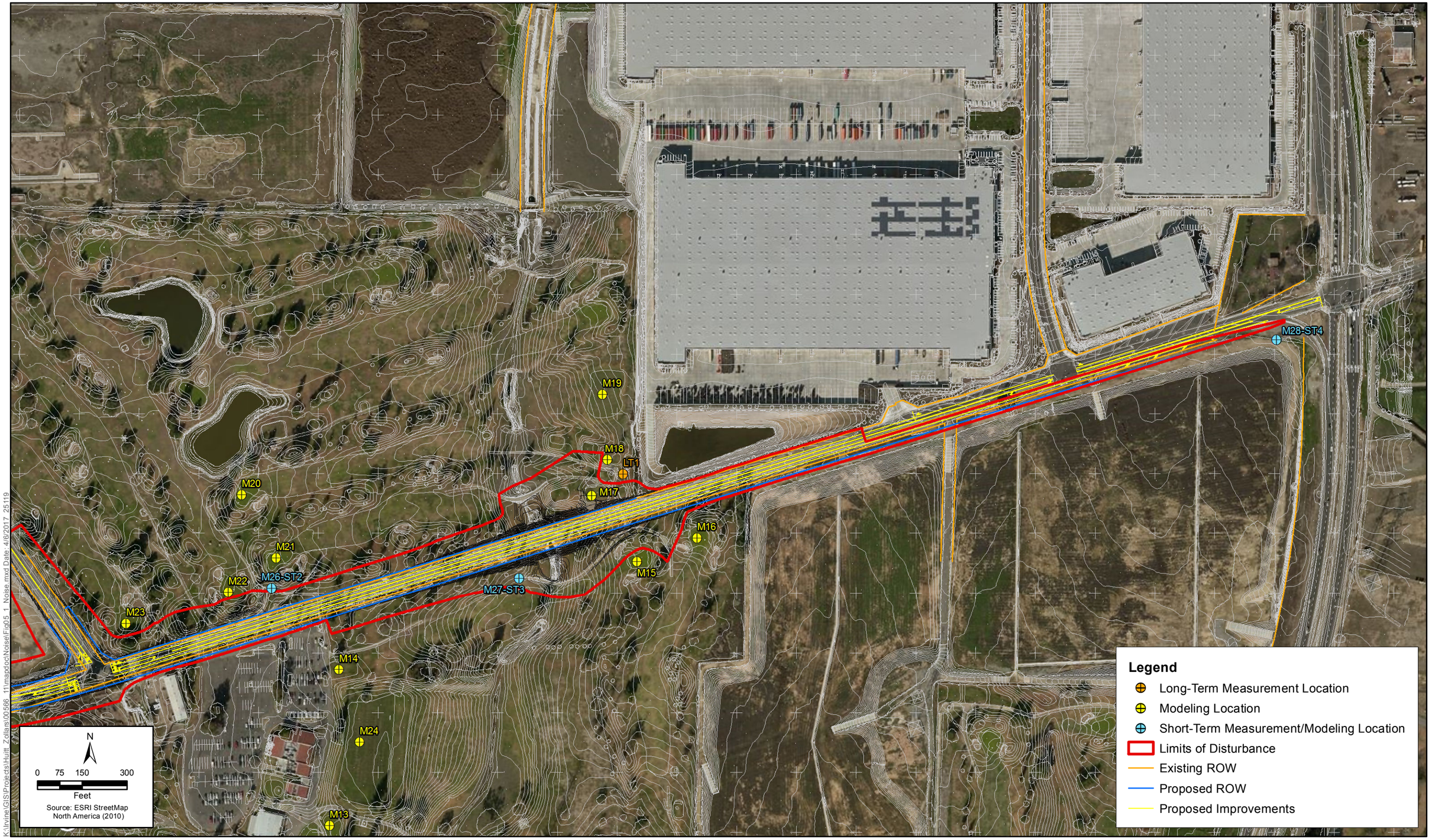

Figure 7 - Sheet 2
Noise Measurement and Modeling Locations
Pine Avenue Extension Project

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Table 2.2-15. Summary of Short-Term Measurements

Receptor	Address	Land Uses/Activity Category	Start Date/Time	Duration	L_{eq}
ST-1	—	—	—	—	—
Run-1	El Prado Golf Courses, 6555 Pine Ave Chino, CA	Golf Course/C	01/26/2017 10:42 a.m.	26:00	54.7
Run-2	El Prado Golf Courses, 6555 Pine Ave Chino, CA	Golf Course/C	01/26/2017 11:24 a.m.	20:00	53.4
ST-2	—	—	—	—	—
Run-1	El Prado Golf Courses, 6555 Pine Ave Chino, CA	Golf Course/C	01/26/2017 12:25 p.m.	20:00	56.4
Run-2	El Prado Golf Courses, 6555 Pine Ave Chino, CA	Golf Course/C	01/26/2017 12:49 p.m.	23:00	55.9
ST-3	—	—	—	—	—
Run-1	El Prado Golf Courses, 6555 Pine Ave Chino, CA	Golf Course/C	01/26/2017 1:38 p.m.	20:00	60.1
Run-2	El Prado Golf Courses, 6555 Pine Ave Chino, CA	Golf Course/C	01/26/2017 2:00 p.m.	20:00	59.7
ST-4	—	—	—	—	—
Run-1	7065 Pine Ave Chino, CA	Undeveloped/G	01/26/2017 2:52 p.m.	20:00	65.2
Run-2	7065 Pine Ave Chino, CA	Undeveloped/G	01/26/2017 3:14 p.m.	21:00	65.1

Source: Noise Study Report (April 2019).

Long-Term monitoring was conducted at one location (LT-1). The purpose of the long-term noise measurement was to determine the changes in noise levels within the project area throughout a typical day. The long-term monitoring site was approximately 110 feet north from the edge of Pine Avenue, 50 feet from the eastern property boundary, with the equipment attached to a tree. The loudest-hour noise level measured, between 5 and 6 p.m. on a weekday (Thursday, January 25, 2017) was 60.9 dBA Leq(h), as shown in the table below.

Table 2.2-16. Summary of Long-Term Monitoring

Date	Time (hour beginning)	1-hour L_{eq} (dBA)	Difference from Worst Hour (dB)
January 25, 2017	**17:00**	**60.9**	**0.0**
	18:00	59.4	-1.5
	19:00	57.9	-3.0
	20:00	57.4	-3.5
	21:00	57.4	-3.5
	22:00	55.9	-5.0
	23:00	52.7	-8.2
January 26, 2017	0:00	54.5	-6.4
	1:00	49.3	-11.6
	2:00	48.6	-12.3
	3:00	51.5	-9.4
	4:00	54.4	-6.5
	5:00	57.3	-3.6
	6:00	60.0	-0.9
	7:00	59.6	-1.3
	8:00	58.3	-2.6
	9:00	58.0	-2.9
	10:00	56.1	-4.8
	11:00	55.5	-5.4
	12:00	53.2	-7.7
	13:00	54.8	-6.1
	14:00	54.8	-6.1
	15:00	55.1	-5.8
	16:00	57.4	-3.5
	17:00	58.9	-2.0
Maximum		60.9	
Minimum		48.6	

Notes:
Worst noise hour is **bolded**.
Source: Noise Study Report (April 2019).

The TNM 2.5 software was utilized to compare measured traffic noise levels with modeled noise levels at field measurement locations, using traffic count data collected at the time of the noise measurements. Based on the guidance in the Technical Noise Supplement (TeNS), in cases where modeled noise level values differ from measured values by more than 3 dB, calibration factors (K-factors) are used to adjust predicted noise levels at the respective receive locations as well as nearby receivers that are representative of a similar noise environment. K-factors and comparisons between measured and modeled noise levels at each measurement location are listed in the table below.

Table 2.2-17. Comparison of Measured and Modeled Worst Hour Sound Levels

Measurement Location	Measured Existing Sound Level (dBA)	Modeled Existing Sound Level (dBA)	Measured Minus Modeled (dB)	K-Factor used (dB)
ST1	53.4	54.2	-0.8	0
ST2	55.9	57.6	-1.7	0
ST3	60.1	57.8	2.3	0
ST4	65.1	63.9	1.2	0
Source: Noise Study Report (April 2019).				

The existing worst-noise-hour traffic noise levels range from 46 to 64 dBA Leq(h). The maximum noise level, 64 dBA Leq(h), is predicted to occur at an undeveloped area (Activity Category G). Under the existing conditions, traffic noise levels do not approach or exceed applicable Noise Abatement Criteria (NAC) at any of the receivers modeled in the TNM noise analysis for existing conditions.

2.2.8.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans' provisions in Section 14-8.02, Noise Control, of the 2010 Standard Specifications.

Two types of short-term noise impacts would occur during project construction. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project site, which would incrementally raise noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities would be moved on site, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the project vicinity. A high single-event noise exposure potential, at a maximum level of 87 dBA Lmax from trucks passing at 50 feet, would exist. However, the projected construction traffic would be minimal compared with existing traffic volumes on other affected streets, and the associated long-term noise level change would not be perceptible. Therefore, construction-related worker commutes and equipment transport noise impacts would be short term and would not be adverse.

The second type of short-term noise impact would be from construction activities. Construction is performed in distinct steps, each of which has its own mix of equipment and consequently its own noise characteristics. These various sequential phases would change the character of the noise generated and the noise levels along the project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. The table below lists typical construction equipment noise levels (Lmax) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor.

Table 2.2-18. Typical Construction Equipment Noise Levels

Equipment	Range of Maximum Sound Level (dBA Lmax at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA Lmax at 50 feet)
Pile Drivers	81 to 96	93
Rock Drills	83 to 99	96
Jackhammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Dozers	77 to 90	85
Tractors	77 to 82	80
Front-end Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 t 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86
Source: Noise Study Report (April 2019) Notes: dBA = A-weighted decibels, Lmax = maximum instantaneous noise level.		

Typical noise levels at 50 feet from an active construction area are up to 91 dBA Lmax during the noisiest construction phases. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavation machinery such as backfillers, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three or four minutes at lower power settings.

Construction of the proposed project is expected to require the use of earthmovers, bulldozers, paving machines, water trucks, dump trucks, concrete trucks, rollers, and pickup trucks. Noise associated with the use of construction equipment is estimated to be between 79 and 89 dBA Lmax at a distance of 50 feet from the active construction area for the grading phase. The maximum noise level generated by each earthmover is assumed to be approximately 86 dBA Lmax at 50 feet from the earthmover in operation. Each bulldozer would generate approximately 85 dBA Lmax at 50 feet. The maximum noise level generated by water trucks and pickup trucks is approximately 86 dBA Lmax at 50 feet from these vehicles. Each doubling of the sound source with equal strength increases the noise level by 3 dBA.

Each piece of construction equipment operates as an individual point source. The worst-case composite noise level at the nearest residence during this phase of construction would be 91 dBA Lmax (at a distance of 50 feet from an active construction area).

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with applicable local noise standards and Caltrans' provisions in Section 14-8.02, Noise Control, of the 2010 Standard Specifications and Special Provisions and applicable local noise standards.

Construction noise would be short term, intermittent, and overshadowed by local traffic noise. Furthermore, implementation of the following measure would further minimize temporary noise impacts from construction:

As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, which may include changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Operation

Predicted traffic noise levels under design-year 2043 Build conditions are compared with existing conditions and design-year 2043 No-Build conditions. The comparison with existing conditions is included in the analysis to identify traffic noise impacts under 23 CFR 772. The comparison to No-Build conditions indicates the direct effect of the project. Modeling results are rounded to the nearest decibel (refer to Table .

Design year traffic noise levels under the No-Build and Build conditions are predicted to range from 48 (modeled receptors M12 and M13) to 69 (modeled receptor M28) dBA Leq(h) under the No-Build condition and 49 (modeled receptor M12) to 69 (modeled receptor M28) dBA Leq(h) under the Build condition. No impacts would occur because there are no noise abatement criteria (NAC) for Activity Category F or G land uses and predicted noise levels on Activity Category C land uses do not approach or exceed the impact criteria of 67 dBA Leq(h). Traffic noise levels would therefore not approach or exceed any NAC at any of the receivers identified in this analysis. Therefore, traffic noise impacts would not occur. Furthermore, because traffic noise impacts are not predicted to occur at any areas of frequent human use in the project area, noise abatement was not considered for this project.

Table 2.2-19, Predicted Future Noise Levels

Receiver I.D.	Measurement Location	Area	Barrier I.D.	Land Use / Activity Category	Number of Dwelling Units or Equivalent	Address	Existing Noise Level L_{eq}(h), dBA	Pine Avenue Extension Project Future Worst Hour Noise Levels (Traffic Noise Only) - L_{eq}(h), dBA																								
								Design Year Noise Level without Project, Leq(h), dBA	Design Year Noise Level with Project, Leq(h), dBA	Design Year Noise Level without Project minus Existing Conditions Leq(h), dBA	Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA	Design Year Noise Level with Project minus Existing Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type (None, or A/E)	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																	
															6 feet			8 feet			10 feet			12 feet			14 feet			16 feet		
															L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR
M1	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	55	56	58	0	2	3	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M2	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	54	55	58	0	3	4	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M3	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	53	53	56	0	3	3	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M4	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	53	53	56	0	3	3	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M5	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	51	51	55	0	4	4	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M6	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	51	51	55	0	4	4	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M7	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	49	50	52	0	2	3	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M8	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	50	51	59	0	8	9	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M9	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	50	51	55	0	4	5	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M10	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	50	51	54	0	3	4	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M11	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	49	50	51	0	1	2	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M12	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	47	48	49	0	1	2	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Receiver I.D.	Measurement Location	Area	Barrier I.D.	Land Use / Activity Category	Number of Dwelling Units or Equivalent	Address	Existing Noise Level $L_{eq}(h)$, dBA	Pine Avenue Extension Project Future Worst Hour Noise Levels (Traffic Noise Only) - $L_{eq}(h)$, dBA						
								Design Year Noise Level without Project, Leq(h), dBA	Design Year Noise Level with Project, Leq(h), dBA	Design Year Noise Level without Project minus Existing Conditions Leq(h), dBA	Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA	Design Year Noise Level with Project minus Existing Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type (None, or A/E)
								Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)						
								6 feet			8 feet			
								$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	
M13	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	47	48	50	0	2	3	C (67)	None
M14	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	52	55	60	0	5	8	C (67)	None
M15	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	54	57	62	0	5	8	C (67)	None
M16	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	55	58	63	0	5	8	C (67)	None
M17	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	60	62	64	0	2	4	C (67)	None
M18	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	55	57	63	0	6	8	C (67)	None
M19	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	47	50	56	0	6	9	C (67)	None
M20	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	49	51	54	0	3	5	C (67)	None
M21	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	54	56	61	0	5	7	C (67)	None
M22	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	57	59	62	0	3	5	C (67)	None
M23	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	57	59	63	0	4	6	C (67)	None
M24	--	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	46	49	53	0	4	7	C (67)	None

Receiver I.D.	10 feet			12 feet			14 feet			16 feet		
	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M13	--	--	--	--	--	--	--	--	--	--	--	--
M14	--	--	--	--	--	--	--	--	--	--	--	--
M15	--	--	--	--	--	--	--	--	--	--	--	--
M16	--	--	--	--	--	--	--	--	--	--	--	--
M17	--	--	--	--	--	--	--	--	--	--	--	--
M18	--	--	--	--	--	--	--	--	--	--	--	--
M19	--	--	--	--	--	--	--	--	--	--	--	--
M20	--	--	--	--	--	--	--	--	--	--	--	--
M21	--	--	--	--	--	--	--	--	--	--	--	--
M22	--	--	--	--	--	--	--	--	--	--	--	--
M23	--	--	--	--	--	--	--	--	--	--	--	--
M24	--	--	--	--	--	--	--	--	--	--	--	--

Receiver I.D.	Measurement Location	Area	Barrier I.D.	Land Use / Activity Category	Number of Dwelling Units or Equivalent	Address	Existing Noise Level $L_{eq}(h)$, dBA	Pine Avenue Extension Project Future Worst Hour Noise Levels (Traffic Noise Only) - $L_{eq}(h)$, dBA																																		
								Design Year Noise Level without Project, Leq(h), dBA	Design Year Noise Level with Project, Leq(h), dBA	Design Year Noise Level without Project minus Existing Conditions Leq(h), dBA	Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA	Design Year Noise Level with Project minus Existing Conditions Leq(h), dBA	Activity Category (NAC)	Impact Type (None, or A/E)	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefited Receivers (NBR)																												
															6 feet			8 feet			10 feet			12 feet			14 feet			16 feet								
															$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR	$L_{eq}(h)$	I.L.	NBR
M25	ST1	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	54	55	57	0	2	3	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M26	ST2	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	59	61	65	0	4	6	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M27	ST3	A	--	Golf Course / C	--	El Prado Golf Courses, 6555 Pine Ave Chino, CA	58	60	59	0	-1	1	C (67)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M28	ST4	A	--	Undeveloped / G	--	7065 Pine Ave Chino, CA	64	69	69	0	0	5	G (-)	None	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

No-Build Alternative

Based on the Noise Study Report prepared for the project, the noise levels under the No Build Alternative is predicted to range from 48 to 69 dBA Leq(h). Overall noise impacts would be similar to the Build Alternative as comparative noise increases between the Build Alternative and the No-Build Alternative would range from 1 to 0 dB.

2.2.8.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

NOI-1 Sound control shall conform to the provision in Section 14-8.02, "Noise Control", of Caltrans' 2010 Standard Specifications and Special Provisions. The contractor shall not exceed 86 dBA Lmax at 50 feet from the job site from 9 p.m. to 6 a.m. Internal combustion engines shall be equipped with the manufacturer-recommended muffler. Internal combustion engines shall not be operated on the job site without the appropriate muffler.

NOI-2 For areas of the project located within or adjacent to the City of Chino limits, the City requires a noise monitoring plan to be prepared and submitted prior to starting all construction projects. The noise monitoring plan shall identify monitoring locations and frequency, instrumentation to be used, and appropriate noise control measure that will be incorporated (General Plan Policy P1). Furthermore, the City limits all construction in the vicinity of noise-sensitive land uses, such as residences, hospitals, or senior centers to daylight hours or 7 am to 7 pm. In addition, the following construction noise control measures shall be included as requirements at construction sites to minimize construction noise impacts (General Plan Policy P2):

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Ensure that during construction, trucks and equipment are running only when necessary.
- Shield all construction equipment with temporary noise barriers to reduce construction related noise impacts.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Utilize "quiet" air compressor and similar equipment, where available.

NOI-3 For the areas of the project located within or adjacent to the City of Chino Hills, compliance with the Chino Hills Noise Ordinance will be required. No person shall construct, repair, remodel, demolish, or grade any real property or structures thereon at any time other than between the hours of 7 am and 7 pm on weekdays, and between 8 am and 6 pm on Saturdays, excluding federal holidays (City of Chino Hills Noise Control Ordinance 8.08.020).

2.2.9 Energy

2.2.9.1 REGULATORY SETTING

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

The California Environmental Quality Act (CEQA) Guidelines section 15126.2(b) and Appendix F, Energy Conservation, require an analysis of a project's energy use to determine if the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources.

2.2.9.2 AFFECTED ENVIRONMENT

Currently, Pine Avenue does not exist between SR-71 and Pomona Rincon Road/Fairfield Ranch Road. Pine Avenue between Pomona Rincon Road/Fairfield Ranch Road and El Prado Road is a two-lane roadway that is closed to public use. East of El Prado Road, Pine Avenue is two-lane roadway to Euclid Avenue. Existing conditions in the project area that affect energy usage include vehicle and truck traffic along Pine Avenue. Based on the TIA Report prepared for the project, the City of Chino has designated El Prado Road and Pine Avenue as some of the designated City of Chino truck routes near and within the project area, while Euclid Avenue is designated as a State Truck Route. The speed limit along Pine Avenue within the project area is 45 miles per hour. There are no Omnitrans public transit service routes within or adjacent to the project. Within the project area, there are existing roadway lighting along Pine Avenue at Euclid Avenue to just west of Fern Avenue near an existing warehouse driveway.

2.2.9.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

The Road Construction Emissions Model (RCEM), version 8.1.0, provided by the Sacramento Metropolitan Air Quality Management District, was used to calculate the CO2 emissions generated during construction. To assess the fuel consumption of the construction equipment required to build the project, the U.S. EPA's GHG equivalencies formulas were used to convert CO2 to fuel volumes. For the Build Alternative, there will be different phases in construction and energy use will be dependent on construction equipment being used per activity, but the average annual consumption will be approximately the same for the 2-year project span. As shown in Table 2.2-20, for a construction duration of 24-months, the estimated total diesel consumption is 349,701.97 gallons.

Table 2.2-20. Construction Equipment/Vehicle Fuel Consumption

Build Alternative	Fuel Consumption Diesel (gallons)	Fuel Consumption Gasoline (gallons)
Annual	174,850.98	-
Project Total	349,701.97	-
Note: Diesel fuel is assumed to be used for all fuel consumption, based off emissions, as majority of fuel consumption will come from off-road equipment and haul trips during construction, with only a small percentage coming from the worker trips that would contribute to gasoline fuel consumption.		

Operations

CT-EMFAC2017 was used to estimate fuel consumption for the existing, opening year, and design year conditions. Table 2.2-21 lists the operational energy consumption from vehicle travel for scenario and analysis year. Table 2.2-22 compares the fuel and energy consumption from each analysis year.

Table 2.2-21. Annual VMT and Fuel Consumption

Scenario/ Analysis Year	Annual VMT	Vehicle Percentage	Fuel Consumption Gasoline (gallons)	Fuel Consumption Diesel (gallons)
Existing/Base Year (2016)	152,483,152,089	Regional default	18,404,599.00	4,322,940.27
Opening Year (2023) No Build	173,440,327,666	Regional default	16,858,036.87	4,655,292.22
Opening Year (2023) Build Alternative	173,526,040,842	Regional default	16,865,807.35	4,656,607.80
Design Year (2043) No Build	205,828,689,920	Regional default	14,016,328.39	4,477,368.99
Design Year (2043) Build Alternative	205,747,312,793	Regional default	14,012,165.05	4,475,914.67

Table 2.2-22. Annual Fuel Consumption (Direct Energy)

Scenario/ Analysis Year	Energy Consumption Gasoline (gallons)	Energy Consumption Diesel (gallons)	Total Energy Consumption (in 100,000 BTU)	Change from Base Year (in 100,000 BTU)	Change from No Build (in 100,000 BTU)
Base Year 2016	18,404,599.00	4,322,940.27	28,068,220.32		
Opening Year 2023					
No Build	16,858,036.87	4,655,292.22	26,665,253.38	-1,402,966.94	
Build Alternative	16,865,807.35	4,656,607.80	26,676,403.8	-1,391,816.52	11,150.42
Design Year 2043					
No Build	14,016,328.39	4,477,368.99	23,004,007.22	-5,064,213.1	
Build Alternative	14,012,165.05	4,475,914.67	22,997,003.35	-5,071,216.97	-7,003.88

Conclusion

The one-time energy expenditure involved in constructing the project be considered direct energy consumption. The construction of the proposed project would primarily consume diesel and gasoline through operation of heavy-duty construction equipment, material deliveries, and debris hauling. Energy use associated with the proposed project construction is estimated to result in the short-term energy consumption from diesel powered equipment and from gasoline powered equipment. This energy use represents a small demand on local and regional fuel supplies that would easily be accommodated, and this demand would cease once construction is completed. Furthermore, construction-related energy consumption would be temporary and not a permanent, new source of energy demand, and demand for fuel would have no noticeable effect on peak or baseline demands for energy.

Indirect energy uses include maintenance activities that would result in long-term indirect energy consumption by equipment required to operate and maintain the extended roadway. The project includes energy-saving and conservation measures incorporated into the design of the project. This includes the use of renewable energy sources in construction and operation, where feasible, the use of recycled construction materials, and LED roadway lighting. Overall, the proposed project Build Alternative in 2023 and 2043 will help reduce operational energy consumption in comparison to existing Baseline conditions in 2016. While the Build Alternative in the Opening Year (2023) has lower energy consumption in comparison to the existing baseline (2016) conditions, the 2023 Build Alternative will use approximately 11,200 BTU more than the No Build Alternative in 2023. However, by the Design Year in 2043, the Build Alternative will use approximately 7000 BTU less than the No Build Alternative. Overall, the Build Alternative in both the Opening and Design Years do not increase energy consumption in comparison to the base year, despite being a capacity increasing project, and therefore should not have a noticeable effect on peak or baseline demands for energy. In the long-term, the Build Alternative will consume less energy than the No Build Alternative.

No-Build Alternative

As the No-Build Alternative would result in no extension of Pine Avenue and no construction would be involved, no energy use beyond what is currently experienced in the area would occur.

2.2.9.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures would be required for the proposed project.

2.3 Biological Environment

2.3.1 Natural 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 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.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act (FESA) are discussed below in Section 2.3.5, Threatened and Endangered Species. Wetlands and other waters are discussed in Section 2.3.2.

2.3.1.1 AFFECTED ENVIRONMENT

Information used in this section is based on the approved Natural Environment Study (February 2020), NES Errata (October 2021 and May 2022).

The biological study area (BSA) evaluated for the project includes all areas that could potentially be directly affected by the project, plus a 300-foot buffer to consider any potential project-related indirect impacts and to accommodate any changes to the project limits and project design that may occur during project development. The Project BSA refers to the Pine Avenue project site plus the 300-foot buffer and the Borrow Site BSA refers to the borrow site area plus the 300-foot buffer. The term project footprint, or project impact area (PIA) refers to the areas proposed for direct impact, including permanent and temporary impacts within both the Pine Avenue project site and the borrow site.

The natural vegetation communities within the BSA include Black Willow Thickets, Mulefat Thickets, Tamarisk Thickets, Cattail Marsh, Salt Grass Flats (disturbed), Annual Brome Grasslands, Coast Live Oak Woodland, Upland Mustards, Poison Hemlock Patches, Perennial Pepper Weed Patches, Hinds's Walnut and related stands, and Eucalyptus. In addition, there are parklands, agricultural, and developed areas within the BSA. The table below provides the acreage of each vegetation community within the BSA and PIA for the Pine Avenue project site and the borrow site.

Table 2.3-1. Vegetation Community

Vegetation Community/ Land Cover Type	Biological Study Area (acre)	PIA—Pine Avenue (acre)	PIA—Borrow Site (acre)
Manual of California Vegetation Alliance			
Black Willow Thickets[1]	9.97	4.41	0.00
Mulefat Thickets[1]	3.79	0.28	0.00
Tamarisk Thickets	0.78	0.00	0.00
Cattail Marsh[1]	0.62	0.00	0.00

Salt Grass Flats (disturbed)	1.74	0.55	0.00
Annual Brome Grassland	4.20	0.67	0.00
Open Water[1]	2.05	0.00	0.00
Coast Live Oak Woodland[1]	0.07	0.07[2]	0.00
Upland Mustards	6.99	2.21	0.00
Poison Hemlock Patches[3]	17.17	4.02	0.00
Perennial Pepper Weed Patches	1.79	1.02	0.00
Hinds's Walnut and Related Stands	0.42	0.22	0.00
Eucalyptus[2]	1.93	0.79	0.00
Land Cover Types			
Parklands	62.88	4.65	0.00
Agriculture	70.79	0.00	33.36
Ruderal/Disturbed	38.33	2.77	0.00
Developed	32.01	5.10	0.00
Total	255.53	26.75	33.36

[1] This vegetation community is identified as a sensitive natural community under CEQA.

[2] A portion of this community appears to occur outside of the PIA; however, because the entire tree will be removed, the entire community will be removed.

[3] Name simplified to provide greater specificity than MCV2 alliance name.

Source: Natural Environment Study (February 2020)

A description of each vegetation community is provided below.

Black Willow Thickets

The Black Willow Thicket occurs along Chino Creek and its tributaries within the western half of the study area. Black Willow Thickets are dominated by mature black willow (*Salix gooddingii*) and co-dominated with red willow (*S. laevigata*), arroyo willow (*S. lasiolepis*), Fremont's cottonwood (*Populus fremontii*), and Chinese elm (*Ulmus parvifolia*). The understory contains desert wild grape (*Vitis girdiana*), California blackberry (*Rubus ursinus*), and common bedstraw (*Galium angustifolia*). In addition, a stand of giant reed (*Arundo donax*) was observed at the edge of the waterway of Chino Creek. This community is flooded during moderate storms in the BSA. Anthropogenic disturbances within this vegetation community included trash washed in after flooding events and pollutants from urban runoff into Chino Creek. Because access north of Pine Avenue is restricted to most vehicular traffic, there are few human disturbances within this community. This community is considered a sensitive vegetation community by CDFW.

Mulefat Thickets

This community is dominated by mulefat (*Baccharis salicifolia*). The herbaceous layer is sparse, with only a few annual grasses, such as rabbit foot beard grass (*Polypogon monspeliensis*). This community is often found on seasonally or intermittently flooded areas. This community is most commonly found on the upper terrace of Chino Creek along the edges of the Black Willow Thicket community. In addition, Mulefat Thicket was found in patches within the basin west of

Fairfield Ranch Road. Since access north of Pine Avenue is restricted to most vehicular traffic, there are few human disturbances within this community. This community is considered a sensitive vegetation community by CDFW.

Tamarisk Thickets

This community is dominated by hairy tamarisk (*Tamarix ramosissima*). The herbaceous layer is sparse, with only a few annual grasses, such as rabbit foot beard grass. Tamarisk Thickets occur adjacent to other native riparian shrubland communities within the Project BSA (Black Willow Thicket and Mulefat Thicket). Tamarisk is considered a Cal-IPC invasive plant species.

Cattail Marsh

Cattail Marsh occurs mostly in low-lying storm drainage features and is co-dominated by broadleaf cattail (*Typha latifolia*), curly dock (*Rumex crispus*), tall flatsedge (*Cyperus eragrostis*), western bulrush (*Schoenoplectus acutus var. occidentalis*), and American bulrush (*S. americanus*). Based on aerial imagery and observations during field evaluations, this community retains water year-round due to irrigation of the agricultural fields adjacent to the Cattail Marsh at the Borrow Site BSA. Due to its location away from the riparian habitat in the Prado Basin, this stand has a limited value to special-status wildlife. This vegetation is considered a sensitive vegetation community by CDFW.

Disturbed Salt Grass Flats

Dominant plants within the Disturbed Salt Grass Flats include salt grass (*Distichlis spicata*), rabbit foot beard grass, Bermuda grass (*Cynodon dactylon*), and bristly ox-tongue (*Helminthotheca echioides*). Soils within this community show signs of past disturbance including large tire ruts throughout the area which retain some water outside of the rainy season. In addition, salt crusts and biotic crusts have formed in areas of this community that are sparsely vegetated.

Annual Brome Grassland

Areas mapped as Annual Brome Grassland occurs only on the west end of Project BSA at the intersection of SR-71 and Pine Avenue near a maintained utility easement. The community is dominated by nonnative grasses such as ripgut brome (*Bromus diandrus*) and soft chess (*B. hordeaceus*) along with Peruvian pepper trees (*Schinus molle*) adjacent to SR-71.

Open Water

Areas mapped as Open Water are perennial waters associated with the Chino Creek and various basins/reservoirs in the BSA. No vegetation is associated with areas of Open Water.

Poison Hemlock Patches

The large open-space area along Fairfield Ranch Road and Pine Avenue is comprised of Poison Hemlock Patches. This community consists of monotypic area of poison hemlock (*Conium maculatum*).

Perennial Pepper Weed Patches

Perennial Pepper Weed Patches are located within the large open space north of Pine Avenue and west of Chino Creek. This community occurs is perennial pepper weed (*Lepidium latifolium*), with some common bedstraw and radish (*Raphanus sativus*) sparsely intermixed.

Uplands Mustards

This community occurs along the edges of utility easements and roadways within the disturbed areas throughout the BSA. It is dominated by shortpod mustard (*Hirschfeldia incana*), mustard (*Brassica nigra*), Indian hedgemustard (*Sisymbrium orientale*), London rocket (*S. irio*), and tocalote (*Centaurea melitensis*), and common fiddleneck (*Amsinckia intermedia*).

Coast Live Oak Woodland

There are two coast live oak (*Quercus agrifolia*) trees located within the BSA. There is no understory associated with the Coast Live Oak trees likely because of roadway right-of-way weed maintenance. Coast live oak trees are protected under the City of Chino Municipal code and this community is of special concern.

Hinds's Walnut and Related Stands

This community is dominated by hybridized walnut trees (*Juglans californica x regia*). This community occurs along Pine Avenue and Fairfield Ranch Road and appears to consist of ornamental plantings based on the trees occurring in rows.

Parklands

Parklands are comprised primarily of open-space areas used for recreational purposes (i.e. El Prado Golf Course). These areas are comprised of manicured lawns and ponded areas that can used by wildlife.

Agriculture

These lands are actively cultivated and provide foraging habitat for birds of prey. Vegetation within agricultural lands include alfalfa (*Medicago sativa*), dwarf nettle (*Urtica urens*), perennial rye grass (*Festuca perennis*), annual bluegrass (*Poa annua*), wild radish (*Rhaphanus sativus*), and great plantain (*Plantago major*). Due to the location of the agricultural areas within the Borrow Site BSA and away from the native habitats within and adjacent to Chino Creek, agricultural areas have limited potential for foraging habitat for special-status avian species.

Ruderal/Disturbed

Within the BSA, ruderal/disturbed areas occur along edges of roadways where soils have been compacted such that vegetation is sparse to none, or is dominated by invasive plants, such as Russian thistle (*Salsola tragus*), puncturevine (*Tribulus terrestris*), tocalote, mustards, and annual grasses. In addition, ruderal/disturbed areas occur within detention basins created for developed properties and landscaped areas along roadways. These areas provide little habitat value because they do not provide cover or food for wildlife, may contribute to spread of invasive species, and occur in areas frequently disturbed/maintained by humans.

Developed

Developed areas include areas where buildings and paved roadways occur. In the BSA, this includes Pine Avenue, Fairfield Ranch Road, and industrial buildings off of Fern Avenue at the eastern end of the Project BSA.

Wildlife Connectivity

Regionally, natural corridors exist within natural communities and dense riparian communities along both Chino Creek and in the Prado Flood Control Basin, which is connected to large habitat blocks in Chino Hills State Park and the Santa Ana River. Riparian habitat within these areas provide high quality habitat for foraging, breeding, shelter, and dispersal/migration for a wide range of wildlife species. SR-71 constrains the project and surrounding region to the west although a number wildlife crossings, ranging in size from small pipes to large-span bridges are located along SR-71 from the SR-91/SR-71 interchange north to the project vicinity just south of the BSA. These crossings provide wildlife connectivity in the region and connect the area to adjacent open space. Heavily developed areas and agricultural uses north of the BSA have limited connectivity value but may provide function for more urban-adapted or agricultural-adapted species.

The areas in the regional vicinity of the BSA are situated near important undeveloped, natural landscape blocks including Chino Hills State Park to the west, the Santa Ana Mountains to the southwest, and the Prado Flood Control Basin and Santa Ana River to the south and southeast. These natural landscape blocks contain important wildlife habitat including home ranges to a wide variety of terrestrial and aquatic species. The lands to the north of the project are predominately commercial and agricultural areas with some intermixed commercial and residential developments further north. The project BSA is identified in the California Essential Habitat Connectivity (CEHC) plan as a small Natural Area and is located immediately adjacent to a CEHC Natural Landscape Block.

2.3.1.2 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Riparian Habitat

The Build Alternative would result in direct effects on 4.93 acres of native riparian habitat comprised of Black Willow Thickets and Mulefat Thickets within the Pine Avenue PIA. No direct effects would occur on the Cattail Marsh community within the borrow site. The impacts on riparian vegetated areas are summarized in the table below. Vegetation communities and project impact areas are illustrated on Figure 8.

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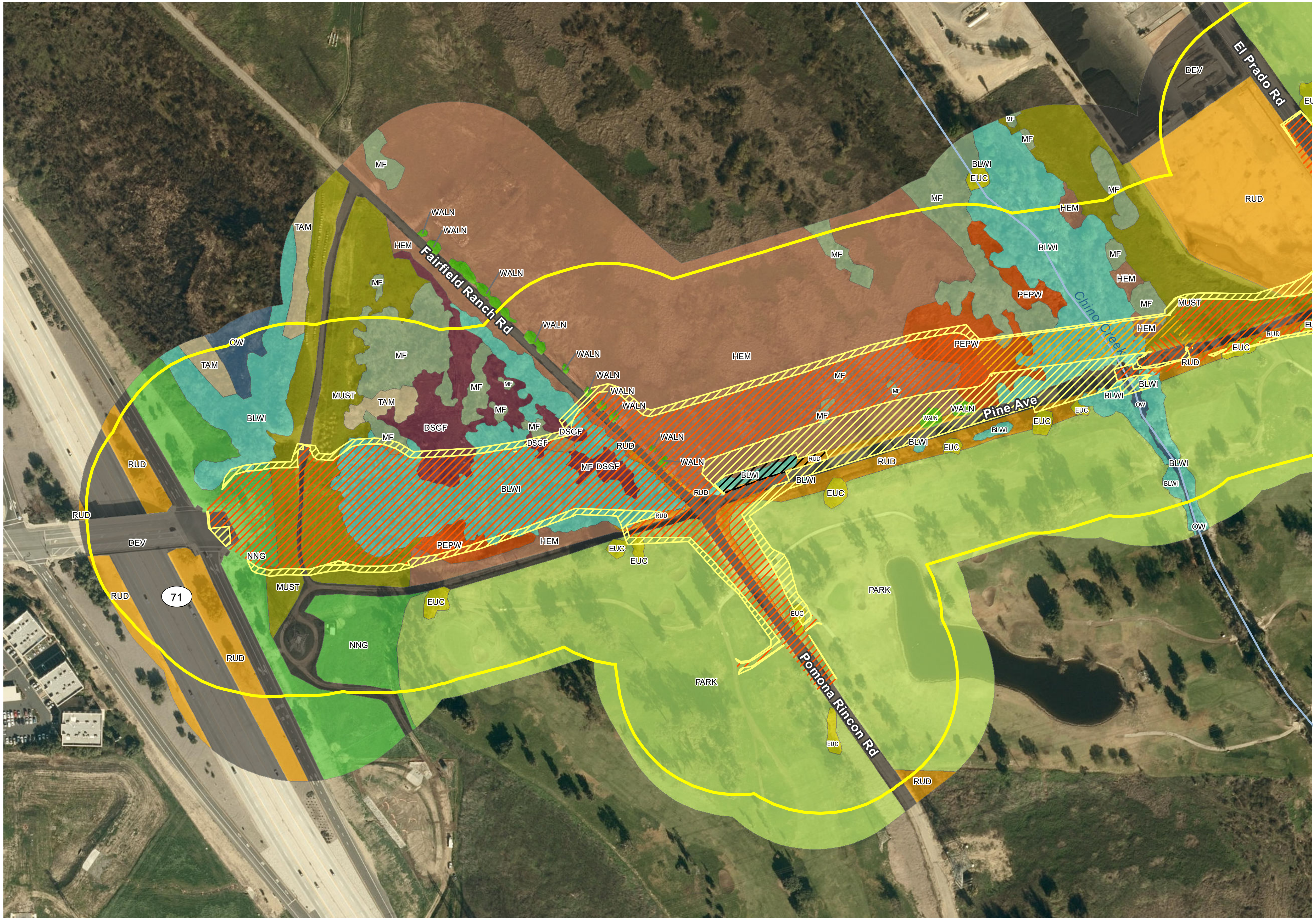

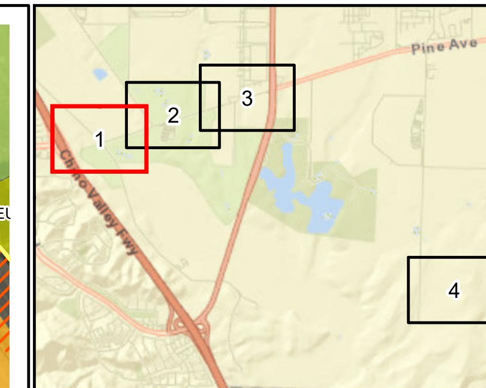

Legend

- Biological Study Area (300-ft Buffer)
- Permanent Impact
- Permanent Impact - Shading
- Permanent & Permanent Shading
- Temporary Impact
- No Impact
- NNG - Annual Brome Grassland
- BLWI - Black Willow Thicket
- DEV - Developed
- DSGF - Disturbed Salt Grass Flats
- EUC - Eucalyptus Woodland
- WALN - Hind's Walnut and Related Stands
- MF - Mulefat Thicket
- OW - Open Water
- PARK - Parklands
- PEPW - Perennial Pepper Weed Patches
- HEM - Poison Hemlock Patches
- RUD - Ruderal/Disturbed
- TAM - Tamarisk Thicket
- MUST - Upland Mustards

Source: ESRI Streetmap

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Figure 8 - Sheet 1
Vegetation Communities and Project Impact Areas
Pine Avenue Extension Project

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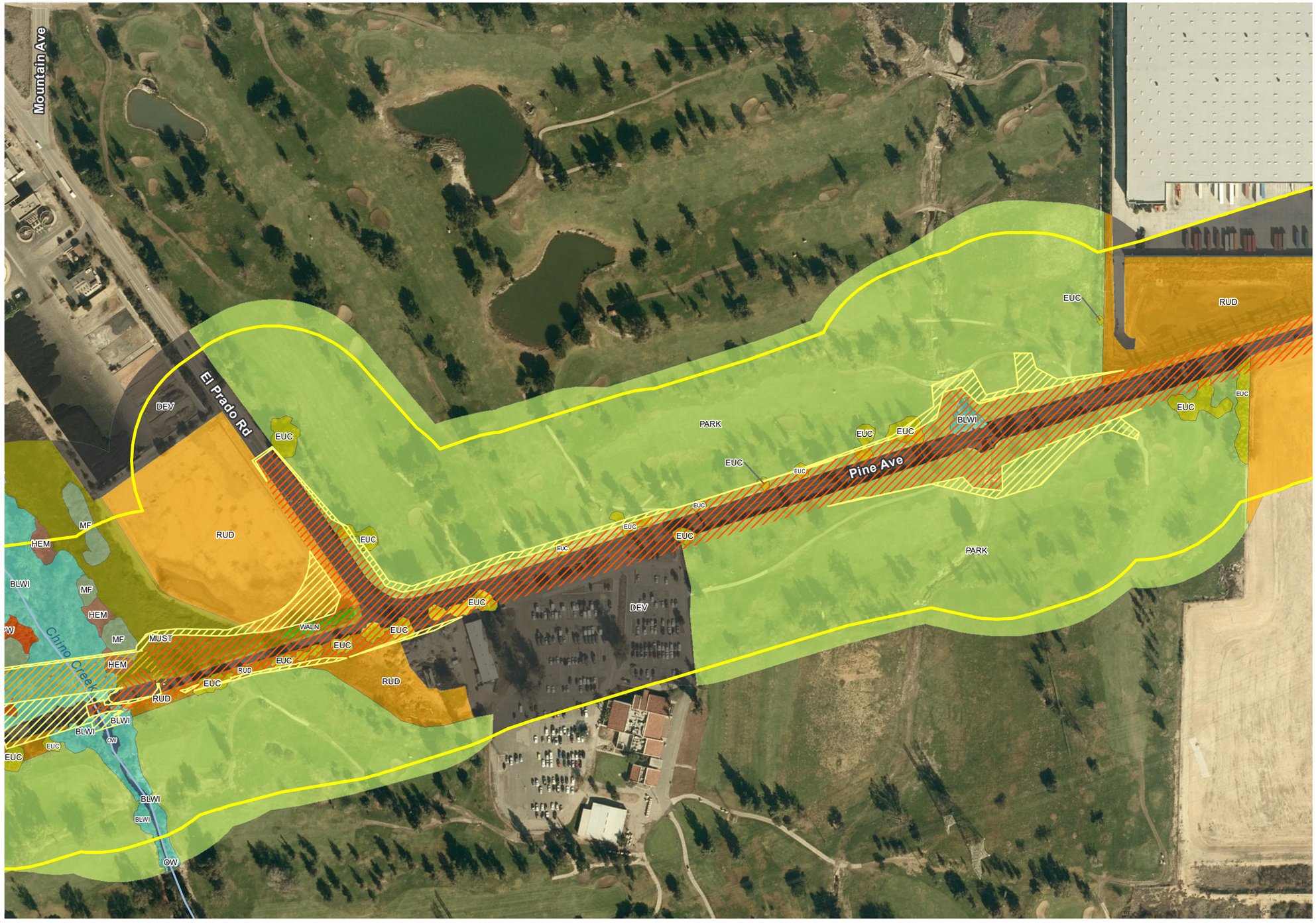

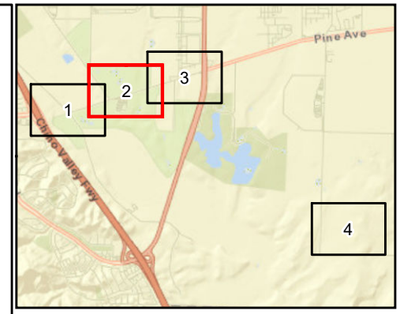

Legend

- Biological Study Area (300-ft Buffer)
- Permanent Impact
- Permanent Impact - Shading
- Permanent & Permanent Shading
- Temporary Impact
- BLWI - Black Willow Thicket
- DEV - Developed
- EUC - Eucalyptus Woodland
- WALN - Hind's Walnut and Related Stands
- MF - Mulefat Thicket
- OW - Open Water
- PARK - Parklands
- PEPW - Perennial Pepper Weed Patches
- HEM - Poison Hemlock Patches
- RUD - Ruderal/Disturbed
- MUST - Upland Mustards

Source: ESRI Streetmap

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Figure 8 - Sheet 2
Vegetation Communities and Project Impact Areas
Pine Avenue Extension Project

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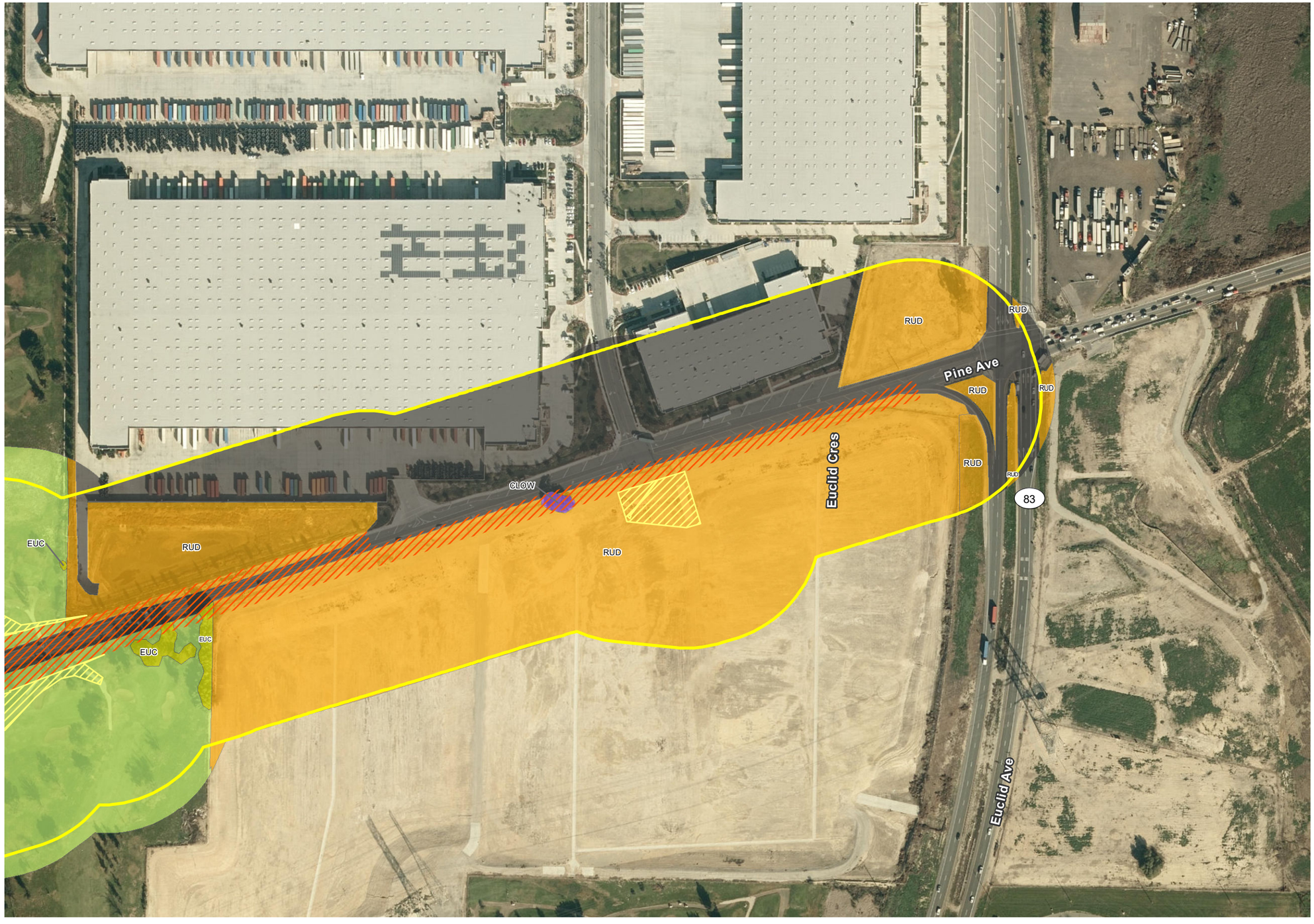

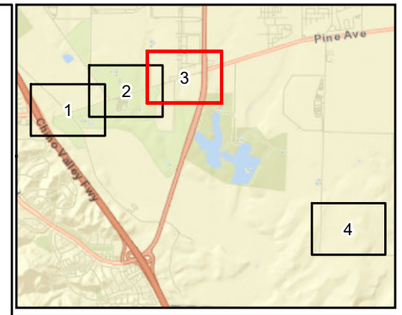

Legend

- Biological Study Area (300-ft Buffer)
- Permanent Impact
- Temporary Impact
- CLOW - Coast Live Oak Woodland
- DEV - Developed
- EUC - Eucalyptus Woodland
- PARK - Parklands
- RUD - Ruderal/Disturbed

Source: ESRI Streetmap

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Figure 8 - Sheet 3
Vegetation Communities and Project Impact Areas
Pine Avenue Extension Project

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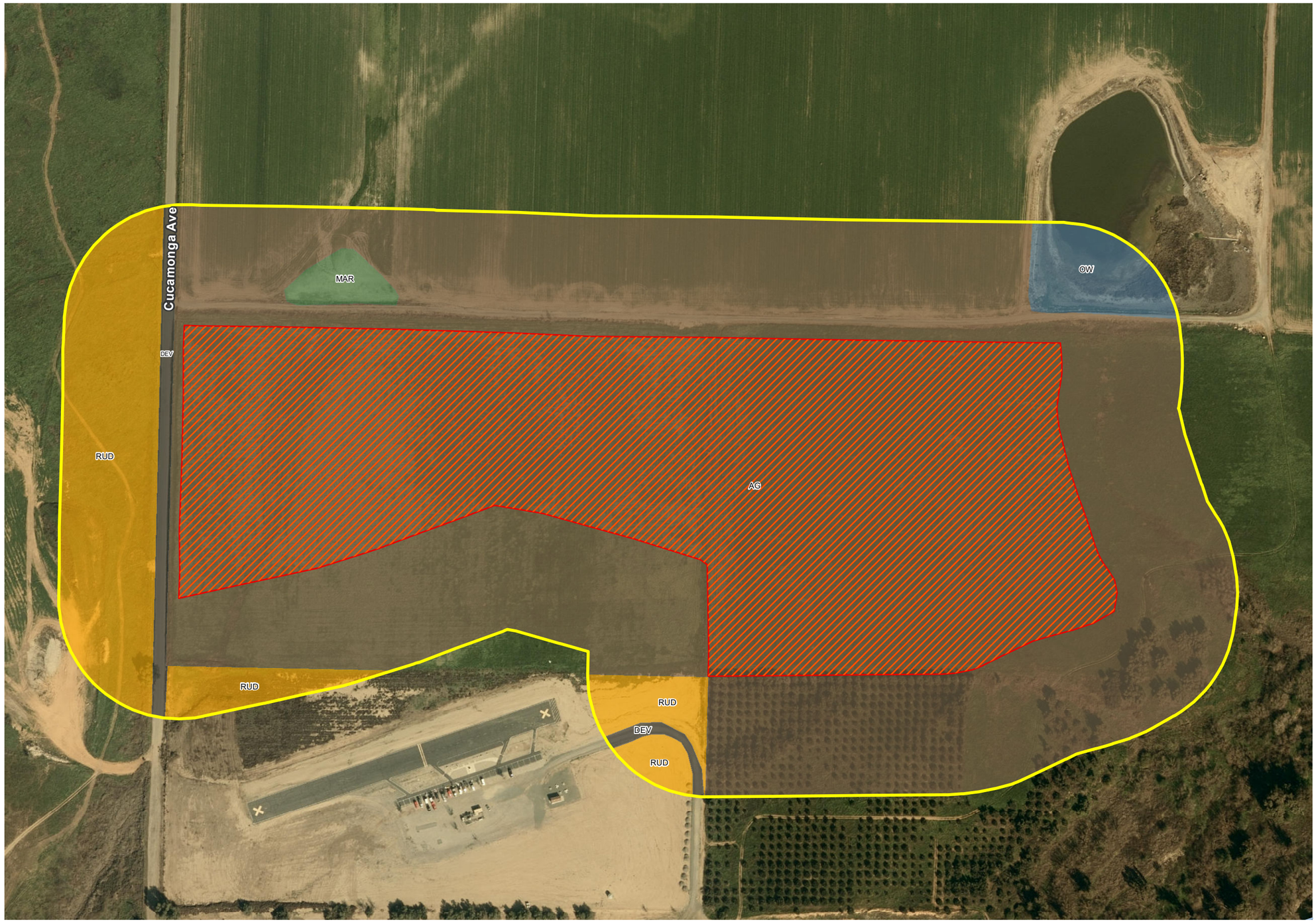

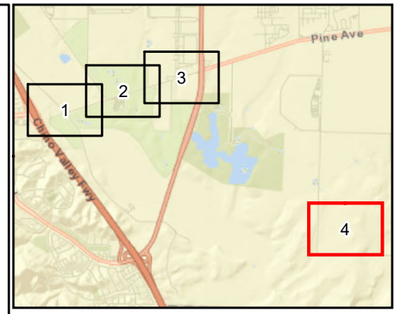

Legend

- Biological Study Area (300-ft Buffer)
- Permanent Impact
- AG - Agriculture
- MAR - Cattail Marsh
- DEV - Developed
- OW - Open Water
- RUD - Ruderal/Disturbed

Source: ESRI Streetmap

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Figure 8 - Sheet 4
Vegetation Communities and Project Impact Areas
Pine Avenue Extension Project

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Table 2.3-2. Riparian Vegetated Community

Vegetation Community	Project Impact Area		
	Permanent Direct (acres)	Permanent Indirect Shading Effects (acres)	Temporary Direct (acres)
Black Willow Thickets	3.56	0.53	0.55
Mulefat Thickets	0.16	0.04	0.09
Cattail Marsh	None	None	None
Total	3.72	0.54	0.64
Source: Natural Environment Study (February 2020)			

Permanent direct effects on 4.26 acres of riparian vegetation would occur during construction activities and includes the entire area proposed for grading and vegetation removal, placement of fill in the Pine Avenue project site for the access ramp to SR-71, and new access roads and ramps. This includes 0.54 acre of existing riparian vegetation that would be permanently shaded once construction of the new Chino Creek Bridge is completed. Shading from the new Chino Creek Bridge is expected to permanently degrade the riparian habitat under the bridge and eliminate the current riparian canopy. The habitat degradation may affect wildlife use for nesting or foraging (e.g., least Bell's vireo), or wildlife movement.

Temporary direct impacts on 0.64 acre of riparian habitat will include temporary work areas during construction, equipment staging, and construction access. All temporarily affected areas will be returned to their original condition after construction is completed.

There is also a potential for temporary indirect effects to occur on riparian vegetation adjacent to the PIA during construction, including increased dust deposition on adjacent riparian vegetation and waterways, chemical spills, increased fire risk, introduction and spread of invasive species, increased sedimentation, and littering.

Construction of the proposed project would also result in a temporal loss of the functions and values of the riparian habitat, which currently supports numerous common and special-status species. It is estimated the temporary loss of these functions and values would extend for up to 5 years after construction activities have been completed as a result of the time required for restoration efforts.

Once construction is completed, the operation of Pine Avenue would have potential indirect effects over the long term in the form of habitat degradation from shoulder maintenance, increased risk of fire/fuel reduction, litter, and noise, among other risks. These risks would be a result of increase in human presence and vehicles from the improved roadway.

The avoidance and minimization measures BIO-1 through BIO-9 would ensure that indirect effects on riparian habitat would be reduced or eliminated. Furthermore, compensation for the permanent loss of 3.72 acres of native riparian vegetation will occur at a minimum 3:1 ratio through a combination of one or more of the following: on-site enhancement, re-establishment, and/or creation; payment into an in-lieu fee program (such as the Riverside-Corona Resource

Conservation District [RCRCD] in-lieu fee program), fee payment to other approved mitigation providers; off-site permittee-responsible mitigation; and/or other off-site mitigation within the Prado Basin or Santa Ana watershed (BIO-10). This compensation will be coordinated with aquatic permitting and the CESA/FESA take permits. Areas that are temporarily affected will be re-contoured to pre-project elevations, wherever possible, and restored to pre-existing vegetation communities in accordance with the Habitat Mitigation and Monitoring Plan (HMMP), as further described in BIO-11.

Coast Live Oak Woodland

Coast Live Oak Woodlands occurred in only one small stand at the far eastern end of the Pine Avenue site near the intersection of Pine Avenue and Fern Avenue. The coast live oak trees are likely ornamental because they are associated with an agricultural homestead that was removed several years ago. The coast live oak trees provide minimal value to wildlife in the form of nesting and foraging habitat. With implementation of the project, the coast live oak woodland on the south side of Pine Avenue would be removed during construction. As a result, 0.1 acre of coast live oak woodland will be permanently impacted. Prior to removal of coast live oak woodland, preconstruction nesting bird surveys would be necessary as included in measure BIO-9. Furthermore, in accordance with the City of Chino Zoning Code Design Standards (Municipal Code 20.19.040), oak trees with trunks more than 8 inches diameter at breast height (dbh) will be replaced as included in measures BIO-11 and BIO-12.

Wildlife Corridors/Linkages

The project proposes to rebuild and extend Pine Ave through an area where the existing road is closed to public use and where a wide variety of wildlife and their habitats currently exist. The new roadway and extension will impose a substantial barrier between areas of existing habitat located adjacent to Pine Avenue. The new roadway will involve the addition of new embankments, roadways, and intersections and will have direct impacts, such as permanent and temporary loss of habitats, habitat fragmentation, increased vehicular traffic resulting in increased noise and disturbances, and increased risk of wildlife-vehicle collisions. These all pose a safety hazard to both wildlife and humans. Indirect impacts may include introduction of littering, roadway pollution, invasive plant species spread and introductions, edge effects, wildlife habitat avoidance, and increased risk of fires.

The proposed Chino Creek Bridge has been preliminarily designed to be approximately 15 feet above the creek (between the creek and bottom of bridge deck) and approximately 500 feet long. This height and bridge length will allow for permeability of all groups of wildlife species through the riparian corridor including fish, reptiles, amphibians, birds, and large mammals such as mule deer. However, the existing mature riparian canopy is taller than 15 feet, and once the adjacent habitat is restored post-construction, will likely result in an adjacent riparian canopy taller than the proposed bridge. This will introduce potential for aerial species such as birds (including least Bell's vireo) and bats to be struck by vehicles when passing over the bridge while moving between adjacent areas of riparian habitat.

West of the proposed Chino Creek Bridge between Chino Creek and Pomona Rincon Road, the project proposes a series of five, 12-foot-wide by 5-foot-tall RCB culverts. These culverts may facilitate movement of various small- to medium-sized wildlife species between the north and south sides of the Pine Avenue roadway. However, if design features such as energy dissipaters

or rip-rap are situated in or immediately outside of the culverts, this may impede wildlife movement. In addition, the presence of water in the culverts may preclude use by some species. Minor design considerations at the culvert locations (e.g., minimizing energy dissipaters/rip-rap features) would facilitate wildlife movement and permeability through the project area. The current design has rip-rap at some of the culverts, but not all; therefore, although the culverts could facilitate some small-sized wildlife movement, their primary purpose is for flood control within the flood plain of Chino Creek. The Chino Creek Bridge is specifically designed to facilitate wildlife movement.

Implementation of measures BIO-1 through BIO-9 would reduce or remove impacts to wildlife that move through the Pine Avenue site during construction and the site is anticipated to be open to wildlife movement during construction depending on specific work activities and sequencing. The Chino Creek Bridge will also be designed to facilitate wildlife movement (BIO-24).

No-Build Alternative

If this project is not constructed, this project will not cause any impacts on vegetation communities, including depleted natural communities/habitats of concern.

2.3.1.3 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following avoidance and minimization measures will be implemented to minimize effects during construction. In addition, measure BIO-17 in Section 2.3.4.4 and measures CM-22 and CM-23 in Section 2.3.5.4 will be implemented to reduce impacts on aerial species at Chino Creek Bridge.

BIO-1: Construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the PIA and designated staging areas or routes of travel. The construction area(s) will be the minimal area necessary to complete the proposed project and will be specified in the construction plans. Highly visible barriers (such as orange construction fencing) will be installed around all riparian and sensitive habitats adjacent to the PIA, as directed by the lead biologist, to designate Environmentally Sensitive Areas (ESAs) prior to the initiation of construction activities. The ESA will be maintained until the completion of all construction activities. Installation of the ESA fencing shall follow all requirements stated in Conservation Measure 8 (CM-8) of the Biological Opinion.

BIO-2: A biological monitor will be present during construction activities for the duration of clearing and grubbing for the proposed project to ensure that practicable measures are being employed and avoid incidental disturbance of habitat and species of concern outside the project footprint. ESA fencing (BIO-1) will be monitored and maintained at a frequency necessary to ensure its effectiveness. Ongoing monitoring and reporting will occur for the duration of the construction activity to ensure implementation of best management practices (BMPs).

BIO-3: All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances will occur in developed or designated non-sensitive upland habitat areas. The designated upland areas will be located to prevent runoff from entering any drainages, wetlands, or waterways.

BIO-4: Fire suppression equipment, including extinguishers, shovels, and water tankers, will be available onsite whenever construction occurs during the fire season (as determined by the San Bernardino County fire departments). Activities that may produce sparks, including welding or grinding, will use protective gear to reduce fire risks, such as shields and protective mats.

BIO-5: Dust control measures will be implemented during construction to reduce excessive dust emissions. Dust control measures may include wetting work areas regularly, the use of soil binders on dirt roads, and wetting or covering stockpiles.

BIO-6: During construction, areas within the PIA will be kept free of exotic weeds throughout the duration of the project. Exotic plant species will be properly handled to prevent sprouting or regrowth onsite. Construction equipment will be cleaned of mud or other debris prior to mobilizing and before leaving the site to reduce the potential spread of invasive plants and/or seeds. No cleaning of construction equipment will occur within 200-feet of ESA fencing or waterways.

BIO-7: A storm water and pollution prevention plan (SWPPP) and a soil erosion and sedimentation plan will be developed prior to construction to minimize erosion and identify specific pollution prevention measures that will eliminate or control potential point and nonpoint pollution sources onsite during and following the project construction phase. The SWPPP will identify specific best management practices (BMPs) to be implemented during project construction to avoid causing or contributing to any water quality standard exceedances. In addition, the SWPPP will contain provisions for changes to the plan such as alternative mechanisms, if necessary, during project design and/or construction to achieve the stated goals and performance standards.

BIO-8: Removal of riparian vegetation, including tree trimming, will be avoided from March 1 to September 15, to ensure no impacts on least Bell's vireo. If full avoidance is not feasible, BIO-9 will be implemented.

BIO-9: A Nesting Bird Management Plan (NBMP) will be prepared to provide a comprehensive approach to addressing nesting birds prior to the commencement of construction phases. It will include, at a minimum, the following items:

a) Project biologist and monitoring biologist qualifications.

b) Methods for preconstruction surveys for nesting birds protected under the MBTA and California Fish and Game Code, which will be performed prior to the start of all project phases during the bird breeding season. Preconstruction nesting bird survey requirements may be superseded by the Streambed Alteration Agreement conditions.

c) Methods for addressing nesting birds, raptors, and colonial nesting birds (e.g., swallows), including avoidance buffers; avoidance measures to reduce disturbances to active nests; and deterrent methods.

d) Reporting requirements.

This NBMP will be coordinated with and submitted for review by CDFW.

BIO-10: The permanent removal of riparian vegetation suitable for least Bell's vireo will be replaced at minimum 3:1, with compensation occurring as creation, enhancement, and/or restoration. The compensation can occur through a combination one or more of the following: on-site enhancement, re-establishment, and/or creation; fee payment to other approved mitigation providers; off-site permittee-responsible mitigation; and/or other off-site mitigation within the Prado Basin or Santa Ana watershed. For all riparian habitat that would be temporarily removed during construction, restoration would occur on- or off-site at a 2:1 ratio through enhancement, re-establishment, and/or creation. The compensation for occupied least Bell's vireo habitat should be coordinated with aquatic permitting mitigation requirements (see to BIO-14).

BIO-11 For any areas that will be restored on-site, a Habitat Mitigation and Monitoring Plan (HMMP) will be prepared in accordance with requirements of the USACE, RWQCB, and CDFW. The HMMP will include all of the required components outlined by these agencies, including but not limited to, a project description, goal of the mitigation, mitigation site, implementation plan, monitoring plan, completion of mitigation/success criteria, and contingency measures. The HMMP will address the on-site restoration of temporary impact areas and compensatory mitigation at offsite areas to mitigate for temporal losses and permanent impacts. The HMMP will include a five-year maintenance and monitoring period to ensure that restoration performance standards and final success criteria measures are met, as described in the HMMP and Conservation Measures included in the Biological Opinion (e.g., container plant survival will be 80 percent of the initial plantings for the first 5 years, evidence of natural recruitment, no artificial watering for at least two years).

BIO-12 Prior to the start of construction, a certified arborist will measure the diameter at breast height (dbh) of the two oak trees within the coast live oak woodland stand south of Pine Avenue. A report will be prepared by the arborist to document the health and viability of the tree and provide recommendations. If the dbh of oak trees is greater than 8 inches, then compensation will apply and oaks will be replaced at ratios as specified in the City of Chino Zoning Ordinance Landscape Design Standards (Municipal Code § 20.19.040):

Trunk Diameter of Tree to be Removed (DBH)	Number of Replacement Trees	Minimum Size of Replacement Tree*
8-10"	2	24" box
10"-14"	2	36" box
15"-29"	3	48" box
>30"	2	60" box
Source: Natural Environment Study (February 2020) Note: All replacement trees will be coast live oak species.		

Replacement of oak trees will occur on-site, however if this is not feasible, an offsite location may be used with approval from the Director of Community Development for the City of Chino. The oak trees must meet success criteria that will be integrated into the HMMP (BIO-11). If oak trees removed from the Pine Avenue project site are less than 8-inches dbh, no replacement is required.

BIO-24: The Chino Creek Bridge shall be designed to accommodate wildlife movement through the project area and will include the following:

The proposed Chino Creek Bridge height shall be at a minimum of 15 feet above the creek invert (between the low-flow channel and bottom of bridge deck) to accommodate large mammal movement and minimally maintain vegetative canopy connectivity and line-of-sight in order to facilitate connectivity for a wide variety of species.

The bridge undercrossing at Chino Creek will contain at least one dry passage, such as a dry shelf, ledge, path, for species movement during average flood events. Project design of dry passages should reflect guidelines by Federal Highways (Clevenger and Huijser 2011) or Caltrans (Meese et al. 2009).

The bridge undercrossing at Chino Creek will contain native earthen bottom and shall not contain obstructions to wildlife movement. Structures such as energy dissipaters and rip-rap, if used, shall be implemented in a manner that does not obstruct movement of wildlife through the structure. For example, areas used for dry passage should not contain rip-rap. Dry pathways should be accessible leading up to and across the entire undercrossing without obstruction by rip-rap or other materials.

2.3.2 Wetlands and Other Waters

2.3.2.1 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 Clean Water Act (CWA) (33 United States Code [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. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark (OHWM), in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

The 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.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA) 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 Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 11990 states that a federal agency, such as FHWA and/or the Department, 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 State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCBs) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the 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 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. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) 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 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. Please see the Water Quality section for more details.

2.3.2.2 AFFECTED ENVIRONMENT

Information used in this section is based on the approved Natural Environment Study (December 2020) and Jurisdictional Delineation (December 2020) prepared for the project.

Both Waters of the U.S. (WoUS) and state streambeds are present within the jurisdictional survey area (JSA). Within the JSA, 12 features potentially subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE)/Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW) were delineated. Five of the features evaluated in this delineation had areas that met the wetland criteria for USACE jurisdictional wetlands. All USACE jurisdictional features are subject to state jurisdiction. Eight of the features evaluated in this delineation supported riparian habitat. The table below summarizes the total of jurisdictional waters within the JSA. Also refer to Figure 9 for USACE/RWQCB Jurisdictional Results and Figure 10 for CDFW Jurisdictional Results.

Table 2.3-3. Summary of USACE, RWQCB, and CDFW Jurisdictional Resources

	USACE/RWQCB		CDFW	
Feature Type	Non-Wetland WoUS (acres)	Wetland WoUS (acres)	Unvegetated Streambed (acres)	Riparian (acres)
Feature 1	0.028	---	0.038	0.551
Feature 2	4.749	2.160	2.216	5.987
Feature 3	0.203	---	0.159	0.427
Feature 4	0.135	---	0.293	0.157
Feature 5 – Chino Creek	1.129	0.061	0.090	3.524
Feature 6	0.097	0.044	0.154	0.132
Feature 7	0.001	---	0.003	---
Feature 8	0.008	---	0.017	---
Feature 9	0.003	---	0.007	---
Feature 10	0.543	---	0.675	---
Feature 11	0.043	0.420	0.043	0.466
Feature 12	0.037	0.010	0.049	0.022
Total	6.976	2.695	3.744	11.266
Source: Natural Environment Study (February 2020)				

As shown in the table above, there is approximately 6.976 acres of non-wetland WoUS and 2.695 acres of wetland WoUS potentially subject to the jurisdiction of USACE and RWQCB under the CWA within the JSA. Additionally, approximately 3.744 acres of unvegetated streambed, and 11.266 acres of associated riparian vegetation subject to the jurisdiction of CDFW under Section 1600 of the Fish and Game Code were mapped within the JSA. A summary description of each feature from west to east is provided below:

Feature 1—Feature 1 is an unnamed, linear, earthen feature that conveys flows underneath a large berm between a small basin (Feature 2) and a larger perennially ponded basin located north of Feature 1. The vegetation communities associated with Feature 1 consist of Black Willow Thicket and Upland Mustards at the downstream end. Feature 1 is located at the outer limits of

the Prado Basin. When Chino Creek overflows due to seasonal rain conditions or when upstream releases occur, the reservoir north of Feature 1 is thought to fill and overflow south into Feature 2. During water releases of Prado Dam, it is thought that flows will recede north along Feature 1 and water would settle in the basin to the north. Therefore, Feature 1 is thought to have flow in both directions at certain points in the year.

Feature 2—Feature 2 consists of an earthen bed and bank basin that captures overflows from Chino Creek (Feature 5) and another basin to the north (Feature 1). Feature 2 is depicted at the outer limits of the Prado Basin. The basin is connected to Chino Creek by an outflow channel (Feature 3) that flows from the northwest corner of the intersection of Pine Avenue and Fairfield Ranch Road/Pomona Rincon Road along the north side of Pine Avenue to Chino Creek. The basin is connected to Feature 1 to the northwest via a large box culvert. Feature 2 is vegetated with 2.160 acres of a mosaic of Black Willow Thicket, Salt Grass Flats, Tamarisk Thicket, Mulefat Thicket, and Perennial Pepper Weed Patches. Wetlands are present within Feature 2.

Feature 3—Feature 3 consists of an earthen ditch on the north side of Pine Avenue that conveys flows northeast from Feature 2 via a culvert to Chino Creek (Feature 5). Feature 3 is vegetated with sporadic patches of Black Willow Thicket, Perennial Pepper Weed Patches, and Ruderal/Disturbed areas.

Feature 4—Feature 4 consists of an earthen ditch that conveys flows northeast along the south side of Pine Avenue to Chino Creek (Feature 5). It appears that Feature 4 collects overflow from Feature 3 located north of Feature 4 as well as surface flows from the El Prado Golf Course located to the south of the feature. Feature 4 is vegetated with sporadic patches of Black Willow Thicket and Ruderal/Disturbed areas.

Feature 5 (Chino Creek)—Chino Creek is a perennial earthen creek that conveys flows from north to south through the JSA into Prado Basin. Chino Creek is depicted as an intermittent blue-line feature on the USGS Prado Dam Topographic Map. Prior to the winter of 2012/2013, the creek passed under Pine Avenue via two large culverts, however 2012/2013 storm flows compromised the culverts and eventually eroded the entire creek crossing. Presently there remains large concrete blocks and loose rock throughout the creek crossing. Vegetation associated with Chino Creek is comprised of Black Willow Thicket and Mulefat Thicket. Portions of Chino Creek contain wetlands (0.061 acre).

Feature 6—Feature 6 is a perennial creek that conveys flows north to south through the JSA towards Prado Basin. Feature 6 is depicted as an unnamed intermittent blue-line feature on the Prado Dam USGS topographic map and is referred to in this report as “Cypress Channel”. Within the JSA, Feature 6 crosses underneath Pine Avenue via a large culvert, and is also culverted under a golf cart path to the north of Pine Avenue and under a fairway on the El Prado Golf Course. Vegetation associated with Feature 6 is comprised of Black Willow Thicket; however, a majority of the feature is mapped on Parklands due to activities associated with golf course maintenance. A portion of Feature 6 has been assumed wetlands (0.044 acre) based on hydrology, which is due to soils and vegetation maintenance removal within the channel.

Features 7, 8 and 9—Features 7, 8, and 9 are small, earthen, ephemeral roadside drainage ditches that convey flows southwest towards Feature 6. Features 7 and 8 convey flows along the north

side of Pine Avenue and Feature 9 conveys flows along the south side of Pine Avenue. Features 7, 8 and 9 are mostly unvegetated and are mapped within areas classified as Parklands.

Feature 10—Feature 10 consists of an earthen basin on the north side of Pine Avenue that appears to collect nuisance water from the adjacent Yokohama Tire warehouse. The basin was observed holding water during a reconnaissance visit conducted in the spring of 2017. The vegetation within the basin is classified as Ruderal/Disturbed.

Feature 11—Feature 11 is located on the western side of the Borrow Site BSA and consists of a small earthen basin located north of the dirt road that runs along the north side of the borrow site and a linear earthen stream feature that conveys water from the basin south towards Prado Basin via a culvert under the dirt road. The basin on the north side of the access road appears man-made. The basin located north of the dirt access road is vegetated primarily with Cattail Marsh, whereas the portion of Feature 11 south of the access road is vegetated with Agricultural lands, a portion of which meets the wetlands criteria. There is a total 0.420 acre of wetlands associated with Feature 11.

Feature 12 - Feature 12 is an earthen basin located north of the access road that borders the northeast corner of the Borrow Site JSA. The basin appears to be constructed and is vegetated primarily with Cattail Marsh and is comprised of 0.010 acre of wetlands.

2.3.2.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Permanent impacts are expected to occur on up to eight of the features delineated in the JSA. The project would temporarily affect 0.279 acres of non-wetland WoUS and 0.260 acre of wetland WoUS, as shown in the table below (please also refer to Figure 9, USACE/RWQCB Jurisdictional Results and Figure 10, CDFW Jurisdictional Results). It will permanently affect 1.025 acres of non-wetland WoUS and 2.921 acres of wetland WoUS subject to the jurisdiction of USACE and RWQCB under the CWA. In addition, 0.014 acre of wetlands would be permanently shaded and expected to convert to non-wetland waters.

Table 2.3-4. Impacts on Potential USACE and RWQCB Jurisdiction

Feature ID	Permanent Impacts (Acres)		Permanent Shading Effects* (Acres)	Temporary Impacts (Acres)	
	Wetland	Non-wetland	Wetland	Wetland	Non-wetland
Feature 1	--	--	--	--	--
Feature 2	2.696	0.764	--	0.256	0.129
Feature 3	--	0.156	--	--	0.046
Feature 4	--	--	--	--	--
Feature 5 – Chino Creek	--	0.001	0.014	0.001	0.101
Feature 6	0.041	0.078	--	0.003	0.003

Feature ID	Permanent Impacts (Acres)		Permanent Shading Effects* (Acres)	Temporary Impacts (Acres)	
	Wetland	Non-wetland	Wetland	Wetland	Non-wetland
Feature 7	--	--	--	--	--
Feature 8	0.184	0.023	--	--	--
Feature 9	--	0.003	--	--	--
Feature 10	--	--	--	--	--
Feature 11	--	--	--	--	--
Feature 12	--	--	--	--	--
Total	2.921	1.025	0.014	0.260	0.279

* Permanent shading would only occur on wetlands where the new Chino Creek Bridge will be placed. Permanently shaded wetland waters would convert to non-wetland waters; therefore, there would be a loss of 0.014 acre of wetland waters from Chino Creek but no net loss of jurisdictional waters from shading effects.

Source: Natural Environment Study (February 2020)

There is potential for permanent effects to occur on wetlands due to shading. The new Chino Creek bridge would permanently shade existing wetlands and this direct effect is expected to result in a conversion of jurisdictional wetland waters to non-wetlands. Lack of sunlight under the new bridge would reduce abundance of, or preclude, hydrophytic vegetation from regrowing under the bridge once construction is completed. Although there may be a 0.014-acre loss of wetland waters within the Chino Creek, the 0.014-acre wetland would be converted to non-wetlands.

Additionally, as shown in the table below, the project will temporarily affect 0.153 acre of unvegetated streambed and 0.645 acre of associated riparian vegetation, and permanently affect 0.882 acre of unvegetated streambed and 4.133 acres of associated riparian vegetation subject to the jurisdiction of CDFW under Section 1602 of the Fish and Game Code were mapped within the JSA. There will be 0.574 acre of existing riparian vegetation that would be permanently shaded by the new Chino Creek bridge. Although this direct effect would only occur during construction, it is expected that due to the east-west orientation of the bridge, there would be a lack or reduction of sunlight precluding riparian vegetation from regrowing to the original conditions.

Table 2.3-5. Impacts on Potential CDFW Jurisdiction

Feature ID	**Permanent Impacts (Acres)**		**Permanent Shading Effects* (Acres)**	**Temporary Impacts (Acres)**	
	Riparian	**State Streambed**	**Riparian**	**Riparian**	**State Streambed**
Feature 1	0.001	--	--	0.022	--
Feature 2	3.403	0.576	--	0.344	0.138
Feature 3	0.309	0.151	--	0.118	0.007
Feature 4	0.009	--	--	0.002	--
Feature 5 – Chino Creek	0.097	0.033	0.574	0.159	--
Feature 6	0.129	0.095	--	0.003	0.008

Feature ID	Permanent Impacts (Acres)		Permanent Shading Effects* (Acres)	Temporary Impacts (Acres)	
	Riparian	State Streambed	Riparian	Riparian	State Streambed
Feature 7	--	--	--	--	--
Feature 8	0.185	0.027	--	--	--
Feature 9	--	--	--	--	--
Feature 10	--	--	--	--	--
Feature 11	--	--	--	--	--
Feature 12	--	--	--	--	--
Total	4.133	0.882	0.574	0.645	0.153

* Permanent shading on riparian vegetation would only occur where the new Chino Creek Bridge will be placed.
Source: Natural Environment Study (February 2020)

During construction, there is also a potential for temporary indirect effects to occur on jurisdictional waters and/or wetlands that occur downstream of the PIA. Potential indirect effects may include chemical spills, introduction and spread of invasive species, increased sedimentation, and litter. In addition, dust generated by construction equipment could settle on WoUS and CDFW riparian habitat. However, these potential indirect effects are expected to be greatly reduced or eliminated with implementation of measures BIO-1 through BIO-7 and BIO-13.

Once construction is completed, the operation of Pine Avenue would have potential indirect effects over the long term in the form of habitat degradation from shoulder maintenance, increased risk of fire/fuel reduction, litter, and noise, among other risks. These risks would stem from an increase in human presence and vehicles from the improved roadway.

No-Build Alternative

No construction activities would be undertaken, and no effects on aquatic resources would occur.

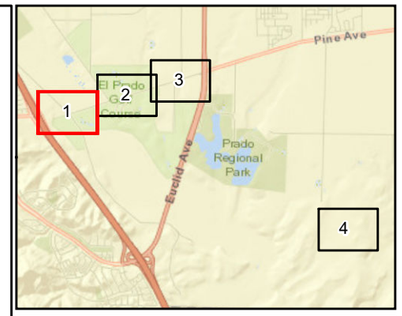
2.3.2.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following avoidance and minimization measures will be implemented to minimize effects during construction.

The implementation of avoidance and minimization measures WQ-1 and WQ-2 (Section 2.2.2.4), BIO-1 through BIO-7 (Section 2.3.1.3) and BIO-13 and BIO-14 below are intended to address indirect effects on jurisdictional waters. In addition, relevant permit conditions will be implemented.

BIO-13: Hydrologic connectivity within Chino Creek will be maintained throughout the duration of construction and no construction work is expected to occur within flowing portions of Chino Creek. Vegetation, debris, mud, silt, or other pollutants from construction activities will not be placed within the creek.

BIO-14: Compensation for permanent impacts on federal and state jurisdictional waters would occur through a combination of one of more of the following: onsite enhancement, re-establishment, and/or creation; payment into an in-lieu fee program (such as the RCRCD in-lieu fee program) or other approved mitigation provider; permittee responsible mitigation; and/or other off-site restoration/mitigation within the Prado Basin or Santa Ana watershed. Compensation for the permanent loss of USACE non-wetlands and state streambeds would occur at a minimum 2:1 ratio and for USACE wetlands and CDFW riparian habitat will occur at minimum 3:1 ratio. Temporary impacts on jurisdictional waters, wetlands, and state streambeds would occur on-site at 1:1. The mitigation for CDFW riparian habitat will take into consideration the mitigation proposed for impacts on least Bell's vireo (2:1 ratio) (**BIO-10**) so that this habitat resource is mitigated once.



Legend

- Jurisdictional Delineation Study Area (100-ft buffer)
- Permanent Impact
- Temporary Impact
- 2015 Bore #3 Study Area
- USACE/RWQCB Non-Wetland
- USACE/RWQCB Wetland
- Swale
- Sample Point (SP-#) - 2017
- Sample Point (SP-#) - 2015
- OHWM* Datasheet Location
- Photo Location (P#) - 2017
- Photo Location (P#) - 2015

* OHWM = Ordinary High Water Mark

Source: ESRI Streetmap

N

0 100 200 Feet

1:2,400

Figure 9 - Sheet 1
USACE/RWQCB Jurisdictional Results
Pine Avenue Extension Project

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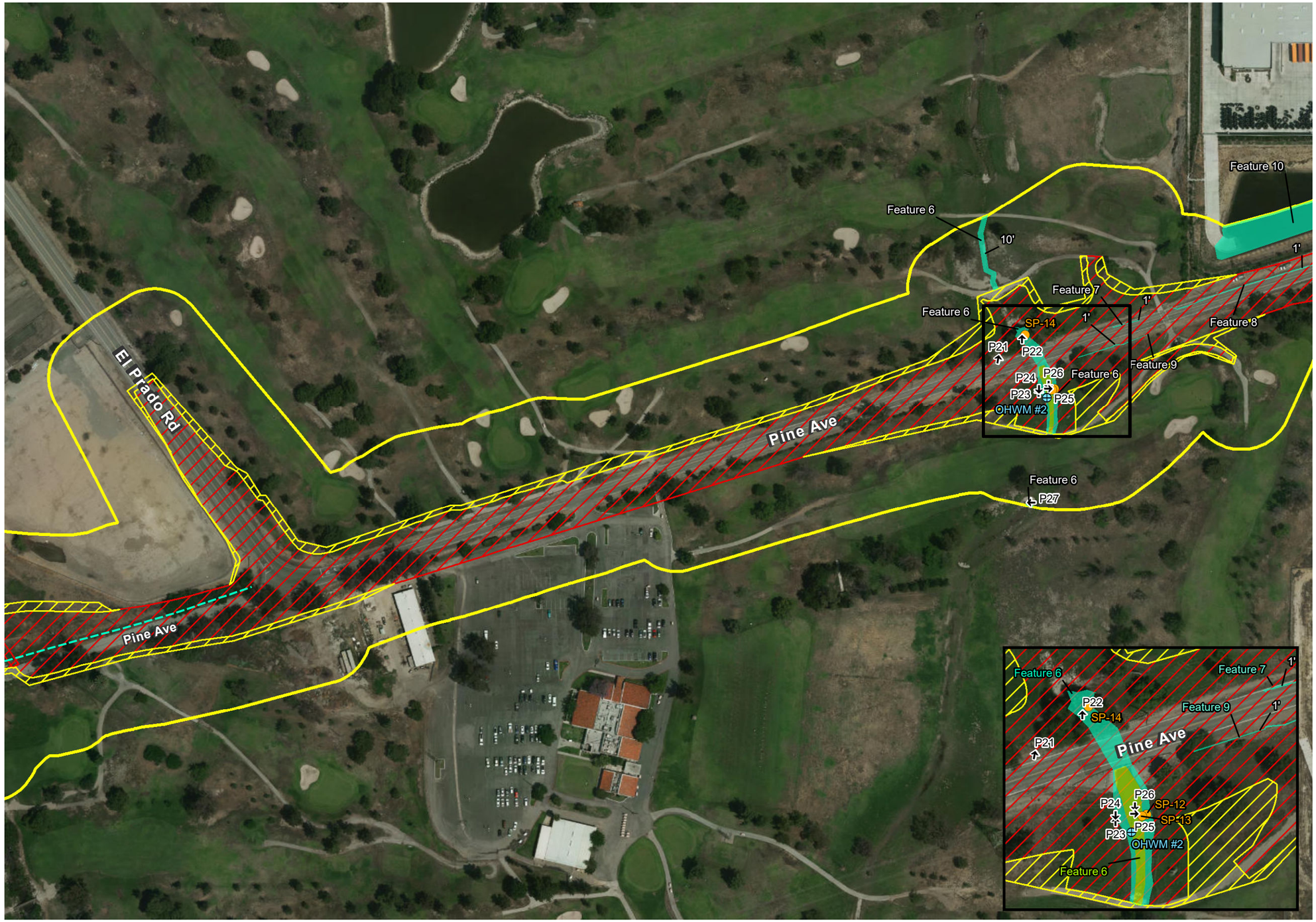

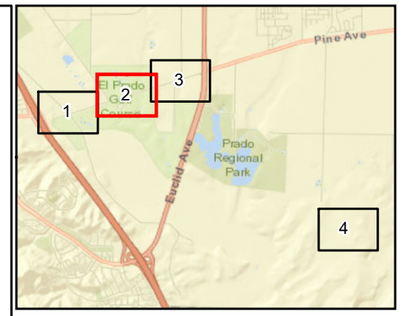

Legend

- Jurisdictional Delineation Study Area (100-ft buffer)
- Permanent Impact
- Temporary Impact
- 2015 Bore #3 Study Area
- USACE/RWQCB Non-Wetland
- USACE/RWQCB Wetland
- Swale
- Sample Point (SP-#) - 2017
- Sample Point (SP-#) - 2015
- OHWM* Datasheet Location
- Photo Location (P#) - 2017
- Photo Location (P#) - 2015

* OHWM = Ordinary High Water Mark

Source: ESRI Streetmap

N

0 100 200 Feet

1:2,400

Figure 9 - Sheet 2
USACE/RWQCB Jurisdictional Results
Pine Avenue Extension Project

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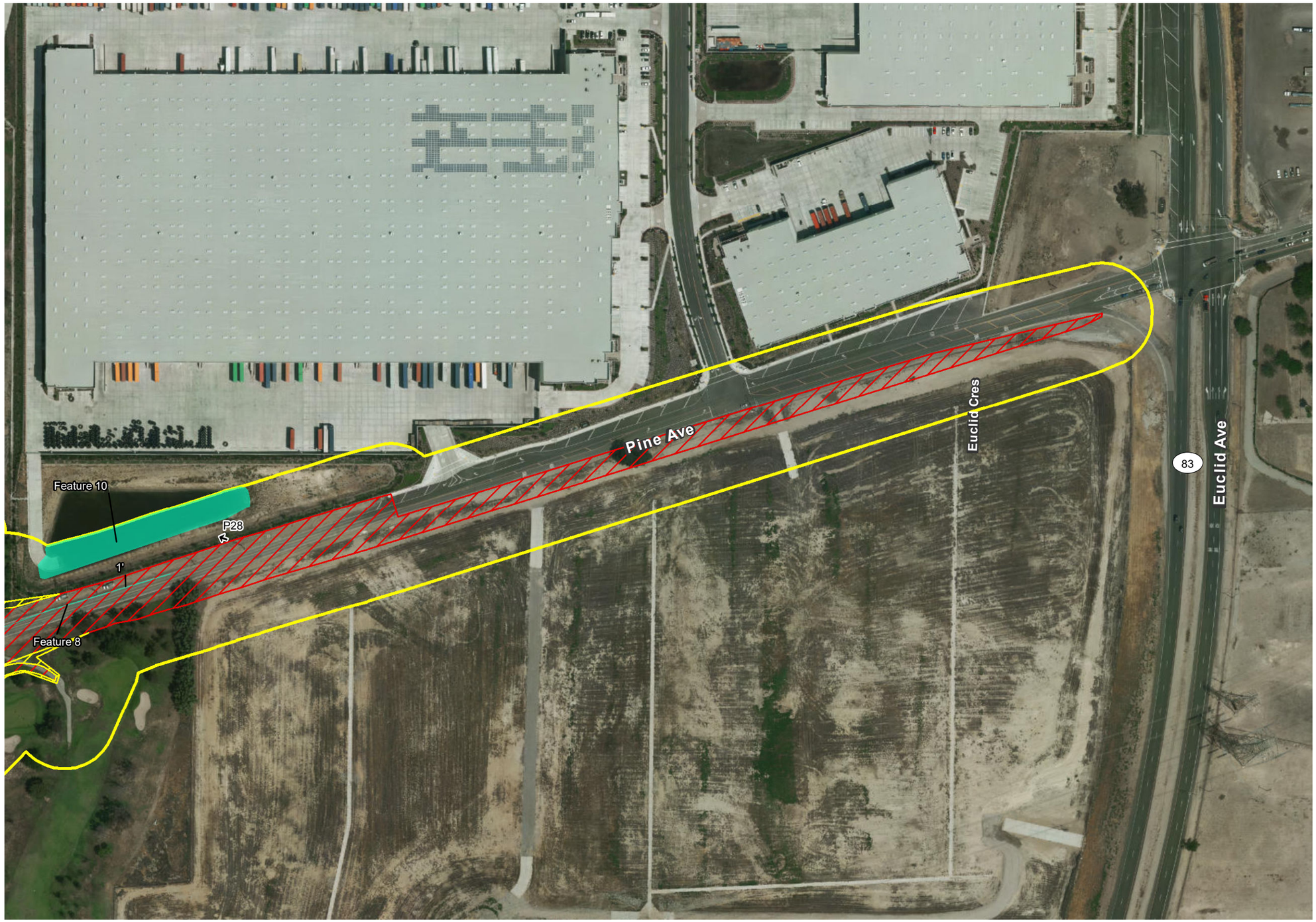

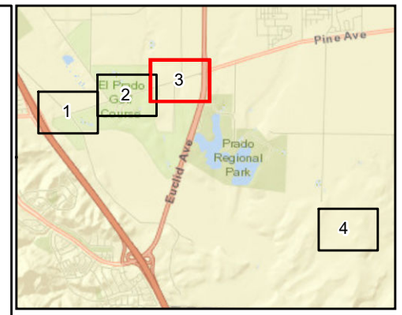

Legend

- Jurisdictional Delineation Study Area (100-ft buffer)
- Permanent Impact
- Temporary Impact
- 2015 Bore #3 Study Area
- USACE/RWQCB Non-Wetland
- USACE/RWQCB Wetland
- Swale
- Sample Point (SP-#) - 2017
- Sample Point (SP-#) - 2015
- OHWM* Datasheet Location
- Photo Location (P#) - 2017
- Photo Location (P#) - 2015

* OHWM = Ordinary High Water Mark

Source: ESRI Streetmap

N

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Figure 9 - Sheet 3
USACE/RWQCB Jurisdictional Results
Pine Avenue Extension Project

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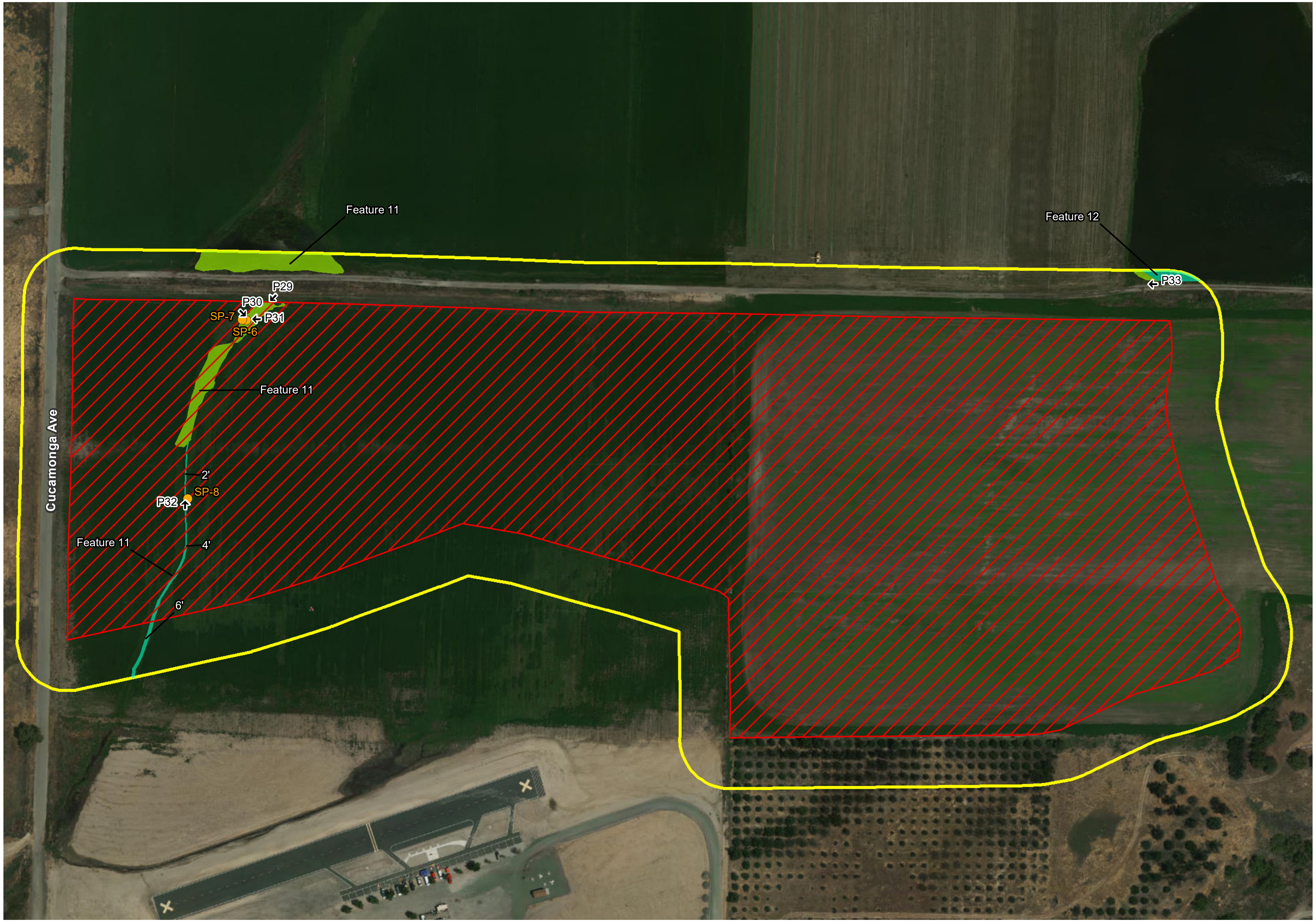

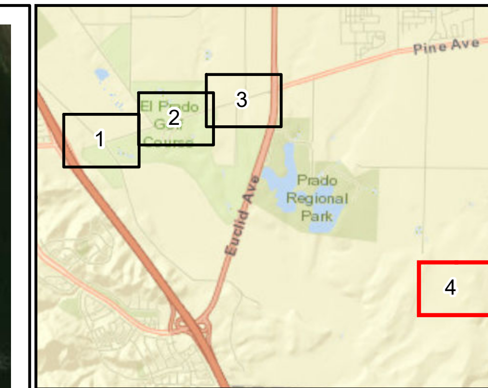

Legend

- Jurisdictional Delineation Study Area (100-ft buffer)
- Permanent Impact
- Temporary Impact
- 2015 Bore #3 Study Area
- USACE/RWQCB Non-Wetland
- USACE/RWQCB Wetland
- Swale
- Sample Point (SP-#) - 2017
- Sample Point (SP-#) - 2015
- OHWM* Datasheet Location
- Photo Location (P#) - 2017
- Photo Location (P#) - 2015

* OHWM = Ordinary High Water Mark

Source: ESRI Streetmap

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Figure 9- Sheet 4
USACE/RWQCB Jurisdictional Results
Pine Avenue Extension Project

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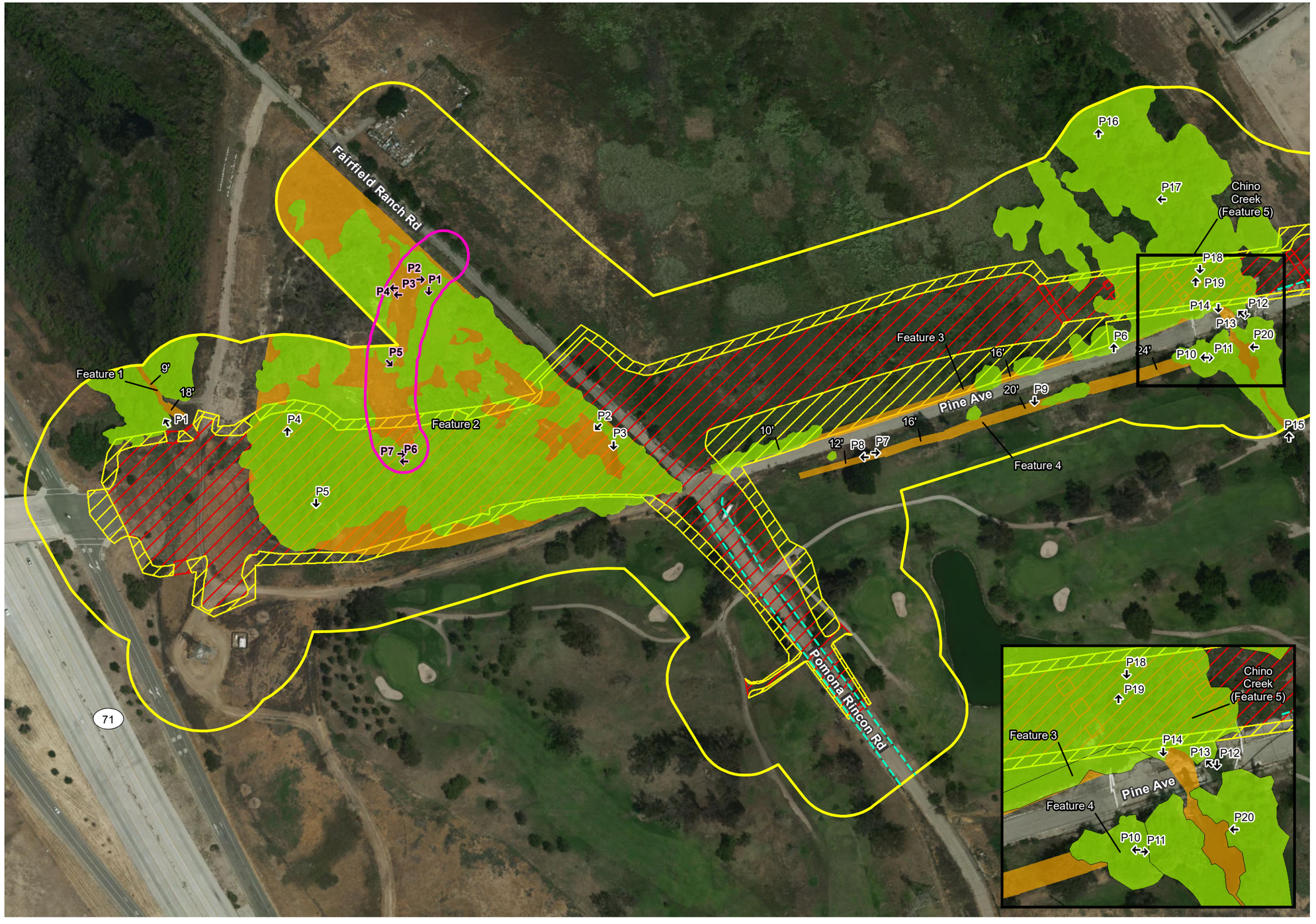

Figure 10- Sheet 1
CDFW Jurisdictional Results
Pine Avenue Extension Project

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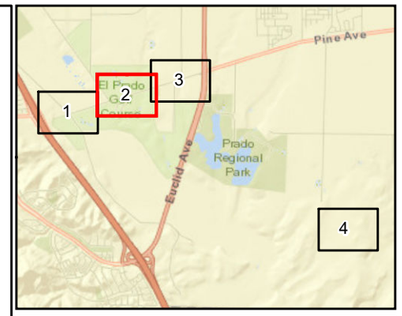

Legend

- Jurisdictional Delineation Study Area (100-ft buffer)
- Permanent Impact
- Temporary Impact
- 2015 Bore #3 Study Area
- CDFW Unvegetated Streambed
- CDFW Riparian
- Swale
- Photo Location (P#) - 2017
- Photo Location (P#) - 2015

Source: ESRI Streetmap

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0 100 200 Feet

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Figure 10 - Sheet 2
CDFW Jurisdictional Results
Pine Avenue Extension Project

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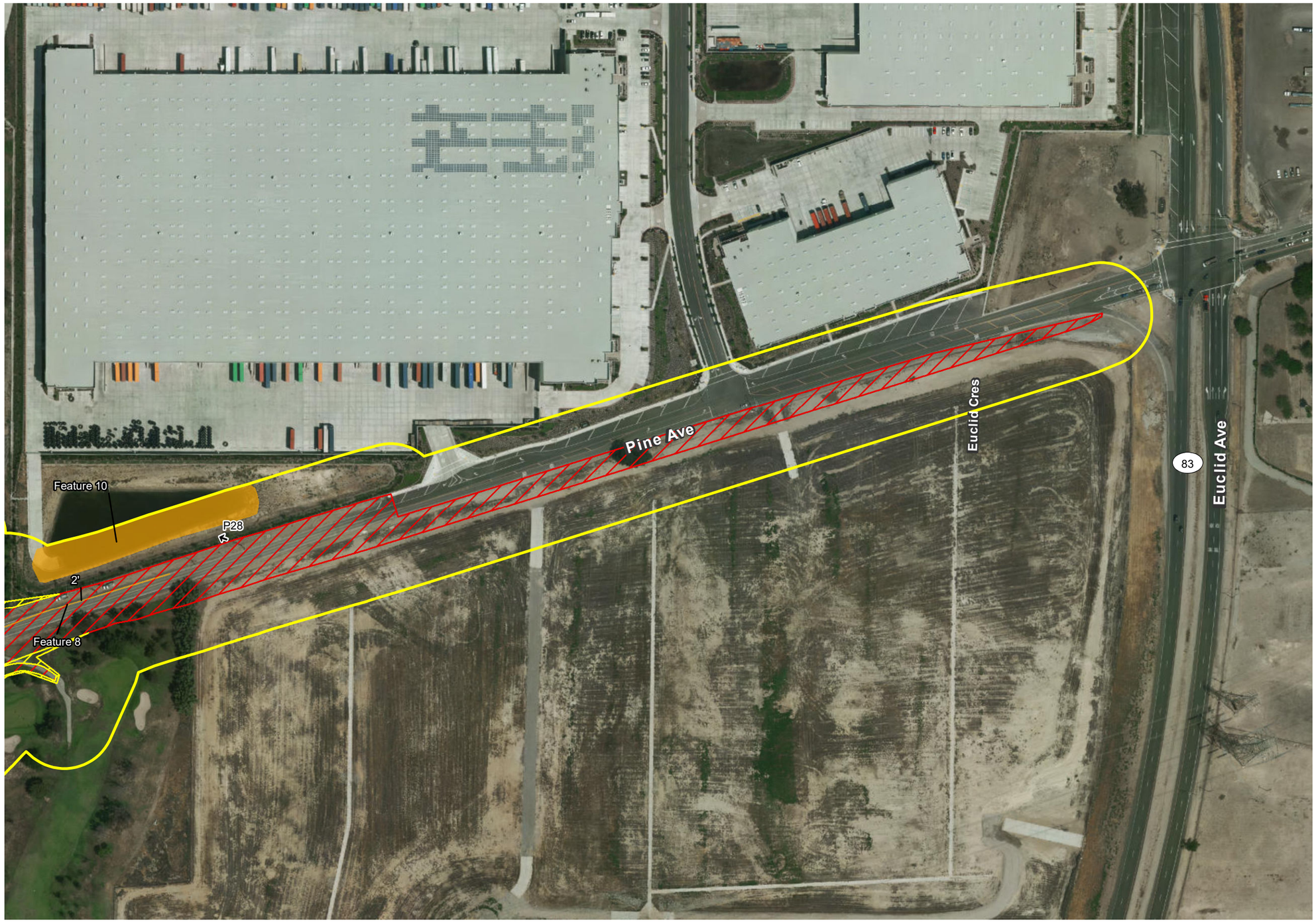

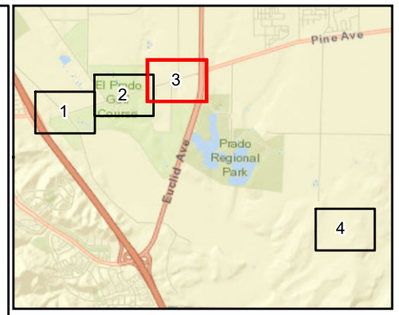

Legend

- Jurisdictional Delineation Study Area (100-ft buffer)
- Permanent Impact
- Temporary Impact
- 2015 Bore #3 Study Area
- CDFW Unvegetated Streambed
- CDFW Riparian
- Swale
- Photo Location (P#) - 2017
- Photo Location (P#) - 2015

Source: ESRI Streetmap

N

0 100 200 Feet

1:2,400

Figure 10- Sheet 3
CDFW Jurisdictional Results
Pine Avenue Extension Project

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Feature 11
Feature 12
P29
P30
P31
P32
P33
Feature 11
Feature 11
2'
4'
6'
Cucamonga Ave
Pine Ave
1
2
3
4
Prado Regional Park
Euclid Ave
Legend
Jurisdictional Delineation Study Area (100-ft buffer)
Permanent Impact
Temporary Impact
2015 Bore #3 Study Area
CDFW Unvegetated Streambed
CDFW Riparian
Swale
Photo Location (P#) - 2017
Photo Location (P#) - 2015
Source: ESRI Streetmap
N
0 100 200
Feet
1:2,400

Figure 10- Sheet 4
CDFW Jurisdictional Results
Pine Avenue Extension Project

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2.3.3 Plant Species

2.3.3.1 REGULATORY SETTING

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of 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) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species section (Section 2.3.5) in this document for detailed information about these species.

This section of the document discusses all other special-status plant species, including CDFW species of special concern and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), found at California Public Resources Code, Sections 21000-21177.

2.3.3.2 AFFECTED ENVIRONMENT

Information used in this section is based on the approved Natural Environment Study (December 2020).

Of the 57 special-status plant species that were analyzed for their potential to occur within the BSA, 15 were determined to have suitable habitat present within the BSA. Suitable habitat is present for the following species:

- Malibu baccharis (*Baccharis malibuensis*), a CRPR 1B.1 species
- Lucky Morning-glory (*Calystegia felix*) a CRPR 1B.1 species
- Southern tarplant (*Centromadia parryi* ssp. *australis*), a CRPR 1B.1 species
- Smooth tarplant (*Centromadia pungens* ssp. *laevis*), a CRPR 1B.1 species
- California saw-grass (*Cladium californicum*), a CRPR 2B.2 species
- Paniculate tarplant (*Deinandra paniculata*), a CRPR 4.2 species
- Many-stemmed dudleya (*Dudleya multicaulis*), a CRPR 1B.2 species
- Palmer's grapplinghook (*Harpagonella palmeri*), a CRPR 4.2 species

- Southern California black walnut (*Juglans californica*), a CRPR 4.2 species
- Ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*), a CRPR 4.2 species
- Fish's milkwort (*Polygala cornuta var. fishiae*), a CRPR 4.3 species
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*), a CRPR 2B.2 species
- Engelmann oak (*Quercus engelmanni*), a CRPR 4.2 species
- San Bernardino aster (*Symphyotrichum defoliatum*), a CRPR 1B.2 species
- Salt spring checkerbloom (*Sidalcea neomexicana*), a CRPR 2B.2 species.

Suitable habitat for the 15 non-listed special status plants listed above was found within Black Willow Thicket, Mulefat Thicket, Upland Mustards, Salt Grass Flats, and Cattail Marsh vegetation communities and areas with clayey soils. In most cases, habitat quality was considered low to moderate based on suitability of soils, current and historic site disturbances (i.e., mowing in agricultural fields), and frequency of inundation or flooding.

Focused rare plant surveys were performed during the growing season in 2012 and 2017 and none of the species were observed during either year. The 2012 focused survey occurred during a period of drought; however, due to the project's geographic location within the Prado Basin, the water table in the area was high because no water releases had occurred at Prado Dam. Although it was a drought year, there was still soil saturation present in the peak of the summer 2012 in a basin at the west end of the Pine Avenue project site and Chino Creek was flowing. Surveys conducted in the spring of 2017 took place in a historically high rainfall year, maximizing the potential for special-status species to have been observed, if present. None of the sensitive species were observed in either year and all 15 species are considered absent from the BSA.

2.3.3.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

All special-status plant species are considered absent from the BSA. The project is not expected to affect any special-status plant species as a result.

No-Build Alternative

No construction activities would be undertaken, and no effects on plant species would occur.

2.3.3.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

All special-status plant species are considered absent from the BSA. As such, no avoidance, minimization, and/or mitigation measures are required.

2.3.4 Animal Species

2.3.4.1 REGULATORY SETTING

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in the Threatened and Endangered Species Section 2.3.5, below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries Service candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600–1603 of the California Fish and Game Code
- Section 4150 and 4152 of the California Fish and Game Code

2.3.4.2 AFFECTED ENVIRONMENT

Information used in this section is based on the approved Natural Environment Study (December 2020).

Based on results of the surveys and records search conducted for the Natural Environment Study, 15 federally or state-listed wildlife species were analyzed. Of the 16 federally or state-listed wildlife species initially reviewed, three were determined to potentially occur within the Project BSA based on species requirements and Project BSA conditions: Santa Ana sucker (*Catostomus santaanae*), southwestern willow flycatcher (*Empidonax traillii extimus*), and least Bell's vireo (V*ireo bellii pusillus*). These three species are discussed in Section 2.3.5 Threatened and Endangered Species.

No suitable habitat is present within the BSA for San Diego fairy shrimp (*Branchinecta sandiegonensis*), Delhi sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*), steelhead – southern California Distinct Population Segment (DPS) (*Oncorhynchus mykiss irideus*), arroyo toad, coastal California gnatcatcher (*Polioptila californica californica*), California least tern (*Sternula antillarum browni*), San Bernardino Merriam's kangaroo rat (*Dipodomys merriami parvus*), and Stephens' kangaroo rat (*Dipodomys stephensi*). These species are not discussed further. The Borrow Site BSA does not provide suitable habitat for special-status animal species.

The following species are not expected to occur within the BSA due to marginal or no habitat, lack of recent records, and/or due to lack of detection during focused surveys for listed riparian birds: tricolored blackbird (*Agelaius tricolor*), California black rail (*Laterallus jamaicensis coturniculus*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). These species are not discussed further. This section discusses the results of surveys, critical habitat, avoidance and minimization efforts, project impacts, and cumulative impacts for listed wildlife species with a potential to occur in the Project BSA.

Arroyo Chub

Arroyo chub is a state species of special concern. The arroyo chub is a small fish found in coastal freshwater streams and rivers with sustained flows and emergent vegetation. Presence/absence surveys for native fish species were conducted in 2012 and 2017 within Chino Creek and Cypress Channel. The field survey was conducted along an approximately 328-foot reach upstream and downstream of the current Chino Creek culvert crossing of Pine Avenue and along a 164-foot upstream and 328-foot downstream section of Cypress Channel directly east of Chino Creek. Arroyo chub was not found during the 2012 and 2017 surveys. Chino Creek and Cypress Channel do not provide suitable habitat for this species, including sufficient shallows, gravel areas, moderate summer water temperatures, and lower exotic numbers. Nonnative exotic species dominate these waterways. Although native fish were historically present, the current conditions and anthropogenic effects within these waterways provide marginal opportunities for native fish occupation. This species is not expected to re-establish in this area under existing conditions.

Swainson's Hawk

Swainson's hawk (*Buteo swainsonii*) is a state threatened raptor species. Within California, it breeds primarily within central and northern California and forages over grasslands. There is a potential for Swainson's hawk to forage in the BSA, particularly over open lands and agricultural fields during the species migration. The BSA occurs outside of the species' breeding range.

White Tailed Kite

The white-tailed kite (*Elanus leucurus*) is a California fully protected species during nesting and is protected under the Migratory Bird Treaty Act (MBTA) and similar provisions of the California Fish and Game Code. This species often nests in dense, broad-leafed deciduous trees in riparian areas adjacent to open grasslands with an abundance of prey. A habitat evaluation for white-tailed kite was performed for the proposed project and suitable breeding habitat was present within 10.36 acres of the BSA within Black Willow Thicket, Hinds's Walnut and Related Stands. A pair of white-tailed kite were observed nesting within the Black Willow Thicket at Chino Creek near the northern edge of the BSA in 2017 and fledged two young during the course of the 2017 project survey work. The species was also observed flying over the BSA during numerous site visits.

Burrowing Owl
Burrowing owl is a California Species of Special Concern, and is protected under the MBTA and similar provisions of the California Fish and Game Code. Burrowing owl is found in various types of dry, open habitats that include, grasslands, agricultural lands, prairie, and deserts. An evaluation of the BSA, which consisted of the project footprint plus a 300-foot buffer (up to 500 feet visually), was performed to determine whether potentially suitable habitat for burrowing owl was present on a broad landscape level. Following the habitat assessment and burrow survey, four subsequent protocol surveys were conducted in 2012 from May to July, and then again in 2017 from March to July. Although there is suitable foraging habitat, no burrowing owls were observed within the BSA.

Other Special Status Birds
During biological investigations and focused studies, the following special-status species had the potential to occur within the BSA: northern harrier, golden eagle (*Aquila chrysaetos*), long-eared owl (*Asio otus*), yellow warbler, yellow-breasted chat, and vermillion flycatcher (*Pyrocephalus rubinus*). There were a number of yellow warbler and yellow-breasted chat documented nesting within the BSA during riparian bird focused surveys. Vermillion flycatcher was also observed foraging on the golf course and in riparian habitat along Chino Creek. There is suitable habitat for long-eared owl within the tree-dominated vegetation communities adjacent to and along Chino Creek and suitable foraging habitat within adjacent uplands. Long-eared owl was not documented during surveys.

Northern harrier and golden eagle would potentially occur year-round in the BSA for foraging. A northern harrier was observed foraging over agricultural fields in the BSA adjacent to the borrow site, however no suitable nesting habitat is present. There is no suitable nesting habitat in the BSA for either of these species, or the project occurs outside of the species' breeding range.

Special Status Reptiles
Of the ten special-status reptiles analyzed for their potential to occur within the BSA, four were determined to have suitable habitat present within the BSA: southwestern pond turtle (*Emys marmorata*), coastal whiptail (*Aspidoscelis tigris stegnegeri*), southern California legless lizard (*Anniella stebbinsi*), and two-striped garter snake (*Thamnophis hammondii*). Based on the habitat assessment conducted in 2012 and 2017, suitable habitat for all four special-status reptile species is present along Chino Creek. The potential for southwestern pond turtle to occur in the BSA is low due to few basking sites available and amount of exotic species and predators within Chino Creek. The potential is also low for two-striped garter snake within Chino Creek and Cypress

Channel due to the abundance of nonnative predatory species and anthropogenic disturbances in both areas. Suitable habitat for coastal whiptail and southern California legless lizard is present within riparian areas. No special-status reptile species were observed during any of the plant and wildlife surveys conducted for the project.

Special Status Bats
A number of special-status bat species have potential to occur within the project vicinity and include pallid bat (*Antrozous pallidus*), Mexican long-tongued bat (*Choeronycteris mexicana*), California western mastiff bat (*Eumops perotis californicus*), western yellow bat (*Lasiurus xanthinus*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*). All of these species are state species of special concern, and are protected under California Fish and Game Code Section 4150. A number of special-status bat species have potential to occur within the BSA and include pallid bat, Mexican long-tongued bat, California western mastiff bat, western yellow bat, and pocketed free-tailed bat. Pallid bats are found throughout the proposed project region roosting in crevices and hollows of bridges, buildings, trees, or snags. California western mastiff bat are present in the project region and may forage in the proposed project vicinity, though roosting habitat is lacking in the BSA and vicinity. Western yellow bats are tree-roosting bats and are commonly associated with riparian trees such as cottonwood, sycamores, oaks, and are closely associated with palm trees, and palm oases. Mexican long-tongued bat and pocketed free-tailed bat are rare visitors to the project region and the BSA lacks roosting habitat for these species; however, these species may forage within the BSA. In addition to providing suitable habitat for special-status bats, there is a potential for other non-special-status colonial bat species (i.e., Yuma bat [*Myotis yumanensis*] and Mexican free-tailed bats [*Tadarida brasiliensis*]) to occur within the local vicinity. Although these species are common within the region, colonial roost and maternity roost sites are biologically important resources for these species that are declining due to urban development and anthropogenic disturbances.

2.3.4.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Arroyo Chub
No direct effects are expected to occur on arroyo chub as this species was absent from the BSA. Dewatering or water diversion of Chino Creek is not expected to occur unless the project would include existing Pine Avenue work in the washed out area or if utility crossings need to be relocated across the creek; however, because this species is absent, there is no potential impact on native fish up- or downstream of the project. There is a potential for construction activities to have indirect effects on native fish habitat. Grading of slopes and removal of roadbed adjacent to Chino Creek may result in sediment input into the active channel. Chemical spills from construction equipment, trash, introduction and spread of invasive plants, and increased fire risk are additional indirect effects that could occur during construction activities. Implementation of measures BIO-1 through BIO-7 and BIO-13 would avoid or minimize these indirect effects.

Swainson's Hawk
There would be a permanent loss of up to 11.80 acres of raptor foraging habitat as a result of the Build Alternative. In addition, the Build Alternative would temporarily affect 37.45 acres of raptor foraging habitat within the work area necessary to complete the project.

Potential indirect effects on foraging habitat for raptors include avoidance of habitat due to construction noise and disturbances, introduction and spread of invasive weeds reducing quality of habitat, increased risk of fire, and increased dust settling on vegetation. In addition, noise from project construction may deter individuals from foraging in adjacent areas. Implementation of measures BIO-1 through BIO-8 being proposed for other biological resources would address potential indirect effects on raptor foraging habitat.

White Tailed Kite
The proposed project would permanently remove approximately 3.51 acres of suitable nesting habitat within the Black Willow Thicket, Hinds's Walnut and Related Stands, and Tamarisk Thicket, inclusive of approximately 0.50 acre of permanent impact associated with shading of vegetation from construction of the bridge over Chino Creek. In addition, the Build Alternative would temporarily affect 0.62 acre of breeding habitat within the work area necessary to complete the project. No impact or mortality of breeding white-tailed kite would occur with the implementation of the avoidance and minimization measures BIO-1 through BIO-9 and BIO-15. The loss of foraging habitat would not be biologically important because there are sufficient open lands within the vicinity for foraging.

Burrowing Owl
Burrowing owl was not observed and is considered absent from the BSA. No direct, indirect, or cumulative impacts are anticipated. Although no burrowing owls were observed during 2012 or 2017 focused surveys and the potential to occur is low, suitable foraging habitat is located at the south end of the BSA and suitable burrows were observed within and adjacent to the BSA. Although the proposed project is not expected to affect this species, there is a potential for the species to be present prior to construction because the species can migrate and occupy habitat in the Pine Avenue project site in the future. To avoid and minimize any potential impacts to the species just prior to construction, a preconstruction survey will be performed (BIO-9). If burrowing owl is observed on-site prior to construction, then avoidance and minimization will be developed and implemented in consultation with CDFW.

Other Special-Status Birds
Permanent removal of occupied or potentially occupied breeding habitat for yellow warbler, vermillion flycatcher, and long-eared owl would occur on 3.51 acres, inclusive of 0.53 acre of impacts from bridge construction over Chino Creek that would also result in permanent shading effects on breeding habitat. In addition, the Build Alternative would temporarily affect 0.65 acre of breeding habitat for these species within the work area necessary to complete the project.

Permanent removal of occupied or potentially occupied breeding habitat for yellow-breasted chat would occur on 7.35 acres, inclusive of 0.76 acre of impacts from bridge construction over Chino Creek that would also result in permanent shading effects on breeding habitat. In addition, the Build Alternative would temporarily affect 0.62 acres of breeding habitat for these species within the work area necessary to complete the project.

There would be a permanent loss of up to 11.81 acres of raptor foraging habitat as a result of the Build Alternative. In addition, the Build Alternative would temporarily affect 37.45 acres of raptor foraging habitat within the work area necessary to complete the project. Potential indirect effects on breeding and foraging habitat for special-status birds and raptors includes avoidance of

habitat due to construction noise and disturbances, introduction and spread of invasive weeds reducing quality of habitat, increased risk of fire, and increased dust settling on vegetation. In addition, noise from project construction may deter individuals from nesting or foraging in adjacent areas. However, the avoidance and minimization measures BIO-1 through BIO-9, and BIO-15 will ensure no nesting riparian birds are affected during the bird breeding season.

Special Status Reptiles
Permanent removal of potential habitat for special-status reptiles would occur on up to 3.48 acres during construction of the Build Alternative, which includes 0.53 acre of impacts from bridge construction over Chino Creek that would also result in permanent shading effects on riparian habitat. This shading would result in a reduction of habitat quality under the bridge. In addition, the Build Alternative would temporarily affect up to 0.65 acre of riparian habitat suitable to support special-status reptiles within the PIA. Implementation of measures BIO-1 through BIO-8 and BIO-15 would reduce potential effects on special status reptiles.

Special Status Bats
The proposed project has potential for direct and indirect permanent and temporary impacts on bat species foraging and roosting habitat. The proposed road improvement area contains both foraging and potential roosting habitat for bats and the borrow site contains foraging habitat only. The Black Willow Thicket may provide suitable bat roosting trees, tree snags, crevice habitat, or other potential bat roosting habitat. Direct construction-related impacts may occur due to temporary and permanent construction-related tree and vegetation removal and temporary construction-related noise, light, and disturbance impacts from pile driving and machinery. The permanent and temporary removal of habitat would directly remove suitable bat foraging habitat and may result in the loss of bat roosts. In addition, there would be a temporal loss of potential roost and foraging habitat in temporary work areas.

Noise generated from construction equipment and activities may increase the sound levels in the project vicinity, which could affect bat species. The effects on bats may include acoustic trauma, temporary threshold shifts, signal masking, roost abandonment, and/or avoidance of foraging habitat (which may result in individual mortality due to exposure to predators and lack of alternative roost sites). The highest level of noise anticipated to occur would be from pile driving for the installation of the Chino Creek Bridge unless silent pile driving methods are used. The noise generated from pile driving is estimated to reach noise levels of 96 A-weighted decibels (dBA). Maximum ambient (i.e., baseline) sound levels in the project area are 64 dBA. Anything above this level is assumed to potentially cause disturbance to bat species. Pile-driving noise attenuation distance (i.e., distance the pile-driving noise attenuates to maximum ambient levels using the construction noise attenuation equation provided in Caltrans Technical Guidance [Caltrans 2016] for assessing road construction noise on bats) is approximately 952 feet for areas downstream of the bridge and less for vegetated areas north of the bridge. Silent pile driving methods could alternatively be used to avoid acoustic impact.

Indirect construction-related impacts include increased risk of fire, spread of invasive species, and fugitive dust (which may degrade habitat). Indirect effects from operation of the roadway includes increased disturbance from introduced traffic, noise, light from vehicles, edge effects, decreased water quality, increased propagule pressure of nonnative plant species resulting in

habitat degradation, increased habitat fragmentation, and species mortality due to vehicle collisions.

In addition, there is a potential for other non-special-status colonial bat species (i.e., Yuma bat and Mexican free-tailed bat) that could be indirectly affected by noise from project activities. Due to the biological sensitivity of colonial roost and maternity roost sites, if these sites are present within the project vicinity, there may be a biologically important impact on these resources. Measures BIO-15 through BIO-20 will be implemented to avoid or minimize impacts. If a bats are documented within the PIA and impacts on bats cannot be avoided or minimized, then compensatory mitigation may be required (BIO-22). On-site restoration of riparian habitat described in BIO-10 will include of any suitable bat roosting trees, tree snags, crevice habitat, or other potential bat-roosting habitat (BIO-21).

No-Build Alternative

No construction and operation activities would occur under the No-Build Alternative, and no effects would occur.

2.3.4.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

BIO-15 All heavy equipment will install and maintain mufflers or other noise-reducing features will be installed when working at Chino Creek and riparian vegetated areas west of Fairfield Ranch Road during the nesting season. A noise wall or noise barrier (e.g., hay bales, sound curtain, or other method) will be placed during pile driving activities at Chino Creek Bridge. If construction noise is negatively affecting nesting birds or other wildlife, as determined by the biological monitor, work shall cease (unless authorized by the wildlife agencies) until adequate sound barriers can be constructed to reduce noise levels at the edge of the riparian corridor. All noise barriers will need to be constructed within the PIA.

BIO-16 Areas within Chino Creek and areas east and west of the bridge that contain noise receptors exceeding 60dB and which provide suitable and/or occupied habitat for LBV will be designed with sound barriers or structures that would reduce traffic roadway noise below 60 dB. These structures would also reduce spillover lighting from vehicle headlights into adjacent habitat during project operation.

BIO-17 Aerial species diversion structures will be implemented on the Chino Creek Bridge to prevent wildlife-vehicle collisions with aerial species such as least Bell's vireo and bats. Diversion structures may include walls or fencing designed to divert aerial species over the bridge and prevent wildlife-vehicle collisions.

BIO-18 No more than 14 days prior to construction, a bat specialist will conduct a bat habitat assessment to locate any potential bat roosts or maternity colonies within 952 feet of pile driving locations. Particular areas of focus would include bridges over Chino Creek south of the Pine Avenue project site and riparian habitat. If any potential roosts or maternity colonies are found, the bat specialist will conduct bat surveys (i.e., emergence and acoustic surveys) to positively identify species and quantify occupancy. If sensitive bat species are identified in the PIA, measure BIO-19 and BIO-22 will also be implemented.

BIO-19 To avoid and minimize effects of construction equipment and machinery (not including pile-driving, blasting, shears or other intense noise generating activities), a minimum buffer will be maintained around any known bat roost sites as determined by the bat specialist. If these buffers cannot be maintained, seasonal work restrictions or bat eviction and exclusion may be required and shall be developed with a bat specialist and coordinated with CDFW at prior to construction. The bat specialist shall also identify any additional measures needed to avoid and minimize impacts should a roost/roosts be identified.

BIO-20 All construction night lighting will be pointed towards the immediate work area or roadway and will not project or penetrate into adjacent habitat or open space and will not be located adjacent to any bridges or culverts facilitating wildlife movement. Permanent light fixtures over Chino Creek Bridge and open space areas will be designed so that the lumens and light spectrum are wildlife friendly, and are shielded to prevent light pollution into adjacent habitat and open space areas.

BIO-21 On-site restoration or creation of riparian habitat described in BIO-10 will incorporate habitat features that can be used by numerous wildlife species, including tree snags and crevices.

BIO-22 If bats are documented within the PIA, the bat specialist will coordinate with the Project Development Team and CDFW on developing a compensatory mitigation plan which may include eviction and exclusion of bats, provision of alternative bat roosting habitat, and/or provision of bat habitat in the new proposed bridge structure.

2.3.5 Threatened and Endangered Species

2.3.5.1 REGULATORY SETTING

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. 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, such as the Federal Highway Administration (FHWA) (and the Department, as assigned), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) 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. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency

responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the CDFW. For species listed under both the FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

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, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

2.3.5.2 AFFECTED ENVIRONMENT

Information used in this section is based on the approved Natural Environment Study (December 2020), Biological Opinion (May 2020), and Biological Opinion Amendment (July 2022).

Federal Endangered Species Act Consultation

Federal Endangered Species Act (FESA) consultation has occurred with the U.S. Fish and Wildlife Service. Formal consultation commenced with Caltrans' approval of the NES and a Biological Assessment was provided to USFWS in February 2019. In September 2019, the USFWS provided a draft project description to Caltrans including conservation measures to avoid and minimize impacts to least Bell's vireo and its designated critical habitat. A meeting was held in November 2019 with Caltrans, USFWS, and the City of Chino to discuss the project and how to minimize impacts to vireo and its designated critical habitat. In February 2020, Caltrans provided the USFWS a revised version of the BA requesting initiation of formal consultation for project impacts to vireo and its designated critical habitat. In May 2020, the USFWS provided the Biological Opinion for the proposed project. A draft Biological Opinion Amendment was issued for review in February 2022 following changes to the project design. Follow-up discussions with USFWS have been held regarding project lighting, noise, and fencing requirements and additional materials were provided to USFWS in March 2022. Coordination with USFWS and Caltrans occurred for a final Biological Opinion Amendment which was received from USFWS in July 2022. Furthermore, a USFWS Official Species List was obtained on October 19, 2018 and updated on June 1, 2022, and a NMFS Species List was obtained on September 5, 2018. Based on the results of the NMFS search, no consultation is required for NMFS species.

Eight federally listed species have potential to occur in the regional vicinity of the BSA based on the USFWS and NMFS results. An additional 13 listed species from the CNDDB and CNPS query were also reviewed for potential to occur in the BSA. The following three species are

present or potentially present and focused surveys were performed: Santa Ana sucker, least Bell's vireo, and southwestern willow flycatcher (*Empidonax traillii extimus*). Additional details for these three listed species for which focused surveys were completed are provided below.

Santa Ana Sucker
Santa Ana sucker is federally listed as threatened. It is found in small, shallow streams with flows that run from slow to swift. They are most abundant where water is clear and unpolluted, although they can withstand seasonal turbidity and some temperature changes. Santa Ana sucker are often associated with bottom substrata that consist of boulders, gravel, and cobble with algae growth; they are also occasionally found on sandy or muddy substrata, mainly as larval or young of the year. Santa Ana sucker is currently threatened by water diversions; alteration of stream channels; changes in the watershed that result in erosion and debris flows; pollution; and predation by nonnative fishes. Santa Ana sucker is known to occur in the Santa Ana River watershed and have been found above and below Prado Dam.

Presence/absence surveys for Santa Ana sucker, were conducted in 2012 and 2017 within Chino Creek and Cypress Channel. No native fish, including Santa Ana sucker were found. The survey was conducted along an approximately 328-foot reach upstream and downstream of the current Chino Creek culvert crossing of Pine Avenue and along a 164-foot upstream and 328-foot downstream section of Cypress Channel directly east of Chino Creek. Santa Ana sucker was absent during 2012 and 2017 surveys. Nonnative fish species dominate in this reach of Chino Creek. Warm summer water temperatures, low dissolved oxygen, and high number of exotic species all lead to poor habitat for native fish. Although native fish were historically present, the current conditions and anthropogenic effects on aquatic resources provide marginal opportunities for native fish occupation. The Project Site does not provide suitable habitat for Santa Ana sucker, including sufficient shallows, gravel areas, moderate summer water temperatures, and low exotic numbers. Santa Ana sucker and other native fish will have difficulty re-establishing in this area under existing conditions. Federally designated critical habitat does not occur within the BSA.

Least Bell's Vireo
Least Bell's vireo is a federal and state endangered species. Least Bell's vireo is found as a summer resident of Southern California where it inhabits low riparian growth in the vicinity of water or dry river bottoms below 2,000 feet. Least Bell's vireo breeds in dense, shrubby riparian vegetation, often dominated by willows. Nests are typically found in dense vegetation located low in the riparian zones, most frequently in 5- to 10-year-old stands. When least Bell's vireo nest in mature riparian woodlands, they nest in areas with a substantial robust understory of willows as well as other riparian plant species. Least Bell's vireo generally prefer semi-complex riparian habitats that have understory scrub and ample vertical complexity; riparian areas with no understory are less likely to be used. In California, a dense shrub layer associated with riparian habitat was found to be the most critical structural component of occupied least Bell's vireo habitat. In more xeric areas this species will readily utilize unconventional habitats, including mesquites and tamarisk. In riverine habitat in Southern California this species typically utilizes territory sizes of about 2 acres on average.

Suitable nesting and foraging habitat is present in and adjacent to Chino Creek, as well as areas north of Pine Avenue between SR-71 and Fairfield Ranch Road, which occurs within the

floodplain of Chino Creek. In these areas, up to 13.9 acres of potential nesting habitat for least Bell's vireo occurs within the Project Site BSA as Black Willow Thickets, Mulefat Thickets, and Tamarisk Thickets. This species is also expected to forage within Perennial Pepper Weed Patches and Poison Hemlock Patches, both of which exhibit dense vegetative cover of approximately 3 to 6 feet in height, with patchy distribution of mulefat. Surveyors noted the high availability of insects for foraging within these stands.

Protocol surveys were conducted within the BSA during the appropriate survey periods in 2012 and 2017 within all suitable habitat areas. Multiple occurrences of least Bell's vireo were noted in the Project Site BSA in 2012, with approximately eight territories documented during the focused studies. In 2017, surveys resulted in detections of 10 least Bell's vireo territories. During the 2017 survey period, fledglings and/or juveniles were documented within at least nine of the territories.

Least Bell's vireo data for 2011 and 2013 was also acquired from the Orange County Water District with least Bell's vireo found within the same areas as the 2012 and 2017 focused studies. Based on the location of the Project Site BSA within the Prado Basin, density and maturity of suitable habitat for breeding and foraging, high food availability, low disturbance levels within suitable habitat in the BSA and positive results from multiple years of surveys, it can be concluded that there are numerous least Bell's vireo occupying riparian habitat in the BSA year after year.

In addition, 107.83 acres of federally designated critical habitat for least Bell's vireo is located within the BSA, of which approximately 30.16 acres provide the Physical and Biological Factors (PBFs) of habitat (i.e., breeding and foraging habitat for the species) required for least Bell's vireo. The remaining 77.66 acres of designated critical habitat for least Bell's vireo occur in disturbed upland communities or are developed areas (i.e., El Prado Golf Course) and existing roadways that do not provide habitat for least Bell's vireo.

Southwestern Willow Flycatcher

The southwestern willow flycatcher subspecies typically breeds within dense tree or shrubby riparian vegetation that is equal to or greater than 10 feet tall. Suitable habitat for southwestern willow flycatcher occurs within 9.94 acres of Black Willow Thicket in the BSA. Focused surveys for this species were performed in 2012 and 2017. There were two willow flycatcher (*Empidonax traillii*) found in the BSA during focused studies. These individuals were found within Black Willow Thicket habitat along Chino Creek during early survey periods in May and June 2017 when the species could have still been migrating. The southwestern willow flycatcher subspecies was not documented as occurring or breeding in the BSA. There is a potential for southwestern willow flycatcher to forage in the BSA and for suitable habitat to be used by dispersing or migrating individuals as this species is known to occur within the Prado Basin.

Other Federally-Listed Species

Caltrans has determined that the proposed project would have a "*No Effect*" on Munz's onion , San Diego ambrosia, Braunton's milkvetch, thread-leaved brodiaea, San Fernando Valley spineflower, slender-horned spineflower, Santa Ana River woollystar, Gambel's water cress, San Diego fairy shrimp, Delhi sands flower-loving fly, steelhead – southern California DPS, arroyo toad, coastal California gnatcatcher, western yellow-billed cuckoo, tricolored blackbird,

California least tern, San Bernardino Merriam's kangaroo rat, and Stephens' kangaroo rat because no suitable habitat is present within the BSA. The table below summarizes the effects determination for each federally listed species evaluated for the project.

Table 2.3-6. Summary of Effects Determination

Species	Caltrans Effects Determination
Munz's Onion	No Effect
San Diego Ambrosia	No Effect
Braunton's Milkvetch	No Effect
Thread-Leaved Brodiaea	No Effect
San Fernando Valley Spineflower	No Effect
Slender-Horned Spineflower	No Effect
Santa Ana River Woollystar	No Effect
Gambel's Water Cress	No Effect
San Diego Fairy Shrimp	No Effect
Delhi Sands Flower-Loving Fly	No Effect
Santa Ana Sucker	No Effect
Steelhead – Southern California DPS	No Effect
Arroyo Toad	No Effect
Coastal California Gnatcatcher	No Effect
Least Bell's Vireo	Likely to Adversely Affect
Southwestern Willow Flycatcher	Not Likely to Adversely Affect
Western Yellow-Billed Cuckoo	No Effect
Tricolored Blackbird	No Effect
California Least Tern	No Effect
San Bernardino Merriam's Kangaroo Rat	No Effect
Stephens' Kangaroo Rat	No Effect
Source: Natural Environment Study (February 2020).	

Essential Fish Habitat Consultation

No essential fish habitat is present within the BSA. Therefore, no consultation with NOAA Fisheries has occurred and no Section 7 consultation is necessary.

State Endangered Species Act Consultation

There were 11 state-listed species evaluated for the proposed project. Based on the results of the habitat assessments, suitable habitat is present for two of these species: southwestern willow flycatcher and least Bell's vireo.

Least Bell's vireo breed within riparian habitat throughout the Pine Avenue project site and will be affected by the proposed project. Southwestern willow flycatcher was not found breeding and take of nests is not expected. An Incidental Take Permit for take of least Bell's vireo will be acquired from CDFW under Section 2081 of the Fish and Game Code.

The remaining species (Munz's onion, San Fernando Valley spineflower, slender-horned spineflower, Sana Ana River woollystar, Gambel's water cress, bald eagle [*Haliaeetus leucocephalus*], western yellow-billed cuckoo, California black rail, California least tern, and Stephens' kangaroo rat) are not present in the BSA and no take would occur.

2.3.5.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

The following federally-listed species were analyzed for their potential to occur within the BSA because they were identified as potentially occurring during literature reviews or they required evaluation because they occurred on the USFWS species list.

- Munz's onion (federally endangered and state threatened);
- San Diego ambrosia (federally endangered);
- Braunton's milk-vetch (federally endangered);
- Thread-leaved brodiaea (federally threatened and candidate state endangered);
- San Fernando Valley spineflower (federally threatened and state endangered);
- Slender-horned spineflower (federally and state endangered);
- Santa Ana River woollystar (federally and state endangered);
- Gambel's water cress (federally endangered and state threatened).

Based on the results of the habitat assessment and focused surveys, no suitable habitat was present within the BSA for federally- and state-listed special-status plant species, and none were observed during the 2012 or 2017 surveys. In addition, no critical habitat for federally-listed plants occurs within the BSA. As there is no suitable habitat for any federally-or state-listed plant species and all are considered absent from the BSA, the project is not expected to affect any federally- or state-listed plant species.

Of the 15 federally- or state-listed wildlife species initially reviewed, three were determined to potentially occur within the project BSA: Santa Ana sucker, least Bell's vireo, and southwestern willow flycatcher. No suitable habitat was present within the BSA for San Diego fairy shrimp, Delhi sands flower-loving fly, steelhead-southern California Distinct Population Segment, arroyo toad, coastal California gnatcatcher, California least tern, San Bernardino Merriam's kangaroo rat, and Stephens' kangaroo rat. The tricolored blackbird, California black rail, western yellow-billed cuckoo are not expected to occur within the BSA due to marginal or no habitat, lack of recent sightings, or due to lack of detection during focused surveys for listed riparian birds.

Santa Ana Sucker
No direct effects on Santa Ana sucker are expected because the species is absent from the project site. An existing sewer main would need to be excavated and removed and this work may require a diversion; however, because Santa Ana Sucker is not present, no impacts are anticipated. There is low potential for construction activities to have an indirect effect on native fish habitat downstream of the project site. Grading of slopes and utility work near Chino Creek may result in sedimentation of the active channel. The potential for chemical spills from construction equipment, trash, introduction and spread of invasive plants, and increased fire risk are additional indirect effects that could occur during construction. Operation of the roadway may also result in indirect effects on Chino Creek and Cypress Channel. Increased vehicular and pedestrian traffic

could introduce invasive weeds, trash, and chemicals carried as runoff into waterways. However, Chino Creek and Cypress Channel are currently heavily degraded, and storm events already transfer large amounts of pollution and litter through the project site. No suitable habitat occurs at the borrow site area. As such, potential indirect effects from operation of the project are not expected to be greater than the existing conditions. The proposed project would have a No Effect determination on Santa Ana sucker as the species is absent from the BSA.

Least Bell's Vireo

Permanent removal of occupied or potentially occupied breeding habitat for least Bell's vireo would occur on 3.51 acres, inclusive of 0.53 acre of impacts from bridge construction over Chino Creek that would also result in permanent shading effects on breeding habitat. There are an additional 3.09 acres of suitable foraging habitat that would be permanently removed, inclusive of 0.22 acre of impacts from bridge shading. In addition, the project impact area (PIA) would temporarily affect 0.65 acre of breeding habitat and 1.73 acres of foraging habitat within the work area necessary to complete the project. In addition, most of the occupied breeding and foraging habitat for least Bell's vireo is also designated critical habitat. Of the total 17.30 acres of impacts on critical habitat resulting from the proposed project, 8.97 acres of impacts, which includes 0.75 acre of permanent shaded riparian areas, would occur within habitats that contain PBFs for the species. The remaining permanent impacts on critical habitat occur within areas that would not be suitable for breeding habitat, such as developed roads, buildings, and golf courses. Construction of the project would have the potential to affect up to seven least Bell's vireo pairs based on survey data. These seven territories are directly within the PIA and may be directly affected through vegetation or habitat loss and/or temporary exclusion. There are several additional territories north of the PIA and west of Chino Creek, which may be indirectly affected by temporarily construction noise and disturbance. There would also be temporal loss of 2.38 acres of nesting and foraging habitat until vegetation has re-established after construction. Construction-related activities occurring in or near riparian habitat may also result in sedimentation degrading the on-site habitat and potentially resulting in minor alterations to flow regimes if riparian areas are directly affected, habitat degradation from fugitive dust, and the spread of seeds from invasives. In addition, noise from project construction and equipment may deter least Bell's vireo from areas adjacent to the project.

Based on the May 2020 Biological Opinion, up to 10 pairs of vireos will be taken as a result of construction. Incidental take is expected to be in the form of harm as defined in 50 CFR§17.3 due to the direct loss of a portion of their foraging and breeding habitat and increased displacement by project work that could result in death or injury and reproductive loss of up to three breeding seasons. The Biological Opinion determined that the level of anticipated take is not likely to result in jeopardy to the vireo. The project will implement reasonable and prudent measures (M-1 to M-3) to minimize the incidental take of vireos.

Operation of the project may have a long-term effect on individual least Bell's vireo. Individuals flying over the bridge may be hit by vehicles increasing mortality. Noise from vehicles may also deter least Bell's vireo from breeding in riparian habitat adjacent to the bridge and basin areas to the northwest. In addition, habitat adjacent to the bridge over Chino Creek may be degraded by edge effects, decreasing the number of individuals that would breed adjacent to the project. Measures BIO-1 through BIO-8 would apply for least Bell's vireo to reduce the potential effects during construction. In addition, BIO-9 will ensure additional measures are being implemented

to avoid affecting individuals during the bird breeding season. BIO-15 will address indirect effects from construction noise and pile driving and BIO-17 will address the design of Chino Creek bridge to prevent collisions from species flying over the bridge. Compensation for direct impacts on occupied least Bell's vireo habitat and adjacent potential habitat will be necessary to ensure there is no net loss of occupied habitat as outlined in BIO-10 and BIO-11.

Caltrans has determined the proposed project would have a "Likely to Adversely Affect" on least Bell's vireo and occupied critical habitat that contains PBFs. Formal Section 7 consultation with USFWS occurred on February 2019 for project impacts on least Bell's vireo and its designated critical habitat. The USFWS provided a draft project description and conservation measures to avoid and minimize impacts to the least Bell's vireo and its designated critical habitat to Caltrans for review in September 2019. Caltrans provided the USFWS a letter in February 2020 with the revised BA, requesting initiation of formal consultation for project impacts to the vireo and its designated critical habitat. In May 2020, the USFWS provided the Biological Opinion for the proposed project and Conservation Measures (CM) (CM-1 to CM-24) as part of the proposed action to avoid and minimize impact to vireos. In July 2022, an amended Biological Opinion was received from USFWS that clarifies the removal from the project description of work related to restoring the existing damaged Pine Avenue at Chino Creek, which has been performed under a separate Biological Opinion independent of the current project. The USFWS concluded that the amendment does not change the conclusions of the May 2020 Biological Opinion.

Southwestern Willow Flycatcher

The southwestern willow flycatcher has not been documented breeding within the PIA; therefore, no direct effects on this species are anticipated as a result of the project. However, there would be a direct loss of suitable foraging habitat that could be used by individuals foraging and/or dispersing through the area. There would also be a temporal loss of 0.55 acre of foraging habitat for individuals foraging and/or dispersing through the area, which would persist until vegetation has been restored after construction. The avoidance and minimization measures (BIO-1 to BIO-9) implemented during construction within riparian areas that could be used by foraging and/or dispersing individuals would ensure there are no impacts on southwestern willow flycatcher that may migrate through the project area. The loss of suitable foraging habitat for southwestern willow flycatcher would be addressed through compensatory measures being implemented for riparian vegetated areas and least Bell's vireo (BIO-10 and BIO-11). No federally-designated critical habitat for southwestern willow flycatcher would be affected by the project as none is present. The proposed project would have a "Not Likely to Adversely Affect" determination by Caltrans on southwestern willow flycatcher as suitable foraging habitat for the species would be removed. Measure CM-25 will be incorporated to avoid and minimize impacts to the flycatcher.

The table below summarizes the effects findings for the proposed project.

Table 2.3-7. Federally Listed Species Potentially Affected by the Project

Common Name	Scientific name	Species List	Status	Determination
Coastal California gnatcatcher	*Polioptila californica californica*	USFWS	T	No Effect

Least Bell's vireo	*Vireo bellii pusillus*	USFWS	E, CH	May Affect, Likely to Adversely Effect
Southwestern willow flycatcher	*Empidonax traillii extimus*	USFWS	E	May Affect, No Likely to Adversely Affect
Santa Ana sucker	*Catostomus santaanae*	USFWS	T	No Effect
Steelhead-southern California Distinct Population Segment	*Oncorhynchus mykiss irideus*	NOAA Fisheries	E	No Effect
Delhi sands flower-loving fly	*Rhaphiomidas terminates abdominalis*	USFWS	E	No Effect
San Diego ambrosia	*Ambrosia pumila*	USFWS	E	No Effect
Thread-leaved brodiaea	*Brodiaea filifolia*	USFWS	T	No Effect
Notes: CH = Critical Habitat, E = Endangered, T = Threatened				

No-Build Alternative

No construction actvities would occur under the No-Build Alternative, and no effects would occur.

2.3.5.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The project will implement avoidance and minimization measures BIO-1 through BIO-9, BIO-15, and BIO-17 and compensatory measures BIO-10 and BIO-11, as previously mentioned. The May 2020 Biological Opinion includes the following conservation measures (CM-1 to CM-24) as part of the proposed action to avoid and minimize impacts to vireos. CM-25 will be implemented to avoid and minimize impacts to the flycatcher.

CM-1 Caltrans will offset permanent impacts to 6.60 acres and temporary impacts to 2.38 acres of habitat occupied by the vireo through the restoration and conservation of 24.56 acres of riparian habitat occupied by the vireo in the vicinity of the project site, and within or directly adjacent to designated critical habitat, as reviewed and approved by the Palm Springs Fish and Wildlife Office (PSFWO).

a. Documentation that the habitat has been conserved (if a bank or in lieu fee program is used) will be provided to the PSFWO prior to the commencement of vegetation removal and project construction; or

b. Caltrans will submit a habitat restoration plan for all restoration, including temporary impact areas, to the PSFWO for review and approval at least 30 days prior to initiating project impacts. The plan will include the following information and conditions:

    i. All habitat restoration sites will be prepared for planting in a way that mimics natural habitat to the maximum extent practicable. All plantings will be installed in away that mimics natural plant distribution and not in rows.

ii. Planting palettes (plant species, size, and number/acre) and seed mixes (plant species and pounds/acres) will be limited to locally native species (e.g., species found in or near the biological study area for the project). The source location of all plant material and seed will be provided to the PSFWO prior to use in restoration activities.

iii. Container plant survival will be 80 percent of the initial plantings for the first 5 years. At the first and second anniversary of plant installation, all dead plants will be replaced unless their function has been replaced by plants from seed or natural recruitment.

iv. A final implementation schedule will indicate when all impacts, as well as restoration planting and irrigation will begin and end.

v. The final restoration plan will include 5 years of success criteria for restoration areas including: percent cover, evidence of natural recruitment of multiple species for all habitat types, 0 percent coverage for all woody California Invasive Plant Council's (Cal-IPCs) "Invasive Plant Inventory" species (e.g., trees and shrubs), and no more than 10 percent coverage for other exotic/weed species.

vi. A minimum 5 years of maintenance and monitoring of restoration areas, unless success criteria are met earlier and all artificial water suppled have been off for at least 2 years.

vii. A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points will be used for qualitative monitoring and stratified-random sampling will be used for all quantitative monitoring.

viii. Contingency measures in the event of restoration failure.

ix. Annual mitigation maintenance and monitoring reports will be submitted to the PSFWO no later than December 1 of each year.

x. If maintenance of a riparian restoration area is necessary between March 15 and August 31, a qualified biologist will survey for vireos within the restoration area, access paths to it, and other areas susceptible to disturbances by restoration site maintenance. Surveys will consist of three visits separated by 2 weeks starting April 10 of each maintenance/monitoring year. Restoration work will be allowed to continue on the site during

the survey period. However, if vireos are found during any of the visits, the Caltrans Project Biologist will notify and coordinate with the PSFWO to identify measures to avoid and/or minimize effects to the vireo (e.g., nests and an appropriate buffer will be flagged by the biologist and avoided by the maintenance work).

CM-2 Unless credits are purchased from a bank or in lieu fee program (1.a. above), a perpetual biological conservation easement or other legal conservation mechanism acceptable to the PSFWO will be recorded over the 24.56 acre area restored and conserved by the project. The conservation mechanism will specify that no easements or activities (e.g., fuel modification zones, public trails, drainage facilities, walls, maintenance access roads, utility easements) that will result in soil disturbance and/or native vegetation removal will be allowed within the biological conservation easement areas. A draft conservation mechanism will be provided to the PSFWO for review and approval. Caltrans will also submit the final conservation mechanism to the PSFWO. If Caltrans is not able to place the conservation easement or other conservation mechanism prior to initiating project impacts, annual reports will be provided on its status until the conservation mechanism is recorded over the property, which will occur within one year of the issuance of this biological opinion, unless, a written extension is requested by Caltrans showing good faith efforts to achieve the recordation and the extension request is granted by the PSFWO.

CM-3 Unless credits are purchased from a bank or in lieu fee program (1.a. above), Caltrans will prepare and implement a perpetual management, maintenance, and monitoring plan for the 24.56-acre area restored and conserved by the project. Caltrans will also establish non-wasting endowments for amounts approved by the PSFWO based on Property Analysis Records (PAR)(Center for Natural Lands Management © 1998) or similar cost estimation methods, to secure the ongoing funding for the perpetual management, maintenance and monitoring of the property. Caltrans will submit a draft long-term management plan for the property to the PSFWO for review and approval. The long-term management plan will include, but not be limited to, the following: 1) the PAR or other cost estimation results for the non-wasting endowment; 2) proposed land manager's name, qualifications, business address, and contact information; 3) method of protecting the resources in perpetuity (e.g., conservation easement), monitoring schedule, measures to prevent human and exotic species encroachment, funding mechanism, and contingency measures should problems occur. Caltrans will submit the final long-term management plant to the PSFWO. If the long-term management plan is not prepared prior to initiating project impacts, annual reports will be provided on its status until the final management plan has been provided and the endowment has been established.

CM-4 A biologist (Project Biologist) approved by the PSFWO will be on site: (a) during all vegetation clearing/grubbing; and (b) weekly during project construction within 500 feet of vireo habitat to monitor compliance will all conservation measures. Caltrans will submit the biologist's name, contact information, and work schedule on the project to the PSFWO at least 15 working days prior to initiating project impacts. The Project Biologist will be provided with a copy of this consultation. The Project Biologist will be available during pre-construction and construction phases to address protection of sensitive biological resources, monitor ongoing work, and maintain communications with construction personnel to facilitate the appropriate and lawful

management of issues relating to biological resources. The Project Biologist will report any non-compliance issue to the Resident Engineer and Caltrans Project Biologist such that work can be halted if necessary, and the issue can be discussed with the PSFWO to ensure the proper implementation of species and habitat protection measures. The Caltrans Project Biologist will report all non-compliance issues to the PSFWO within 1 business day of notification.

CM-5 The Project Biologist will submit monthly email reports (including photographs of impact areas) to the Caltrans Project Biologist during clearing of, and construction within, 500 feet of vireo habitat. The monthly reports will document that authorized impacts were not exceeded and general compliance with all conditions. The reports will also outline the location of construction activities, the type of construction that occurred, and equipment used. These reports will specify numbers and locations, and sex of listed species (if observed), their observed behavior (especially in relation to construction activities), and remedial measures employed to avoid and minimize impacts to these species. Raw field notes should be available upon request by the PSFWO. The Caltrans Project Biologist will review reports and forward them to the PSFWO.

CM-6 The Project Biologist will submit a final report to the Caltrans Project Biologist within 120 days of project completion including photographs of impact areas and adjacent habitat, documentation that authorized impacts were not exceeded, and documentation that general compliance with all conservation measures was achieved. The report will specify numbers and locations of listed species (if observed); observed listed species behavior (especially in relation to project activities); and remedial measures employed to avoid and minimize impacts to listed species and critical habitat. Raw field notes should be available upon request by the PSFWO. The Caltrans Project Biologist will review the report and forward it to the PSFWO within 15 days of receipt.

CM-7 The clearing and grubbing of native habitats for the project will occur between September 1 and March 14, to avoid the vireo breeding season. Vegetation clearing may commence earlier in the fall if the Project Biologist demonstrates to the satisfaction of the PSFWO that all breeding within adjacent habitat is complete.

CM-8 All native or sensitive habitats outside and adjacent to the construction limits will be designated as Environmentally Sensitive Areas (ESAs) on project maps. ESAs will be temporarily fenced during construction with orange plastic snow fence, orange silt fencing, or in areas of flowing water, with stakes and flagging. No personnel, equipment, or debris will be allowed within the ESAs. Temporary ESA fencing and flagging will be installed in a manner that does not impact habitats to be avoided and such that it is clearly visible to personnel on foot and operating heavy equipment. Caltrans will submit to the PSFWO, at least 5 days prior to initiating project impacts (except for impacts resulting from clearing to install temporary fencing), the final plans for initial clearing and grubbing of habitat and project construction. These final plans will include photographs that show the fenced and flagged limits of impact and all areas to be impacted or avoided. Field maps indicating the location of temporary ESA fencing and/or staking will also be provided. If work occurs within vireo habitat beyond the fenced or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of the PSFWO. Temporary ESA fencing and markers will be maintained in good repair until the completion of project work adjacent to each ESA and removed upon completion of project work adjacent to each ESA.

CM-9 An employee education program will be developed and implemented by the Project Biologist. Each employee (including temporary, contractors, and subcontractors) will receive a training/awareness program prior to working on the proposed project. They will be advised of the potential impact to the listed species and the potential penalties for taking such species. At a minimum, the program will include the following topics: occurrence of the listed and sensitive species in the area (including photographs), their general ecology, sensitivity of the species to human activities, legal protection afforded these species, penalties for violations of Federal and State laws, reporting requirements, and project features designed to reduce the impacts to these species and promote continued successful occupation of the project area.

CM-10 During project construction all invasive species included on the National Invasive Species Management Plan, the State of California Noxious Weed List, and the California Invasive Plant Council's Invasive Plant Inventory list (Cal-IPC 2006) found growing within the project impact area will be identified and removed at least once a month. Special care will be taken during transport, use, and disposal of soils containing invasive weed seeds and all weedy vegetation removed during construction will be properly disposed of to prevent spread into areas outside of the construction area. All heavy equipment will be washed and cleaned of debris prior to entering a new area to minimize the spread of invasive weeds.

CM-11 Project landscaping will follow the provisions set forth in Executive Order 13112, which mandates preventing the introduction of and controlling the spread of invasive plant species on highway ROWs. No invasive species listed in the National Invasive Species Management Plan, State of California Noxious Weed List, or Cal-IPC Invasive Plant Inventory list will be used in the landscaping plans for the project. Caltrans will review the landscaping plans for the project and then submit them to the PSFWO for review and approval.

CM-12 If nighttime construction is necessary, all project lighting (e.g., staging areas, equipment storage sites, roadway) will be of the lowest illumination necessary for human safety, selectively placed, and directed onto the construction site and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats.

CM-13 Permanent project lighting will be of the lowest illumination necessary for safety and will be directed toward the bridge and paved roadway and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats. Caltrans will review the permanent lighting plans for the project and then submit them to the PSFWO.

CM-14 A construction Storm Water Pollution Prevention Plan (SWPPP) and soil erosion and sedimentation plan will be developed to identify best management practices that will be implemented during construction to minimize erosion, prevent sediment and debris from entering drainages, and maintain water quality. Sediment will not be stockpiled in areas where material could be washed into drainages by rainfall. Erosion and sediment control devices used for the proposed project, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.

CM-15 All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated areas located within previously disturbed upland. They will be located such that runoff from the designated areas will not enter vireo habitat.

CM-16 Impacts from fugitive dust will be minimized through watering and other appropriate measures.

CM-17 The project site will be kept as clear of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site.

CM-18 Project personnel will be prohibited from bringing domestic pets to construction sites to ensure that domestic pets do not disturb or depredate wildlife in adjacent native habitats.

CM-19 Fire suppression equipment, including extinguishers, shovels, and water tankers, will be available on site during construction.

CM-20 If project construction, excluding clearing and grubbing, is necessary during the vireo breeding season (March 15–August 31) that will generate noise in excess of ambient noise levels within vireo nesting habitat, measures will be implemented to reduce noise disturbance to vireos. A noise abatement plan will be submitted to the PSFWO for review and approval within 30 days of initiating project impacts and 5 days prior to commencing pile driving and pavement breaking work. The noise abatement plan will include the following information: (a) a description of the noise abatement measures that will be implemented by the project (e.g., mufflers, use of a vibratory driver, shroud for pile driver, soft start, cushion block, sound wall or curtain, placement of project generators away from the riparian area and behind k-rail, etc.) and (b) noise levels that are anticipated within the adjacent vireo nesting habitat. The Project Biologist will oversee implementation of the noise abatement plan and may conduct noise monitoring and vireo surveys as needed, based on their judgment and knowledge of the species, site, and proposed activities, to minimize noise impacts to vireos.

CM-21 Chino Creek Bridge will be designed and constructed with barriers that will reduce traffic roadway noise below 60 dB and reduce light spill from vehicle headlights into adjacent habitat. The barrier design will be provided to the PSFWO for review and approval.

CM-22 Aerial species diversion structures such as bridge poles or fencing will be included on the Chino Creek Bridge to avoid and minimize wildlife-vehicle collisions. The structures will be designed to be visible to birds, and to prevent perching by raptors, and will be of sufficient height to guide birds over vehicle traffic.

CM-23 Chino Creek Bridge will be designed without cable stays/guywires that would pose a significant threat of bird mortality and injury from collision.

CM-24 Chino Creek Bridge will be a minimum of 500 feet long and will accommodate dry wildlife movement areas on both banks of Chino Creek to ensure that ecosystem functions are maintained for the benefit of listed species. Rock slope protection will be avoided at the wildlife movement areas. If rock slope protection is required, modifications (e.g., small pebble, dirt, soil covered rip rap, or grouted movement pathways) will be made such that animals of all sizes can use the wildlife movement areas. If feasible, Chino Creek Bridge will be designed with columns rather than pier walls to improve visibility and openness and encourage usage by wildlife.

CM-25 Measures included in the biological opinion to avoid and minimize project impacts to vireo and its designated critical habitat will also avoid and minimize project impacts to flycatcher.

To minimize the incidental take of vireos, the following measures will be implemented:

M-1 Prior to initiating project work, three preconstruction surveys will be conducted within all suitable vireo habitat in or within 500 feet of the Pine Valley Avenue Extension Project footprint, within 30 days prior to initiation of vegetation removal activities, to verify that no more than 10 vireo pairs will be harmed as a result of the project. If it is the wrong time of year for effective surveys, at the discretion of the Project Biologist, a copy of project surveys conducted within the year may be submitted.

M-2 Prior to initiating work, Caltrans will provide to the PSFWO a map showing the distribution of vireos relative to the project footprint and an estimate of the number of vireos that will be impacted by the project, or confirm in writing that the number of pairs that will be impacted by the project remains correct.

M-3 Caltrans will notify the PSFWO of the area of vireo habitat cleared within 30 days of completing removal of vireo habitat. The purpose of this notification is to ensure that impacts to vireo habitat from the proposed project do not exceed the take thresholds.

2.3.6 Invasive Species

2.3.6.1 REGULATORY SETTING

On February 3, 1999, President William J. Clinton signed Executive Order (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." Federal Highway Administration (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 National Environmental Policy Act (NEPA) analysis for a proposed project.

2.3.6.2 AFFECTED ENVIRONMENT

Nonnative invasive plants are species known to invade natural communities by outcompeting and displacing native plants. Invasive plants are a leading cause of declines in native plants as well as native wildlife that depend on native plants for food or cover, and are therefore a factor in FESA and CESA listings. Areas dominated by invasive plants have increased wildfire and flood danger and negatively affect productivity of rangeland and timberland.

Nonnative invasive animal species also outcompete native wildlife for resources such as food and space. Invasive wildlife can also act as predators which can lead to the extinction of native

animals and plants. Removal of native species leads to a lower biodiversity in an area. Generally, lower biodiversity is correlated to a lack in beneficial ecosystem functions.

During project related fieldwork, all observed invasive plant and wildlife species were documented and compiled into species lists.

Table 2.3-8. Invasive Plant Species Within the BSA

Scientific Name	Common Name	CISAC List
Acacia sp.	Acacia	Cal-IPC/CDFA Weed
Ailanthus altissima	Tree of heaven	Cal-IPC
Arundo donax	Giant reed	Cal-IPC
Avena barbata	Slender wild oat	Cal-IPC
Avena fatua	Wild oat	Cal-IPC
Bassia hyssopifolia	Fivehorn smotherweed	Cal-IPC
Brassica nigra	Black mustard	Cal-IPC
Brassica rapa	Field mustard	Cal-IPC
Bromus diandrus	Ripgut brome	Cal-IPC
Bromus madritensis	Compact brome	Cal-IPC
Bromus tectorum	Cheat grass	Cal-IPC
Carduus pycnocephalus	Italian thistle	Cal-IPC/CDFA Weed
Centaurea melitensis	Tocalote	Cal-IPC/CDFA Weed
Cirsium vulgare	Bull thistle	Cal-IPC
Conium maculatum	Poison hemlock	Cal-IPC
Convolvulus arvensis	Orchard morning-glory	CDFA Weed
Cynodon dactylon	Bermuda grass	Cal-IPC/CDFA Weed
Erodium cicutarium	Redstem filaree	Cal-IPC
Eucalyptus globulus	Blue gum	Cal-IPC
Festuca arundinacea	Tall fescue	Cal-IPC
Festuca myuros	Rattail fescue	Cal-IPC
Foeniculum vulgare	Fennel	Cal-IPC
Hirschfeldia incana	Shortpod mustard	Cal-IPC
Hordeum murinum	Wall barley	Cal-IPC
Hypochaeris glabra	Cal-IPC	Cal-IPC
Kochia scoparia	Mexican fireweed	Cal-IPC
Lepidium latifolium	Perennial pepper-grass	CDFA Weed
Marrubium vulgare	Horehound	Cal-IPC
Medicago polymorpha	California burclover	Cal-IPC
Nicotiana glauca	Tree tobacco	Cal-IPC
Olea europaea	Olive	Cal-IPC
Phoenix canariensis	Canary Island palm	Cal-IPC
Polypogon monspeliensis	Rabbit-foot beard grass	Cal-IPC
Raphanus sativus	Radish	Cal-IPC
Ricinus communis	Castorbean	Cal-IPC
Rumex acetosella	Sheep dock	Cal-IPC
Rumex crispus	Curly dock	Cal-IPC
Salsola tragus	Prickly Russian thistle	Cal-IPC/CDFA Weed
Schinus molle	Peruvian pepper tree	Cal-IPC
Schinus terebinthifolius	Brazilian pepper tree	Cal-IPC
Schismus barbatus	Mediterranean schismus	Cal-IPC
Silybum marianum	Blessed milkthistle	Cal-IPC
Sisymbrium irio	London rocket	Cal-IPC
Stipa miliacea var. *miliacea*	Smilo grass	Cal-IPC
Tamarix ramosissima	Hairy tamarisk	Cal-IPC

Tribulus terrestris	Puncturevine	Cal-IPC/CDFA Weed
Washingtonia robusta	Mexican fan palm	Cal-IPC
Source: Natural Environment Study (February 2020).		

Wildlife species documented within the BSA as invasive include:

- American bullfrog (*Lithobates catesbeianus*)
- Brown-headed cowbird (*Molothrus ater*)
- House sparrow (*Passer domesticus*)
- Red-eared slider (*Trachemys scripta elegans*)
- Rock pigeon (*Columba livia*)
- European starling (*Sturnus vulgaris*)
- Eurasian Collared-Dove (*Streptopelia decaocto*)

2.3.6.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

The proposed project has the potential to spread invasive species through personnel entering and exiting the project area with contaminated equipment, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species so that seed is spread along the highway. Implementation of measures **BIO-1** to **BIO-6** would avoid and minimize the potential of invasive species spreading into the project area.

No-Build Alternative

The No-Build Alternative is not expected to add impacts from invasive species because it would not change existing conditions.

2.3.6.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

To ensure that the Build Alternative does not promote the introduction or spread of invasive plant species to the open space areas within the study area, measures **BIO-1** to **BIO-6**, would be implemented.

2.4 Cumulative Impacts

2.4.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts on resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. 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.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR) Section 1508.7.

Methodology

Caltrans, in conjunction with Federal Highway Administration and the United States Environmental Protection Agency, developed a guidance document titled *Guidance for Preparers of Cumulative Impact Analysis* (2005). The following is based on the referenced guidance.

As specified in the guidance, if a proposed project will not cause direct or indirect impacts on a resource, it will not contribute to a cumulative impact on that resource and accordingly need not be included in the evaluation of potential cumulative impacts. As discussed at the beginning of Chapter 2 or in related sections of Chapter 2 of the document, the proposed project would not result in direct or indirect impacts on the following resources; therefore, no discussion is provided for these resources in the evaluation of potential cumulative impacts.

- Land Use
- Coastal Zone
- National Fisheries
- Wild and Scenic Rivers

- Farmlands/Timberlands
- Growth
- Community Impacts
- Utilities
- Geology/Soils/Seismicity
- Water Quality/Stormwater Runoff
- Hydrology/Floodplain
- Hazards and Hazardous Materials
- Paleontological Resources
- Air Quality
- Noise
- Invasive Species

The resources listed below were evaluated in terms of whether the proposed project might contribute to cumulative impacts, and they are discussed in the following sections:

- Traffic and Transportation
- Emergency Services
- Visual/Aesthetics
- Biological Resources

The following cumulative projects are located in and near the City of Chino and Chino Hills, in San Bernardino County. There were no other planned or reasonably foreseeable project improvements identified within the resource study area (RSA) for any of the environmental resources evaluated for potential cumulative impacts.

Table 2.4-1. Cumulative Project List

Project	Location	Description	Status
Tentative Tract Map (TTM) 19749	NWC Pine and Mill Creek Ave	A request for approval to construct a commercial center consisting of 3 buildings.	Under Construction
Euclid Commerce Center	15801-15921 Euclid Ave	A request to construct 186,618 square foot industrial park.	Approved 11/13/2017, Plan Check. Under Construction
Lennar Autumn Field	South of Bickmore Ave, west of Hellman Ave, north of Pine Ave, east of Huckleberry Ave.	Request to construct 82 residential dwelling units on 8.98 acres.	Under Construction
Woodside Homes	NWC Pine and Hellman Ave	Request to construct 56 single family detached homes on 7.82 acre.	Under Construction

Project	Location	Description	Status
Euclid Self Storage	15950 Euclid Ave	Request for self storage facility consisting of four storage buildings.	Under Construction
KB Homes - Turnleaf	Bickmore Ave, east of Mayhew Ave	Request for approval of 185 detached single-family dwelling units on 18.51 acres.	Under Construction
Rancho Miramonte	South of Chino Corona Road and east of Cucamonga Ave	Request to subdivide 271.16 acres into 19 lots for future residential development.	In Plan Check
Chino Development Corporation - Van Vilet	Between Bickmore and Pine Ave, west of Mill Creek Ave	Request to subdivide 41.9 acres into 9 lots for residential units.	Approved
Xebec	15515 Dupont Ave	Request to construct 28,600 square foot industrial building.	Approved, 9/17/18, Plan Check
Lennar - Olive Grove II	8674 Bickmore Ave	Request for approval to construct 57 single family residential.	Under Construction
Rancho Miramonte	8115 Chino Corona Road	"B" level Master Site Approval for Rancho Miramonte area to subdivide area for future development of residential, open space, RV Storage, community park and community lot.	In Review
Lennar - Summerfield	Bickmore at Alpine Meadows	Request for approval of 93 detached condominium on 9.25 acres.	Under Construction
Euclid Business Center	NEC Bickmore and Euclid Ave	Request to construct 8 industrial buildings.	In Plan Check
Lennar - The Landings	North of Bickmore Ave, east of Rincon Meadows Ave	Request for approval of 200 residential dwelling units.	Under Construction
Richmond American - Pine Berry	West of Hellman Ave, north of Bickmore Ave, east of Alpine Meadows Ave and south of SCE Easement.	Request for approval to construct 78 single family residential.	Under Construction
Richmond American - Vineyard	West of Hellman Ave, north of Bickmore, east of Alpine Meadows Ave and south of the SCE Easement	Request to construct 73 single family residential.	Under Construction
Majestic Chino Logistics Center	SEC Mountain Ave and Bickmore Ave	Request to change zoning and General Plan land use designation for 96.9 acres for future development.	In Review
PL19-0022	NEC Bickmore and Mayhew Avenues	Request for 60 auto court units and 106 duplex units.	In Review

Project	Location	Description	Status
Vila Borba	West and east of Butterfield Ranch Road, near Pine Avenue	Single family and multi-family residences	Tract 16413 (Planning Area 3) pending construction. Tract 16414 (Planning Area 4) plans are under review by the City of Chino Hills.
Goddard School	Southwest corner of Picasso Drive and Pomona Rincon Road	Private daycare/pre-school facility	Site under construction, anticipated completion by mid-2020.
Chino Hills Biz Center	Southeast corner of Soquel Canyon Parkway and Pomona Rincon Road, east of Chino Hills High School	Mixed-use development consisting of medical office, hotel, retail and specialty hospital.	Currently processing entitlement amendments and requires CEQA review prior to Planning Commission hearing.
The Rincon	Southwest corner of Soquel Canyon Parkway and SR-71	Mixed-use development consisting of micro-brewery, medical office, fast food restaurant, and hotel.	Fast food restaurant, micro-brewery, and medical offices completed, or near completion. Hotel construction anticipated to start early 2020 with completion in 2021.
SR-71/ Pine Avenue Interchange Ramp Widening	SR-71 Interchange at Pine Avenue.	Widen northbound and southbound off-ramps to provide a dedicated right turn lane.	Preparation of environmental documents.
Source: City of Chino, Planning Activity Applications, Updated April 2020. https://www.cityofchino.org/city_hall/departments/community_development/planning City of Chino Hills, Community Development, Major Development Projects: http:chinohills.org/653/Major-Development-Projects			

2.4.2 Traffic and Transportation

The RSA for traffic and transportation is the major transportation networks in the area including SR-71, SR-60, Euclid Avenue, El Prado Road, and Pine Avenue. The proposed project would result in temporary and short-term traffic congestion and delays related to construction of the project. The cumulative projects described above, if constructed during the same time period may add further to traffic delays and congestion in the area. The cumulative projects are also located north, east, and west of Pine Avenue and as Pine Avenue is currently closed at El Prado Road with no connection to SR-71, no vehicles are expected to travel from the cumulative project sites to the proposed project site area. Each cumulative project would also be required to prepare a Traffic Management Plan (TMP) or similar plan to mitigate and address detours, road closures, and alternate routes. Cumulative impacts during construction would be short-term, only lasting the duration of the construction period. Furthermore, the purpose of the project is to provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand in the Cities of Chino and Chino Hills, consistent with both Cities General Plan Circulation Elements. As further seen by the cumulative projects list above, the vicinity is experiencing rapid population growth and development and the Pine Avenue Extension Project would be needed to relieve existing and future traffic congestion in the area as a result of the rapid development.

2.4.3 Emergency Services

The RSA for emergency services are the major transportation networks in the area including SR-71, SR-60, Euclid Avenue, El Prado Road, and Pine Avenue. The proposed project would result in temporary and short-term traffic congestion and delays during the construction phase. The above listed cumulative projects, if constructed during the same time period, may add to these traffic delays for emergency services. However, each project would be required to prepare a TMP or similar plan to mitigate and address detours, roadway closures, and include advance notice to emergency services in the area on a project-by-project basis. Cumulative impacts to emergency services would be short-term and last only the duration of construction. As such, the proposed project would not contribute to cumulative emergency services impacts. Furthermore, once completed, the Pine Avenue Extension Project would result in an additional link to SR-71 from Euclid Avenue for emergency service vehicles to travel through the vicnity.

2.4.4 Visual/Aesthetics

The RSA for visual and aesthetics is the viewshed of the project corridor area, which includes areas that are visible from, adjacent to, and outside of the road's right of way. Equipment used for construction of the proejct would include graders, excavators, pavers, compactors, and various types of construction vehicles. General construction activities, construction staging/stockpiling, the storage of road-widening/building materials, the presence of construction equipment, and temporary traffic barricades would result in temporary construction impacts by altering the composition of the view available from and to the project corridor. Travelers along the SR-71, Euclid Avenue, and Pine Avenue may notice an increase in constrution activities and construction vehicles, with construction of other cumulative projects. Construction traffic in the vicinity would be visible on local roadways, however, would generally be consistent with the traffic in the area, as there are many designated truck routes near the project corridor area. There are no scenic roadways in or near the project area, so there would be no affect to such resources, with implementation of the cumulative projects. The cumulative projects mentioned above, in addition to the proposed project would not result in visual and aesthetic cumulative impacts due to distance between the projects.

2.4.5 Biological Resources

The RSA for the cumulative biological resources impacts analysis encompasses the biological study area (BSA). The BSA was created to encompass the project footprint and typical habitats in the immediate project vicinity and a 300-foot buffer that may be affected by the project. The BSA served to identify the maximum extent of biological disturbances that could be caused by the proposed project and is therefore considered as the resource study area for this cumulative analysis.

Riparian Habitat

Although the loss of 4.08 acres of riparian habitat may be cumulatively considerable due to the widespread and rapid decline of this resource, the Prado Basin covers the largest area of riparian forest in southern California. Due to the amount of inundation that occurs within the Prado Basin, there are few cumulative projects that are feasible within the area, thereby conserving the

large swath of riparian vegetation occurring in this region. The permanent loss of 4.08 acres will be replaced at a 3:1 ratio within the Prado Basin (on-site and/or off-site) or through an in-lieu fee program or other mitigation provider, as described in BIO-10. As such no cumulative impacts on riparian habitats are anticipated as a result of the project.

Jurisdictional Impacts

The proposed project occurs within and directly adjacent to the northwestern corner of the Prado Basin and due to the amount of inundation that occurs within the Prado Basin, there are few cumulative projects that are feasible within the area. The proposed project would incorporate several culverts under the raised Pine Avenue roadway west of Chino Creek to ensure that flood waters continue to drain to the creek and maintain the functions of the Prado Basin area. The proposed project would contribute to the regional loss of WoUS, including wetlands, and state streambeds. Due to the general widespread and regional loss of aquatic resources and wetlands, the loss of these waters is considered a cumulatively considerable impact that would be mitigated through compensation that fully replaces the relevant functions and values at a watershed level under the permitting process of Section 404 and 401 of the CWA and Section 1600 of the California Fish and Game Code.

Wildlife Species

The proposed project would permanently remove approximately 3.51 acres of occupied least Bell's vireo breeding habitat at the edge of the Prado Basin, 2.8 acres of which are within designated critical habitat. Due to the levels of inundation that occur within Prado Basin, there are few projects that are planned in the basin area that would contribute to cumulative impacts to least Bell's vireo. On-site restoration of habitat and the proposed project being adjacent to existing occupied habitat within the Prado Basin is expected to encourage least Bell's vireo to return and breed within the project vicinity. Take authorization for direct effects on least Bell's vireo would be obtained from USFWS through formal Section 7 consultation and from CDFW through a request for a consistency determination under Section 2080.1 of the California Fish and Game Code. Because the project will mitigate for all impacts on least Bell's vireo habitat and critical habitat through FESA/CESA and aquatics permitting, the project will incorporate avoidance and minimization measures to reduce construction-related effects, and the project would incorporate design features to avoid long-term direct and indirect effect on least Bell's vireo, the impacts from the project on least Bell's vireo are not expected to be cumulatively considerable to the decline of the species.

Wildlife Corridors

Over the past decades and recent history, regional developments, including substantial commercial, residential, and transportation expansions, have resulted in substantial losses of habitat and caused extensive habitat fragmentation of the project region. These impacts have resulted in wildlife population and habitat isolation, constrained or obstructed movement and connectivity, loss of genetic exchange among and between wildlife populations resulting in population declines, increasing wildlife mortality caused by wildlife-vehicle collisions, and behavioral changes such as habitat avoidance due to increased disturbances from human developments. With the implementation of the proposed measures aimed at preventing impacts on habitat and wildlife connectivity, the proposed project is considered not likely to contribute substantially to regional cumulative impacts or declines in connectivity and wildlife movement.

2.4.6 Avoidance, Minimization and/or Mitigation Measures

No additional measures are planned for cumulative impacts.

Chapter 3 CEQA Evaluation

3.1 Determining Significance under CEQA

The project is subject to federal, as well as City of Chino, and state environmental review requirements because the City of Chino proposes the use of federal funds from the Federal Highway Administration (FHWA) and/or the project requires an approval from FHWA. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The City of Chino is the project proponent and the lead agency under CEQA. 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 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or a lower level of documentation, will be required. NEPA requires that an EIS 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 EIS, 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 the Department 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 EIR 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. 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.

3.2 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 (BMPs) 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.

I. AESTHETICS: Except as provided in Public Resources Code Section 21099, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☒	☐
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?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.2.1 CEQA Significance Determinations for Aesthetics

a), b), d) Less Than Significant Impact. There are no scenic roadways in or near the project area, so there would be no affect to such resources. Scenic vista views would not be adversely affected during construction or operation because the project would not introduce features that would block or alter such views. Changes associated with the project would result in slight alterations to the existing visual character of the site but would still appear largely consistent with the existing conditions.

c) Less Than Significant with Mitigation Incorporated. The roadway realignment and widening would result in slight alterations to the visual character, but the changes would be largely consistent with the existing visual character by conforming to widths that currently exist on either end of the project corridor. The proposed new embankment would stand out slightly and reduce the amount of undeveloped open space in the area, however, with implementation of

mitigation measures VIS-1 through VIS-5, significant impacts would be reduced to less than significant levels. Street lighting is proposed along the project corridor and if not properly designed, could adversely affect nearby roadway users. Installation of traffic signals at the intersection of Fairfield Ranch Road/Pomona Rincon Road at Pine Avenue and at El Prado Road at Pine Avenue would result in an incremental increase in light and glare associated with the project. Implementation of measure VIS-6 would reduce potential adverse effects associated with street lighting.

II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.2.2 CEQA Significance Determination for Agriculture and Forest Resources

a), b), c), d), e) No Impact. There are no farmlands or vacant land mapped as Prime Farmlands, Unique Farmlands, Farmlands of Statewide Importance, or Farmlands of Local Importance within the vicinity. Based on the City of Chino, Williamson Act Map, there are no areas within the Williamson Act contract and no active Williamson Act contracts are located along the project site. Impacts are not anticipated in this regard.

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
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?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

3.2.3 CEQA Significance Determinations for Air Quality

a), b), c), d), e) Less Than Significant Impact. The project site is in the City of Chino in San Bernardino County, an area of the South Coast Air Basin (Basin). Air quality regulations in the Basin are administered by the SCAQMD. The project is included in the SCAG 2020-2045 financially constrained RTP, which was found to conform by the FHWA and Federal Transit Administration (FTA) on June 5, 2020 and was adopted by SCAG on September 3, 2020. The project is included in the SCAG financially constrained 2019 FTIP, of the San Bernardino County project listing. Therefore, the project would not conflict with the AQMP. The construction of the project would involve clearing, cut and fill activities, grading, and paving roadway surfaces. During construction, short-term degradation of air quality is expected from the release of particulate emissions generated by construction activities. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated. Implementation of exhaust and fugitive dust emission control measures, as required by Caltrans' Standard Specifications and local air district rules, would avoid or minimize impacts on air quality.

The Caltrans CO Protocol screening analysis demonstrated that the project would not have a material effect on localized CO concentrations. The project was also not considered to be a project of air quality concern, as defined by 40 C.F.R. § 93.123(b)(1), and as such, it is unlikely that the project would generate new air quality violations, worsen existing violations, or delay attainment of NAAQS for PM2.5 or PM10.

The widening of Pine Avenue and connection to the SR-71 interchange may result in localized areas where ambient concentrations of MSATs could be higher than concentrations under the No-Build Alternative. However, the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be reliably quantified because of incomplete or unavailable information for forecasting project-specific MSAT health impacts. Moreover, there

are no sensitive receptors within approximately 500 feet (150 meters) of the proposed project, and any localized increase in MSAT could be offset by increases in speeds and reductions in congestion, which are associated with lower MSAT emissions. Also, MSATs would be lower in other locations as traffic shifts away from them. However, on a regional basis, U.S. EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today's levels.

Projects that are typically associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include these elements that are typically associated with odor generation. During construction, exhaust from equipment and activities associated with the application of pavement, finishes, or paints may produce discernible odors typical of most construction sites. Such odors would be temporary sources of nuisance to adjacent uses and would not affect a substantial number of people. Odors associated with construction would be temporary and intermittent in nature.

IV. BIOLOGICAL RESOURCES: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
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?	☐	☒	☐	☐
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?	☐	☒	☐	☐
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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
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?	☐	☐	☐	☒

3.2.4 CEQA Significance Determination for Biological Resources

a) Less Than Significant with Mitigation Incorporated. There were 12 state-listed species evaluated for the project. Based on the results of the habitat assessments, suitable habitat is present for two of these species: southwestern willow flycatcher (*Empidonax traillii extimus*) and least Bell's vireo (*Vireo bellii pusillus*). Least Bell's vireo breeds within riparian habitat throughout the Pine Avenue project site and will be affected by project construction and operation. Southwestern willow flycatcher was not found breeding and take of nests is not expected. An Incidental Take Permit for least Bell's vireo will be acquired from CDFW under Section 2081 of the Fish and Game Code. The remaining species (Munz's onion [*Allium munzii*], San Fernando Valley spineflower [*Chorizanthe parryi* var. *Fernandina*], slender-horned spineflower [*Dodecahema leptoceras*], Santa Ana River woollystar [*Eriastrum densifolium* ssp. *sanctorum*], Gambel's water cress [*Nasturtium gambelii*], bald eagle [*Haliaeetus leucocephalus*], tricolored blackbird [*Agelaius tricolor*], western yellow-billed cuckoo [*Coccyzus americanus occidentalis*], California black rail [*Laterallus jamaicensis coturniculus*], California least tern [*Sternula antillarum browni*], Stephens' kangaroo rat [*Dipodomys stephensi*]), and Swainson's hawk [*Buteo swainsonii*]) are not present in the BSA and no take would occur. The project also has the potential to affect a California fully protected species, the white-tailed kite (*Elanus leucurus*). A pair of white-tailed kite was observed nesting within the BSA in 2017 and fledged two young during the course of the 2017 field work. White-tailed kite was also observed flying over the BSA during numerous site visits. No impact or mortality of breeding white-tailed kite would occur within implementation of measures **BIO-1** through **BIO-9**, **BIO-15**, and **BIO-17**.

Eight federally-listed species have potential to occur in the regional vicinity of the BSA based on the USFWS and NMFS results. An additional 13 federally-listed species from the CNDDB and CNPS query were also reviewed for potential to occur in the BSA. Of these, the following three federally-listed species are present or potentially present and focused surveys were performed: Santa Ana sucker (*Catostomus santaanae*), least Bell's vireo, and southwestern willow flycatcher. No suitable habitat occurs for the remaining species.

Presence/absence surveys for native fish species, specifically for Santa Ana sucker, were conducted in 2012 and 2017 within Chino Creek and Cypress Channel. No native fish, including Santa Ana sucker or arroyo chub (*Gila orcuttii*) were found. The survey was conducted along an approximately 328-foot reach upstream and downstream of the current Chino Creek culvert crossing of Pine Avenue and along a 164-foot upstream and 328-foot downstream section of Cypress Channel directly east of Chino Creek. Santa Ana sucker was absent during 2012 and 2017 surveys. Nonnative fish species dominate in this reach of Chino Creek. Warm summer water temperatures, low dissolved oxygen, and high number of exotic species all lead to poor habitat conditions for native fish. Although native fish were historically present, the current conditions and anthropogenic effects on aquatic resources provide marginal opportunities for native fish occupation and breeding. The Project Site does not provide suitable habitat for Santa Ana sucker, including sufficient shallows, gravel areas, moderate summer water temperatures, and low exotic numbers. This species and other native fish will have difficulty re-establishing in this area under existing conditions. Federally-designated critical habitat for Santa Ana sucker does not occur within the BSA.

Suitable nesting and foraging habitat for least Bell's vireo is present in and adjacent to Chino Creek, as well as areas north of Pine Avenue between SR-71 and Fairfield Ranch Road, which occurs within the floodplain of Chino Creek. In these areas, up to 13.9 acres of potential nesting for least Bell's vireo occurs within the study area. Protocol surveys were conducted during the appropriate survey periods in 2012 and 2017 within all suitable habitat areas. Multiple occurrences of least Bell's vireo were noted in 2012, with approximately eight territories documented during the focused studies. In 2017, surveys resulted in detections of 10 least Bell's vireo territories. During the 2017 survey period, fledglings and/or juveniles were documented within at least nine of the territories. In addition, 107.83 acres of federally designated critical habitat for least Bell's vireo is located within the BSA, of which approximately 30.16 acres provide the Physical and Biological Factors (PBFs) of habitat (i.e., breeding and foraging habitat for the species) required for least Bell's vireo. The remaining 77.66 acres of designated critical habitat for least Bell's vireo occur in disturbed upland communities or are developed areas (i.e., El Prado Golf Course) and existing roadways that do not provide habitat for least Bell's vireo.

Permanent removal of occupied or potentially occupied breeding habitat for least Bell's vireo would occur on 3.51 acres, inclusive of 0.53 acre of impacts from bridge construction over Chino Creek that would also result in permanent shading effects on breeding habitat. There are an additional 3.09 acres of suitable foraging habitat that would be permanently removed, inclusive of 0.22 acre of impacts from bridge shading. In addition, the project would temporarily affect 0.65 acres of breeding habitat and 1.73 acres of foraging habitat within the work area necessary to complete the project. In addition, most of the occupied breeding and foraging habitat for least Bell's vireo is also designated critical habitat. Of the total 17.30 acres of impacts on critical habitat resulting from the proposed project, 8.97 acres of impacts, which includes 0.75 acre permanent shaded riparian areas, would occur within habitats that contain PBFs for the species. The remaining permanent impacts on critical habitat occur within areas that would not be suitable for breeding habitat, such as developed roads, buildings, and golf courses. Formal Section 7 consultation with USFWS occurred on February 2019 for project impacts on least Bell's vireo and its designated critical habitat. The USFWS provided a draft project description and conservation measures to avoid and minimize impacts to the least Bell's vireo and its designated critical habitat to Caltrans for review in September 2019. Caltrans provided the USFWS a letter in February 2020 with the revised BA, requesting initiation of formal consultation for project impacts to the vireo and its designated critical habitat. An Incidental Take Permit for take of least Bell's vireo will be acquired from CDFW under Section 2081 of the Fish and Game Code.

Measures BIO-1 through BIO-8 that are being incorporated for riparian vegetation communities would apply for least Bell's vireo and would reduce the potential effects on this species during construction. In addition, a Nesting Bird Management Plan (NBMP) (**BIO-9**) will ensure additional measures are being implemented to avoid affecting individuals during the bird breeding season. BIO-15 will address indirect effects from construction noise and pile driving. The Chino Creek Bridge will be designed with diversion structures to prevent collisions with least Bell's vireo flying over the bridge (**BIO-17**).

There were two willow flycatcher (*Empidonax traillii*) found in the BSA during focused studies performed in 2012 and 2017. These individuals were found within Black Willow Thicket habitat along Chino Creek during early survey periods in May and June 2017 when the species could

have still been migrating. The southwestern willow flycatcher subspecies was not documented as occurring or breeding in the BSA. There is a potential for southwestern willow flycatcher to forage in the BSA and for suitable habitat to be used by dispersing or migrating individuals as this species is known to occur within the Prado Basin

Because no suitable habitat is present within the BSA, the proposed project would have no effect on federally-listed Munz's onion, San Diego ambrosia, Braunton's milkvetch, thread-leaved brodiaea, San Fernando Valley spineflower, slender-horned spineflower, Santa Ana River woollystar, Gambel's water cress, San Diego fairy shrimp (*Branchinecta sandiegonensis*), Delhi sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*), steelhead – southern California DPS (*Oncorhynchus mykiss irideus*), arroyo toad (*Anaxyrus californicus*), coastal California gnatcatcher (*Polioptila californica californica*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), tricolored blackbird (*Agelaius tricolor*), California least tern, San Bernardino Merriam's kangaroo rat (*Dipodomys merriami parvus*), or Stephens' kangaroo rat.

Based on the literature review and habitat assessment, non-listed special-status plant species with potential to occur include the following. Focused rare plant surveys were performed during the growing season in 2012 and 2017 and none of the species were observed during either year. As a result, no impacts to these species are expected.

- Malibu baccharis (*Baccharis malibuensis*), a CRPR 1B.1 species
- Lucky Morning-glory (*Calystegia felix*) a CRPR 1B.1 species
- Southern tarplant (*Centromadia parryi* ssp. *australis*), a CRPR 1B.1 species
- Smooth tarplant (*Centromadia pungens* ssp. *laevis*), a CRPR 1B.1 species
- California saw-grass (*Cladium californicum*), a CRPR 2B.2 species
- Paniculate tarplant (*Deinandra paniculata*), a CRPR 4.2 species
- Many-stemmed dudleya (*Dudleya multicaulis*), a CRPR 1B.2 species
- Palmer's grapplinghook (*Harpagonella palmeri*), a CRPR 4.2 species
- Southern California black walnut (*Juglans californica*), a CRPR 4.2 species
- Ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*), a CRPR 4.2 species
- Fish's milkwort (*Polygala cornuta* var. *fishiae*), a CRPR 4.3 species
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*), a CRPR 2B.2 species
- Engelmann oak (*Quercus engelmanni*), a CRPR 4.2 species
- San Bernardino aster (*Symphyotrichum defoliatum*), a CRPR 1B.2 species

- Salt spring checkerbloom (*Sidalcea neomexicana*), a CRPR 2B.2 species

Non-listed, special-status wildlife species with potential to occur include arroyo chub, burrowing owl (*Athene cunicularia*), northern harrier (*Circus cyaneus*), golden eagle (*Aquila chrysaetos*), long-eared owl (*Asio otus*), yellow warbler (*Setophaga petechia*), yellow-breasted chat (*Icteria virens*), and vermillion flycatcher (*Pyrocephalus rubinus*). Arroyo chub was not observed on site during surveys for Santa Ana sucker and is considered absent. Protocol surveys for burrowing owl were conducted in 2012 and again in 2017, and although there is suitable foraging habitat, no burrowing owls were observed within the BSA. Northern harrier and golden eagle potentially occur year-round in the BSA for foraging. A northern harrier was observed foraging over agricultural fields in the BSA adjacent to the borrow site; however, no suitable nesting habitat is present. There were a number of yellow warbler and yellow-breasted chat documented nesting within the BSA during riparian bird focused survey work. Vermillion flycatcher was also observed foraging on the golf course and in riparian habitat along Chino Creek. There is suitable habitat for long-eared owl within the tree-dominated vegetation communities adjacent to and along Chino Creek and suitable foraging habitat within adjacent uplands. Long-eared owl was not documented during surveys.

Permanent removal of occupied or potentially occupied breeding habitat for yellow warbler, vermillion flycatcher, and long-eared owl would occur on 3.51 acres, inclusive of 0.53 acre of impacts from bridge construction over Chino Creek that would also result in permanent shading effects on breeding habitat. In addition, the Build Alternative would temporarily affect 0.65 acre of breeding habitat for these species within the work area necessary to complete the project. Permanent removal of occupied or potentially occupied breeding habitat for yellow-breasted chat would occur on 7.35 acres, inclusive of 0.76 acre of impacts from bridge construction over Chino Creek that would also result in permanent shading effects on breeding habitat. In addition, the Build Alternative would temporarily affect 0.62 acre of breeding habitat for these species within the work area necessary to complete the project. There would be a permanent loss of up to 11.81 acres of raptor foraging habitat as a result of the Build Alternative. In addition, the Build Alternative would temporarily affect 37.45 acres of raptor foraging habitat within the work area necessary to complete the project. Avoidance and minimization measures **BIO-1** through **BIO-8** will be implemented for riparian resources to address indirect effects and would also apply to riparian-associated birds. In addition, **BIO-9** will ensure no nesting riparian birds are affected during the bird breeding season and measure **BIO-15** will address indirect effects from construction noise.

Out of the three non-listed special-status amphibians analyzed for potential to occur within the BSA, northern leopard frog (*Lithobates pipiens*) was determined to have suitable habitat present within the BSA. No special-status amphibians were observed during any of the various plant or wildlife surveys conducted for the project. The CNDDB records for northern leopard frog are based on transplanted, introduced individuals and the BSA is well outside of this species' native historic range in Northern California. Any extant frogs in the regional vicinity of the project would be entirely nonnative. Based on this analysis, there are no potentially occurring special-status amphibians within the BSA and no impacts are expected. Avoidance and minimization measures **BIO-1** through **BIO-8** will be implemented for riparian resources to address indirect effects and would also apply to riparian-associated amphibians.

Of the ten special-status reptiles analyzed for their potential to occur within the BSA, four were determined to have suitable habitat present within the BSA: southwestern pond turtle (*Emys marmorata*), coastal whiptail (*Aspidoscelis tigris stegnegeri*), southern California legless lizard (*Anniella stebbinsi*), and two-striped garter snake (*Thamnophis hammondii*). Based on the habitat assessment conducted in 2012 and 2017, suitable habitat for all four special-status reptile species is present along Chino Creek. The potential for southwestern pond turtle to occur in the BSA is low due to few basking sites available and amount of exotic species and predators within Chino Creek. The potential is also low for two-striped garter snake within Chino Creek and Cypress Channel due to the abundance of nonnative predatory species and anthropogenic disturbances in both areas. Suitable habitat for coastal whiptail and southern California legless lizard is present within riparian areas. No special-status reptile species were observed during any of the plant and wildlife surveys conducted for the project. Permanent removal of potential habitat for special-status reptiles would occur on up to 3.48 acres during construction of the Build Alternative, which includes in addition to 0.53 acre of impacts from bridge construction over Chino Creek that would also result in permanent shading effects on riparian habitat. This shading would result in a reduction of habitat quality under the bridge. In addition, the Build Alternative would temporarily affect up to 0.65 acres of riparian habitat suitable to support special-status reptiles within the project footprint. Avoidance and minimization measures **BIO-1** through **BIO-8** will be implemented for riparian resources to address indirect effects and would also apply to riparian-associated reptiles.

A number of special-status bat species have potential to occur within the project vicinity and include pallid bat (*Antrozous pallidus*), Mexican long-tongued bat (*Choeronycteris mexicana*), California western mastiff bat (*Eumops perotis californicus*), western yellow bat (*Lasiurus xanthinus*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*). All of these species are state species of special concern, and are protected under California Fish and Game Code Section 4150. The proposed project has potential for direct and indirect permanent and temporary impacts on bat species foraging and roosting habitat. The proposed road improvement area contains both foraging and potential roosting habitat for bats and the borrow site contains foraging habitat only. A survey will be performed prior to construction to determine presence or absence of bat roosts or maternity colonies (**BIO-18**). If any bat roosts (or potential roosts that bats can utilize prior to construction) are located within the footprint, then additional avoidance and minimization will be implemented (**BIO-19**). Potential noise effects from construction within and adjacent to potential roosting and foraging sites within riparian areas will be addressed by **BIO-15**. **BIO-16** would ensure the project is designed to avoid long-term noise effects to riparian habitat adjacent to the project. Measure **BIO-17** would reduce the potential that bat species would not be hit by vehicles during project operation. Measure **BIO-20** will ensure that night-lighting during construction or during operation of the project does not occur.

b) Less Than Significant with Mitigation Incorporated. Of the natural communities of special concern considered for the project, the communities can be summarized into four of the vegetation communities mapped within the BSA. They are Black Willow Thicket, Mulefat Thicket, Cattail Marsh, and Coast Live Oak Woodland. The riparian natural communities of special concern within the BSA are Black Willow Thicket, Mulefat Thicket, and Cattail Marsh. The project would result in direct effects on 7.94 acres of native riparian habitat comprised of Black Willow Thickets and Mulefat Thickets within the Pine Avenue area. No direct effects would occur on Cattail Marsh community within the borrow site. Permanent direct effects on

3.51 acres of riparian vegetation would occur during construction activities and includes the entire area proposed for grading and vegetation removal, placement of fill in the Pine Avenue site for the access ramp to SR-71, columns associated with the new Chino Creek Bridge and new access roads and ramps. This includes 0.54 acre of existing riparian vegetation that would permanently be shaded once construction of the new Chino Creek Bridge is completed. Shading from the new Chino Creek Bridge is expected to degrade the riparian habitat under the bridge and/or eliminate the riparian canopy. Temporary direct impacts on 0.66 acre of riparian habitat will include temporary work areas during construction, equipment staging, and construction access. All temporarily affected areas will be returned to their original condition after construction is completed. The implementation of measures **BIO-1** through **BIO-9** would ensure that indirect effects on riparian habitat would be reduced or eliminated. Compensation for the permanent loss of 3.51 acres of native riparian vegetation will occur at a minimum of 3:1 ratio through a combination of one or more of the following: on-site enhancement, re-establishment, and/or creation; payment into an in-lieu fee program or other off-site mitigation within Prado Basin as described in measure **BIO-10**. Areas that are temporarily affected will be re-contoured to pre-project elevations wherever possible and restored to pre-existing vegetation communities as described in measure **BIO-11**.

c) Less Than Significant with Mitigation Incorporated. Both Waters of the U.S. (WoUS) and state streambeds are present within the jurisdictional study area (JSA). Twelve features potentially subject to the jurisdiction of the US Army Corps of Engineers (USACE)/Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW) were delineated. Five of the features evaluated had areas that met the wetland criteria for USACE jurisdictional wetlands. Eight of the features evaluated supported riparian habitat. The following table summarizes the jurisdictional waters within the jurisdictional study area.

Table 3.1-1. Potential USACE, RWQCB, and CDFW Jurisdictional Water Resources

Feature	USACE/RWQCB		CDFW	
	Non-Wetland WofUS (acres)	Wetland WoUS	Unvegetated Streambed (acres	Riparian (acres)
Feature 1	0.028	-	0.038	0.551
Feature 2	4.749	2.160	2.216	5.987
Feature 3	0.203	-	0.159	0.427
Feature 4	0.135	-	0.293	0157
Feature 5	1.129	0.061	0.090	3.524
Feature 6	0.097	0.044	0.154	0.132
Feature 7	0.001	-	0.003	-
Feature 8	0.008	-	0.017	-
Feature 9	0.003	-	0.007	-
Feature 10	0.543	-	0.675	-
Feature 11	0.043	0.420	0.043	0.466
Feature 12	0.037	0.010	0.049	0.022
Total	6.976	2.695	3.744	11.266
Source: Natural Environment Study (February 2020)				

As summarized above, there is approximately 6.976 acres of non-wetland WoUS and 2.695 acres of wetland WoUS potentially subject to jurisdiction of USACE and RWQCB under the CWA

within the JSA. Additionally, approximately 3.744 acres of unvegetated streambed and 11.266 acres of riparian vegetation subject to jurisdiction of CDFW under Section 1600 of the Fish and Game Code were mapped within the JSA. Note, however, that because the delineation was performed before the USACE June 2020 Navigable Waters Protection Rule, potential USACE and RWQCB jurisdiction within in each feature may fluctuate based on subsequent delineation analysis during the permitting phase. Some features may be eliminated from federal jurisdiction due to ephemeral exemption.

Project impacts are expected to occur on eight of the features delineated in the JSA. As summarized in the table below, the project will temporarily affect 0.279 acres of non-wetland WoUS and 0.260 acre of wetland WoUS, as shown in the table below. It will permanently affect 1.025 acres of non-wetland WoUS and 2.921 acres of wetland WoUS subject to the jurisdiction of USACE and RWQCB under the CWA. In addition, 0.014 acre of wetlands would be permanently shaded and expected to convert to non-wetland waters.

Table 3.1-2. Impacts on Potential USAE and RWQCB Jurisdiction

Feature ID	Permanent Impacts (Acres)		Permanent Shading Effects* (Acres)	Temporary Impacts (Acres)	
	Wetland	Non-wetland	Wetland	Wetland	Non-wetland
Feature 1	--	--	--	--	--
Feature 2	2.696	0.764	--	0.256	0.129
Feature 3	--	0.156	--	--	0.046
Feature 4	--	--	--	--	--
Feature 5 – Chino Creek	--	0.001	0.014	0.001	0.101
Feature 6	0.041	0.078	--	0.003	0.003
Feature 7	--	--	--	--	--
Feature 8	0.184	0.023	--	--	--
Feature 9	--	0.003	--	--	--
Feature 10	--	--	--	--	--
Feature 11	--	--	--	--	--
Feature 12	--	--	--	--	--
Total	2.921	1.025	0.014	0.260	0.279

* Permanent shading would only occur on wetlands where the new Chino Creek Bridge will be placed. Permanently shaded wetland waters would convert to non-wetland waters; therefore, there would be a loss of 0.014 acre of wetland waters from Chino Creek but no net loss of jurisdictional waters from shading effects.
Source: Natural Environment Study (February 2020)

As summarized in the table below, the project will temporarily affect 0.153 acre of unvegetated streambed and 0.645 acre of associated riparian vegetation, and permanently affect 0.882 acre of unvegetated streambed and 4.133 acres of associated riparian vegetation subject to the jurisdiction of CDFW under Section 1602 of the Fish and Game Code were mapped within the JSA. There will be 0.574 acre of existing riparian vegetation that would be permanently shaded by the new Chino Creek bridge. Although this direct effect would only occur during construction, it is expected that due to the east-west orientation of the bridge, there would be a

lack or reduction of sunlight precluding riparian vegetation from regrowing to the original conditions.

Table 3.1-3. Impacts on Potential CDFW Jurisdiction

Feature ID	Permanent Impacts (Acres)		Permanent Shading Effects* (Acres)	Temporary Impacts (Acres)	
	Riparian	State Streambed	Riparian	Riparian	State Streambed
Feature 1	0.001	--	--	0.022	--
Feature 2	3.403	0.576	--	0.344	0.138
Feature 3	0.309	0.151	--	0.118	0.007
Feature 4	0.009	--	--	0.002	--
Feature 5 – Chino Creek	0.097	0.033	0.574	0.159	--
Feature 6	0.129	0.095	--	0.003	0.008
Feature 7	--	--	--	--	--
Feature 8	0.185	0.027	--	--	--
Feature 9	--	--	--	--	--
Feature 10	--	--	--	--	--
Feature 11	--	--	--	--	--
Feature 12	--	--	--	--	--
Total	4.133	0.882	0.574	0.645	0.153

* Permanent shading on riparian vegetation would only occur where the new Chino Creek Bridge will be placed.
Source: Natural Environment Study (February 2020)

During the construction phase, there is potential for temporary indirect effects to occur on jurisdictional waters and/or wetlands that occur downstream of the project impact area. These temporary indirect effects may include chemical spills, construction-related dust, introduction and spread of invasive species, increased sedimentation, and litter associated with construction. However, these potential indirect effects are expected to be greatly reduced or eliminated with implementation of measures **BIO-1** through **BIO-7** and **BIO-13**.

d) Less Than Significant with Mitigation Incorporated. The project proposes to rebuild and extend Pine Ave through an area where the existing road is closed to public use and where a wide variety of wildlife and their habitats currently exist. The As a result, the new roadway and extension will impose a substantial barrier between areas of existing habitat located adjacent to Pine Avenue. The new roadway will involve include the addition of new embankments with a substantial elevation increase, roadways, and intersections and will have direct impacts, such as permanent and temporary loss of habitats, impediments to movement, habitat fragmentation, increased vehicular traffic resulting in increased noise and disturbances, and increased risk of wildlife-vehicle collisions. These all pose a safety hazard to both wildlife and humans. Indirect impacts may include introduction of littering, roadway pollution, invasive plant species spread and introductions, edge effects, wildlife habitat avoidance, and increased risk of fires.

The proposed Chino Creek Bridge has been preliminarily designed to be approximately 15 feet above the creek (between the creek and bottom of bridge deck) and approximately 500 feet long. This height and bridge length will allow for permeability of all groups of wildlife species

through the riparian corridor including fish, reptiles, amphibians, birds, and large mammals such as mule deer. At Chino Creek, however, the existing mature riparian canopy is taller than 15 feet, and once the adjacent habitat is restored post-construction, will likely result in an adjacent riparian canopy taller than the proposed bridge. This will introduce potential for aerial species such as birds (including least Bell's vireo) and bats to be struck by vehicles when passing over the bridge at Chino Creek while moving between adjacent areas of riparian habitat. Areas immediately west of Chino Creek, however, will have lower vegetation and birds are expected to pass freely under the bridge.

West of the proposed Chino Creek Bridge between Chino Creek and Pomona Rincon Road, the project proposes a series of five, 12-foot-wide by 5-foot-tall RCB culverts. These culverts may facilitate movement of various small- to medium-sized wildlife species between the north and south sides of the Pine Avenue roadway. However, if design features such as energy dissipaters or rip-rap are situated in or immediately outside of the culverts, this may impede wildlife movement. In addition, the presence of water in the culverts may preclude use by some species. Minor design considerations (i.e., avoiding energy dissipaters/rip-rap features and wildlife fencing) would facilitate wildlife movement and permeability through the project area. The current design plan does not include rip rap at each culvert location. The implementation of measures **BIO-1** through **BIO-9** would ensure wildlife that move through the Pine Avenue project site are not affected during project construction. The Chino Creek Bridge will also be designed to facilitate wildlife movement (**BIO-24**).

e) Less Than Significant with Mitigation Incorporated. Within the BSA, coast live oak woodland occurred in one small stand at the far eastern end of the Pine Avenue project site near the intersection of Pine Avenue and Fern Avenue. The coast live oak woodland on the south side of Pine Avenue would be removed during construction of the project. Measure **BIO-12** will ensure that any oak trees removed by the project are replaced in accordance with the City of Chino Zoning Code Design Standards (Municipal Code Section 20.19.040) and comply with the City of Chino Oak Tree Ordinance. The project will also comply with the City of Chino Hills Tree Preservation Ordinance (Chapter 16.90) to maintain, preserve and protect certain species of trees and certain mature trees within the City of Chino Hills, where applicable.

f) No Impact. The project is not located within a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan area and would not have any impact as a result.

V. CULTURAL RESOURCES: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐

V. CULTURAL RESOURCES: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

3.2.5 CEQA Significance for Cultural Resources

a), b) Less than Significant with Mitigation Incorporated. A cultural resources survey and records search of the project APE was conducted for the project. Approximately 10.29 acres of land were not surveyed because they were flooded from rains and covered by dense vegetation. No new prehistoric or historical archaeological resources were identified as a result of the survey conducted within the project APE. Additionally, no cultural resources were observed in the proposed borrow site. The majority of resources within the project area are situated in upland locations above and away from the El Prado Flood Control Basin, where the APE is located. A topographic map from 1902 show this area to be historically within a flood plain for Chino Creek and the nearby Santa Ana River, which is supported by the alluvial soils observed during the cultural survey of the APE area. This suggest that areas adjacent to and above the El Prado Flood Control Basin were more likely to be inhabited prehistorically due to the higher elevation above the prehistoric flood zone, prior to modern flood control methods. Evidence of subsurface prehistoric deposits that have been observed in the floodway, however, were destroyed during excavation activities associated with agriculture and recent commercial development of the area. Although there are no historic properties within the APE, flooding and vegetation in portions of the APE did not allow survey access. Much of the project area is covered in alluvium, which may cap buried stable surfaces that may contain archaeological resources. Subsurface grading activities for the project have the potential to encounter previously unidentified archaeological resources on these stable sediments, particularly in the margins of the floodplain where human activities may have been obscured by the deposition of younger alluvial soils by occasional flooding. Less than significant impacts are anticipated with implementation of measures **CR-1, CR-2**, **CR-3,** and **CR-4**.

Pursuant to CEQA Assembly Bill 52 (AB52), letters were sent to the following Native American groups by the City of Chino, requesting information on cultural resources in the project area:

- Gabrieleno Band of Mission Indians – Kizh Nation (Mr. Andrew Salas)
- Gabrieleno/Tongva San Gabriel Band of Mission Indians (Mr. Anthony Morales)
- Gabrielino/Tongva Nation (Ms. Sandonne Goad)
- Gabrielino Tongva Indians of California Tribal Council (Mr. Robert Dorame)
- Gabrielino-Tongva Tribe (Ms. Linda Candelaria)
- San Fernando Band of Mission Indians (Mr. John Valenzuela)
- Soboba Band of Luiseno Indians (Mr. Joseph Ontiveros)

The City of Chino received one response letter from Mr. Andrew Salas, Chairperson for the Gabrieleno Band of Mission Indians – Kizh Nation; and one response phone call from Mr.

Anthony Morales, Chairperson for the Gabrieleno/Tongva San Gabriel Band of Mission Indians. Refer to Section 2.1.5.2 for additional details on Native American coordination that occurred for this project.

c) Less than Significant With Mitigation Incorporated. The proposed project is not located near a formal cemetery; project improvements would occur within and along an existing roadway. The project is not anticipated to disturb any human remains; however, should human remains be discovered, work will stop in the area and the county coroner will be contacted. If the remains are thought to be Native American, the coroner will contact the NAHC, as indicated in measure **CR-2**.

VI. ENERGY Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

3.2.6 CEQA Significance for Energy

a), b) Less Than Significant Impact. Implementation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during either the construction phase or operation. Furthermore, the project would not conflict with or obstruct state or local plans for renewable energy or energy efficiency.

VII. GEOLOGY AND SOILS: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				

VII. GEOLOGY AND SOILS: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

3.2.7 CEQA Significance Determination for Geology and Soils

a i), a ii), a iii), b), c) Less Than Significant Impact. The proposed project site is located in the seismically active Southern California region and would involve extending Pine Avenue from SR-71 eastward to El Prado Road and widening Pine Avenue to a four-lane arterial from El Prado Road to Euclid Avenue. Design and construction of the proposed project would follow the City of Chino's current roadway and structure seismic design standards to minimize potential impacts.

a iv), d), e) Less Than Significant Impact. Overall, the risk of landslides in the City of Chino is relatively low, as the City is generally flat and level with few areas consisting of steep slopes. However, the City of Chino includes areas of soils susceptible to liquefaction. The liquefaction potential is greatest in the southern portion of the City of Chino, near Prado Dam, where the corresponding depth of groundwater is low. The project would follow the City of Chino's current roadway and structures engineering standards to minimize potential impacts.

f) Less Than Significant with Mitigation Incorporated. Based on the Paleontological Resource Assessment prepared for the project, construction activities, including at the borrow site, have the potential to extend deep enough to encounter Pleistocene older alluvial fan deposits, which have a high paleontological potential. As such, paleontological monitoring is recommended for earthwork operations that would impact Pleistocene older alluvial fan deposits or strata of the Sycamore Canyon Member of the Puente Formation. In addition, grading operations in areas underlain by Quaternary younger alluvial and wash deposits that extend greater than 5 feet below existing grade are also recommended for paleontological monitoring. Refer to measures **PALEO-1** through **PALEO-8**.

VIII. GREENHOUSE GAS EMISSIONS: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

3.2.8 CEQA Significance Determination for Greenhouse Gas Emissions

a), b) Less Than Significant Impact. An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHG. 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. The task of gathering sufficient information on a global scale regarding all past, current, and future projects to make this determination is a difficult, if not impossible, task.

GHG emissions for transportation projects can be divided into those produced during operations and those produced during construction. The following represents a best-faith effort to describe potential GHG emissions related to the proposed project.

Construction GHG emissions would result from material processing, on-site construction equipment, or traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; however, their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions

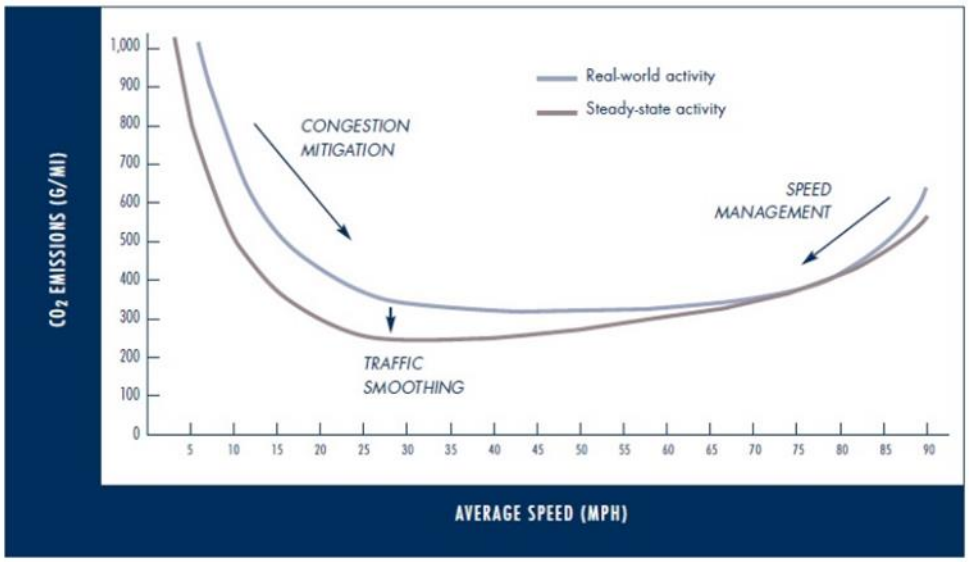
produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities. Construction-period emissions would be 3,550 metric tons over the 24-month construction duration.

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/efficiency. To be most effective, all four strategies should be pursued concurrently.

FHWA supports these strategies to lessen climate change impacts, which correlate with efforts that the California is undertaking to reduce GHG emissions from the transportation sector.

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. To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, GHG emissions, particularly CO_2, may be reduced.

Figure 9. Possible Use of Traffic Operation Strategies in Reducing On-Road CO_2 Emissions



The proposed project is identified in the SCAG 2020–2045 RTP/SCS under project number 200207. The SCAG 2020–2045 RTP/SCS includes several major initiatives that the proposed project would either directly implement or support. The proposed project would directly implement the RTP/SCS initiative to improve highway and arterial capacity by adding capacity in the form of the widened replacement bridge, which is specifically identified as part of the initiative (SCAG 2016:6). In addition, the proposed project would be consistent with the SCAG Congestion Management Process (CMP), which is part of SCAG's integrated approach to "improving and optimizing the transportation system" by providing for safe and effective management of the regional transportation system through the use of monitoring and

maintenance, demand reduction, land use, and operational management strategies as well as strategic capacity enhancements (SCAG 2016:86). Each of the major initiatives of the RTP/SCS identified above and the CMP contributes to the overall GHG reduction efforts regarding mobile sources within the SCAG region. As discussed in the 2020–2045 RTP/SCS, the target reduction for GHGs by 2035 with RTP/SCS implementation is 19 percent per capita relative to a 2005 baseline.

Annual operational emissions would be 66,727,714 metric tons of CO_2e at the 2023 opening year under the Build Alternative and 57,871,120 metric tons of CO_2e at the 2040 horizon year under the Build Alternative.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
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?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

3.2.9 CEQA Significance Determinations for Hazards and Hazardous Materials

a), g) Less Than Significant Impact. Implementation of the proposed project is not expected to create a significant hazard to the public or environment. According to the Phase I Environmental Site Assessment (ESA) prepared for the project, Pine Avenue/El Prado Road was identified on the CDL database with an abandoned lab waste found at the property in September 1996. Based

on the single incident and presumed clean-up operations at the time, this listing was not considered an environmental concern. The Phase I Environmental Site Assessment also found no evidence of recognized environmental conditions (RECs) in connection to the project except for the following:

- Based on historical uses of the project for agricultural uses and close vicinity to the El Prado Golf Course, soils adjacent to the property may be impacted by agricultural chemicals including pesticides, herbicides, and metals.

- The presence of Pine Avenue, El Prado Road, and Pomona Rincon Road within the property limits for several decades indicates that exposed soil in the immediate vicinity is a concern for aerially deposited lead.

- Historically, adjoining properties were used for dairy farm operations. Therefore, there is a potential for vapor migration by methane gas.

Based on the follow-up Phase II Environmental Site Assessment prepared for the project, the findings concluded that concentrations of metals and pesticides reported in the shallow soils across from the site are less than the screening levels for residential uses, and the Methane Survey conducted for the project, showed no evidence of methane gas at the site.

b), c), d), e), f) Less Than Significant Impact. No schools are located within a quarter-mile of the project site. The proposed project is within two miles of the Chino Airport. The project would not result in a safety hazard or excessive noise for people residing or working in the project area. The project would extend Pine Avenue to SR-71 and widen Pine Avenue to a four-lane arterial from El Prado Road to Euclid Avenue. The proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires.

IX. HYDROLOGY AND WATER QUALITY: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☒	☐	☐
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 a substantial erosion or siltation on-or off-site.	☐	☒	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off site.	☐	☒	☐	☐

IX. HYDROLOGY AND WATER QUALITY: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No 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	☐	☒	☐	☐
iv) impede or redirect flood flows?	☐	☒	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☒	☐	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☒	☐	☐

3.2.10 CEQA Significance Determination for Hydrology and Water Quality

a), b), c), d), e) Less Than Significant with Mitigation Incorporated. Potential impacts of the proposed project on existing water quality include temporary increases in sediments, oil, grease, and chemical pollutants during construction as well as potential long-term discharges of sediments and other pollutants that collect in stormwater runoff. Short-term or temporary construction impacts on water quality have the potential to occur during demolition of existing pavement and concrete; minor land disturbances from grading, material and equipment use, and storage activities at staging areas; and other construction activities. The proposed project would disturb up to approximately 44 acres of soil area. However, water quality impacts would be avoided or minimized because construction would comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (State Water Resources Control Board 2013). Long-term impacts on water quality could occur from the increased impervious area, operational and maintenance activities, and inspections. The proposed project would increase impervious surface area by approximately 10.35 acres. However, long-term impacts from these operational and maintenance activities would be avoided or minimized because operations would comply with the Santa Ana Municipal Separate Storm Sewer Systems Permit for the portion of the Santa Ana River watershed within San Bernardino County (Order No. R8-2010-0036, NPDES Permit No. CAS618036). In addition to agency coordination and permit compliance, the proposed project design would include design measures to maintain pre-project drainage patterns (i.e., flows and rates) and protect water quality from further impairment. Measures **WQ-1** and **WQ-2**, would be implemented to avoid or minimize the potential hydrology and water quality impacts of the proposed project.

X. LAND USE AND PLANNING: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.2.11 CEQA Significance Determinations for Land Use and Planning

a), b) No Impact. The proposed project would not divide an established community. The surrounding land uses consist of industrial and commercial buildings, and the El Prado Golf Course. The extension of Pine Avenue would not result in dividing any established communities. The proposed project would provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand in the Cities of Chino and Chino Hills, consistent with both Cities Circulation Elements. The extension of Pine Avenue would not conflict with any goals, objectives, or policies of land use plans for either the City of Chino or City of Chino Hills.

XI. MINERAL RESOURCES: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.2.12 CEQA Significance Determinations for Mineral Resources

a), b) No Impact. According to the City of Chino General Plan Mineral Resource Zones Map, the majority of the City and project is located in an area designated as MRZ-3. The MRZ-3 Mineral Resource Zone is defined as an area where the significance of mineral deposits cannot be determined from the available data. The MRZ-3 Zone contains sand and gravel deposits, although there is insufficient data to ascertain whether these mineral deposits are significant. As the project would result in extending an existing roadway, in an area consisting of industrial and commercial uses, loss of a known mineral resources of value to the region and the residents of the state is not expected to occur. There are no known locally important mineral resource recovery sites delineated on the general plan, specific plan, or other land use plans.

XII. NOISE: Would the project result in:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
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 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?	☐	☒	☐	☐

3.2.13 CEQA Significance Determinations for Noise

a), b), c) Less Than Significant with Mitigation Incorporated. Based on the Noise Study Report prepared for the project, design year traffic noise levels under the No-Build and Build conditions are predicted to range from 48 to 69 dBA Leq(h) under the No-Build condition and 49 to 69 dBA Leq(h) under the Build condition. No impacts would occur because there are no noise abatement criteria (NAC) for Activity Category F or G land uses and predicted noise levels on Activity Category C land uses do not approach or exceed the impact criteria of 67 dBA Leq(h). Traffic noise levels would therefore not approach or exceed any NAC at any of the receivers identified in this analysis. Therefore, operational traffic noise impacts would not occur.

During construction of the proposed project, noise from construction activities would intermittently dominate the noise environment in the immediate area of construction. Conventional construction equipment is expected to generate maximum noise levels that would range from 75 to 96 decibels (dB) at a distance of 50 feet. Noise from pile driving would generate a maximum noise level of approximately 96 dBA at a distance of 50 feet. Noise produced by construction equipment would diminish at a rate of about 6 dB per doubling of distance. No adverse noise impacts from construction are anticipated because construction activities would be conducted in accordance with the provisions in Caltrans Standard Specifications, Section 14-8.02, Noise Control, and applicable local noise standards. Furthermore, the Contractor will implement appropriate additional noise mitigation measures, which may include changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources which would minimize temporary noise impacts from construction.

XIII. POPULATION AND HOUSING: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.2.14 CEQA Significance Determinations for Population and Housing

a), b) No Impact. The Cities of Chino and Chino Hills as well as western Riverside County have experienced population growth. Current and proposed development would result in increased traffic demand in the area of Pine Avenue. The proposed project would provide an additional link to SR-71 from Euclid Avenue to accommodate this existing and future traffic demand in the Cities of Chino and Chino Hills, consistent with both Cities Circulation Elements. As such, the project itself would not induce substantial unplanned population growth but would be in response to current and future growth expected in the area. The project would not displace substantial numbers of existing people and would not require the need for construction of replacement housing.

XIV. PUBLIC SERVICES:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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 public services::				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒

3.2.15 CEQA Significance Determinations for Public Services

a) Fire Protection, Police Protection, and Parks. Less Than Significant Impact. The Chino Valley Fire District provides fire and emergency services in the project area as well as for the City of Chino and Chino Hills and surrounding unincorporated areas of San Bernardino County. The nearest fires station is Station 63 located at 7550 Kimball Avenue in Chino and Station 62 located at 5551 Butterfield Ranch Road in Chino Hills. The Chino Police Department provides for the public safety response needs of the project area within the City of Chino. The Chino Police Department is located at 5450 Guardian Way in Chino. The City of Chino Hills has contracted with the San Bernardino County Sheriff's Department for law enforcement services since 1991. The nearest Chino Hills police station is located at 14077 Peyton Drive in Chino Hills. The proposed project involves the extension and widening of portions of Pine Avenue and would not result in an increase in population or the need for additional facilities, nor would response times of emergency personnel be increased. However, construction activities have the potential to result in temporary disruptions during the construction period. This could lead to an increase in delay times for emergency response vehicles during construction. The project would include the preparation and implementation of a Traffic Management Plan (TMP), which would include limiting temporary lane closures to late night and early morning off-peak periods, and detours would be clearly established and marked for motorists. In order to ensure that existing lanes of traffic are maintained through the construction of the project, a detailed construction staging plan will be created during the PS&E phase. The TMP would be prepared and approved prior to construction. The TMP would also include a public awareness program through the use of local media, newsletters, flyers, and/or social media and internet. Construction impacts would be short term, lasting only the length of construction, and would cease upon completion of construction. The project would provide an additional link to SR-71 from Euclid Avenue and would increase efficiency for fire, police, and emergency vehicles traveling along SR-71 and would be a beneficial impact that would provide an additional route of travel when responding to emergencies in the area. The El Prado Golf Course is located adjacent to Pine Avenue in the project area. The project would result in construction of a 14-foot wide by 8-foot high golf cart undercrossing of Pine Avenue, east of the Cypress Channel and construction of golf cart pathways on both sides of the undercrossing. The project would also modify the existing golf cart pathway east of El Prado Road, on the north side of Pine Avenue. Access to the El Prado Golf Course would remain at all times during construction of the project and would not affect patrons of the golf course from accessing the golf course during regular business hours. The project would not result in impacts on the use of the El Prado Golf Course or other public facilities.

a) Schools, Other Public Facilities. No Impact. No impacts are anticipated on schools or other public facilities.

XV. RECREATION:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.2.16 CEQA Significance Determination for Recreation

a), b) No Impact. The proposed project does not include a residential or other development component that would result in an increase in residential or employee populations that could increase the demand for or use of any existing neighborhood parks, regional parks, or other recreational facilities such that physical deterioration would occur, nor would it require the construction or expansion of existing recreational facilities.

XVII. TRANSPORTATION: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

3.2.17 CEQA Significance Determinations for Transportation/Traffic

a), c), d) Less Than Significant Impact. The City of Chino and adjacent City of Chino Hills have experienced population growth. Current land use proposals as well as existing residential land uses are expected to generate increased traffic demand in the project area. Pine Avenue currently ends at El Prado Road with no connection with SR-71. Extending Pine Avenue would provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demands. The project would also provide another access route for emergency vehicles

traveling through the area. Furthermore, the extension of Pine Avenue to SR-71 would be consistent with the City of Chino and City of Chino Hills General Plan Circulation Element.

b) Less Than Significant Impact. The City of Chino initiated this project in 2008 and has since been engaged with various discussions and meetings, both internally and with other public agencies including Caltrans and the U.S. Army Corp of Engineers. Various aspects of the project have been discussed, including the project design, borrow site, and impacts to Chino Creek and other considerations, and the project has undergone various revisions based on these discussions since 2008. The overall footprint was finalized in 2017 and preparation of technical studies began at that time. The City of Chino has determined that since the technical studies for the project were started well before the implementation date of July 1, 2020 for Section 15064.3 subdivision (b), performing vehicle miles traveled (VMT) analysis for this project is not applicable. Furthermore, the City of Chino, as the CEQA Lead Agency, has determined that VMT analysis is not an applicable metric for the project.

XVIII. TRIBAL CULTURAL RESOURCES: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resources, 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:				
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	☐	☒	☐	☐
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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

3.2.18 CEQA Significance Determinations for Tribal Cultural Resources

a), b). Less than Significant with Mitigation Incorporated. The NAHC was contacted regarding the Project on December 9, 2016. The NAHC responded in a letter on December 14, 2016 stating that a search of its Sacred Lands Database did not yield any sacred lands or traditional cultural properties within the project area. In addition, the NAHC provided a list of Native American contacts who may have additional information on resources in the area. Consultation letters and maps were sent to each of these Native American contacts on February 23, 2017. One response letter was received from Andrew Salas, Chairperson for the Gabrieleno

Band of Mission Indians- Kizh Nation on March 14, 2017 and one response phone call from Anthony Morales, Chairperson for the Gabrieleno/Tongva San Gabriel Band of Mission Indians on March 17, 2017. The consultation with Native American Tribes was re-initiated on July 16, 2018, with follow-up calls on December 4, 2018. A response from Andrew Salas of the Gabrielino Band of Mission Indians-Kizh Nation indicated that they were in communication with the City of Chino regarding the project and was requesting monitoring for the project area due to the presence of a prehistoric site. Anthony Morales of the Gabrielino/Tongva San Gabriel Band of Mission Indians indicated on December 4, 2018 that he had requested to be a part of future consultations and for an archaeological monitor and Native American Monitor from the Gabrielino /Tongva San Gabriel Band of Mission Indians be present for ground disturbing activities. Joseph Ontiveros of the Soboba Band of Luiseno Indians responded on December 4, 2018 that the project area was outside of their tribal area and to consult with the Gabrielino Tribes.

XIX. UTILITIES AND SERVICE SYSTEMS: Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

3.2.19 CEQA Significance Determinations for Utilities and Service Systems

a), b), c) d), e) No Impact. Construction of the proposed project is not expected to generate the need for additional water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities. The project would install local area storm drains along Pine Avenue, installation of a traffic signal at the intersection of Pomona Rincon Road at Pine Avenue and El Prado Road at Pine Avenue, and relocating existing overhead utilities and utility poles along the project alignment. However, the relocation and adjustment of utilities to accommodate the project improvements would not result in significant environmental effects. No

new or expanded entitlements are needed with the project and the project would not require wastewater treatment. The embankments and crossings would result in no adverse hydraulic impacts from the existing condition, and would allow water to backflow in the reservoir without impediment. The project would have a de minimis impact on the hydraulic conveyance capacity within the Prado Basin and would allow water to backflow in the reservoir without impediment. The proposed project would require the use of a local landfill, if applicable, to dispose of demolition materials during construction. The use of local landfills would be temporary, lasting the duration of construction. Furthermore, the proposed project would be in compliance with all federal, state, and local solid waste statutes and regulations.

XX. WILDFIRE: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
d) Expose people or structure to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability or drainage changes?	☐	☐	☒	☐

3.2.20 CEQA Significance Determinations for Wildfire

a), b), c), d) Less Than Significant Impact. According to the City of Chino General Plan Safety Element, Chino's flammable grasslands, agricultural vegetation, and warm and dry summers create a situation that results in the potential for wildland fires. Based on the City of Chino Hills General Plan Safety Element, approximately 75 percent of Chino Hills is located within the City's designated Fire Hazard District. Lands within this district include Chino Hills State Park, Carbon Canyon areas, and southern portions of Chino Hills generally west of Butterfield Ranch Road and south of Soquel Canyon Drive. To reduce the risk of wildfire, Chino Hills adopts a Fire Hazard Overlay Zone which establishes and enforces policies that are included in the City of Chino Hills Safety Element's Goals, Policies, and Actions. Based on the City of Chino Hills Fire Hazard Overlay District Map, the project site is designated as being within the No Hazard area and lies outside of the Fire Hazard District designation. Furthermore, the California Department of Forestry and Fire Protection (Cal Fire) has developed a Fire Hazard Severity Scale using fuel loading (vegetation), fire weather (winds, temperatures, humidity), and topography to evaluate and designate potential fire hazards. There are no Very High Fire Hazard Severity Zones within the Local Responsibility Areas or State Responsibility Areas in the project area within the City

of Chino or Chino Hills. Cal Fire also maintains data regarding the Wildland Urban Interface (WUI) fire threat. WUI data describe relative wildfire risk to areas of significant population density. Risk is expressed in terms of a "Threat to Community Areas" value. The southwest portions of the City, including the project area, are in the "Very High Threat to Community Areas" range. The project would not impair an adopted emergency response or evacuation plan. The project would result in a beneficial impact by providing an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand in the Cities of Chino and Chino Hills. The design of the project would not exacerbate wildfire risks or expose people to pollutant concentrations from a wildfire or contribute to the uncontrolled spread of a wildfire. By providing an additional link to SR-71, the project would provide an additional access point for emergency personnel including fire and police services to respond to emergency situations in the area. Furthermore, the project would not expose people or structures to significant risks from flooding or landslides as a result of post-fire slope instability.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to 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?	☐	☒	☐	☐
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)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

3.2.21 CEQA Significance Determinations for Mandatory Findings of Significance

a) Less Than Significant with Mitigation Incorporated. The proposed project would not 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, or reduce the number or restrict the range of a rare or endangered plant or animal species. The natural vegetation communities mapped within the biological study area (BSA) include Black Willow Thickets, mulefat thickets, tamarisk thickets, cattail marsh, salt grass flats (disturbed), annual brome grasslands, coast live oak woodland, upland mustards, poison hemlock patches, perennial pepper weed patches, Hinds's Walnut and related stands, and Eucalyptus stands. Approximately 10 least Bell's vireo territories were found in the BSA. There were also a number of other

special-status species observed in the BSA, including white-tailed kite (Elanus leucurus), yellow warbler (Setophaga petechia), yellow-breasted chat (Icteria virens), vermillion flycatcher (Pyrocephalus rubinus), and northern harrier (Circus cyaneus). Of these species, northern harrier would only forage within BSA, while the remainder were breeding and foraging within the BSA. In addition, the proposed BSA has a potential to support a number of other special-status wildlife. No special-status plant species were detected during any of the general and focused studies conducted in 2012 and 2017. Through the incorporation of avoidance, minimization, and mitigation measures (BIO-1 through BIO-24) the proposed project would result in a less than significant with mitigation incorporated.

b), c) Less Than Significant Impact. The proposed project would not result in cumulatively considerable impacts when combined with past, present, and reasonably foreseeable future projects and therefore would have no cumulative impacts. The proposed project would not have environmental effects that would cause substantial effects on human beings, either directly or indirectly, as the purpose of the project is to provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand in the Cities of Chino and Chino Hills.

3.3 Wildfire

3.3.1 Regulatory Setting

Senate Bill 1241 required the Office of Planning and Research, the Natural Resources Agency, and the California Department of Forestry and Fire Protection 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 fire hazard severity zones. The 2018 updates to the CEQA Guidelines expanded this to include projects "near" these very high fire hazard severity zones.

3.3.2 Affected Environment

The California Department of Forestry and Fire Protection (Cal Fire) has developed a Fire Hazard Severity Scale using fuel loading (vegetation), fire weather (winds, temperatures, humidity), and topography to evaluate and designate potential fire hazards. There are no Very High Fire Hazard Severity Zones within the Local Responsibility Areas or State Responsibility Areas in the City of Chino.

3.3.3 Environmental Consequences

Cal Fire maintains data regarding the Wildland Urban Interface (WUI) fire threat. WUI data describe relative wildfire risk to areas of significant population density. Risk is expressed in terms of a "Threat to Community Areas" value. The southwest portions of the City, including the project area, are in the "Very High Threat to Community Areas" range. However, the project would not impair an adopted emergency response or evacuation plan. The project would result in

a beneficial impact by providing an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand in the Cities of Chino and Chino Hills. As such, the project would have the potential of improving travel times for emergency response vehicles. The design of the project would not exacerbate wildfire risks or expose people to pollutant concentrations from a wildfire or contribute to the uncontrolled spread of a wildfire.

3.3.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are anticipated to be required.

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Chapter 4 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 greenhouse gas (GHG) emissions reduction and climate change research and policy. Climate change in the past has generally occurred gradually over millennia, or more suddenly in response to cataclysmic natural disruptions. The research of the Intergovernmental Panel on Climate Change and other scientists over recent decades, however, has unequivocally attributed an accelerated rate of climatological changes over the past 150 years to GHG emissions generated from the production and use of fossil fuels.

Human activities generate GHGs consisting primarily of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; while it is a naturally occurring and necessary component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2 that is the main driver of climate change. In the U.S. and in California, transportation is the largest source of GHG emissions, mostly CO_2.

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.

4.1 Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation

infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (FHWA 2019). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of sustainability."(FHWA n.d.) Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

The federal government has taken steps to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) as amended by the Energy Independence and Security Act (EISA) of 2007; and Corporate Average Fuel Economy (CAFE) Standards. This act established fuel economy standards for on-road motor vehicles sold in the United States. The U.S. Department of Transportation's National Highway Traffic and Safety Administration (NHTSA) sets and enforces the CAFE standards based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States. The Environmental Protection Agency (U.S. EPA) calculates average fuel economy levels for manufacturers, and also sets related GHG emissions standards under the Clean Air Act. Raising CAFE standards leads automakers to create a more fuel-efficient fleet, which improves our nation's energy security, saves consumers money at the pump, and reduces GHG emissions (U.S. DOT 2014).

U.S. EPA published a final rulemaking on December 30, 2021, that raised federal GHG emissions standards for passenger cars and light trucks for model years 2023 through 2026, increasing in stringency each year. This rulemaking revised lower emissions standards that had been previously established for model years 2021 through 2026 in the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part Two in June 2020. The updated standards will result in avoiding more than 3 billion tons of GHG emissions through 2050 (U.S. EPA 2021a).

State

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to, the following:

EO S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

Assembly Bill (AB) 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (ARB) create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020

(Health and Safety Code [H&SC] Section 38551(b)). The law requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Senate Bill (SB) 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

EO B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$). [GHGs differ in how much heat each traps in the atmosphere, called global warming potential, or GWP. CO_2 is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called “carbon dioxide equivalent”, or CO_2e. The global warming potential of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2.] Finally, it requires the Natural Resources Agency to update the state’s climate adaptation strategy, Safeguarding California, every 3 years, and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

SB 1386, Chapter 545, 2016, declared “it to be the policy of the state that the protection and management of natural and working lands … is an important strategy in meeting the state’s greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands.”

SB 743, Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles traveled, to promote the state’s goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

SB 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires ARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

EO B-55-18 (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.

EO N-19-19 (September 2019) advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce GHG emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This EO also directs ARB to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

4.1.1 Environmental Setting

The proposed project is in an urban area of San Bernardino County with a well-developed road and street network. The project area contains mainly commercial, industrial, and recreational uses. A Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) by the Southern California Association of Governments (SCAG) guides transportation and housing development in the project area. guides transportation and housing development in the project area. The San Bernardino Countywide Vision Plan and San Bernardino County Regional Greenhouse Gas Reduction Plan (GHGRP) addresses GHGs in the project area.

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. 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. U.S. EPA is responsible for documenting GHG emissions nationwide, and the ARB does so for the state, as required by H&SC Section 39607.4.

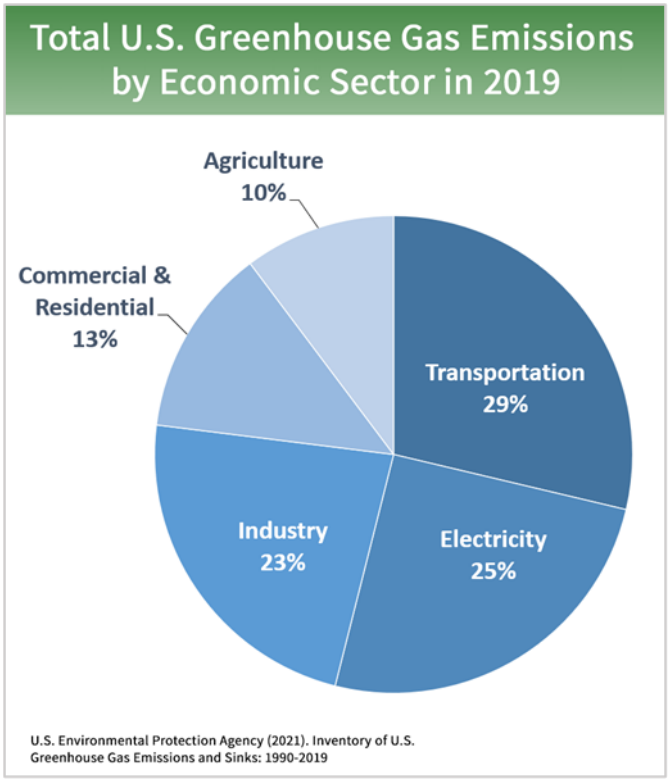
GHG Inventories

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. U.S. EPA is responsible for documenting GHG emissions nationwide, and the ARB does so for the state, as required by H&SC Section 39607.4. Cities and other local jurisdictions may also conduct local GHG inventories to inform their GHG reduction or climate action plans.

National GHG Inventory

The annual GHG inventory submitted by the U.S. EPA to the United Nations provides a comprehensive accounting of all human-produced sources of GHGs in the United States. The 1990 2019 inventory found that overall GHG emissions were 6,558 million metric tons (MMT) in 2019, down 1.7 percent from 2018 but up 1.8% from 1990 levels. Of these, 80 percent were CO_2, 10 percent were CH_4, and 7 percent were N_2O; the balance consisted of fluorinated gases. CO_2 emissions in 2019 were 2.2 percent less than in 2018, but 2.8 percent more than in 1990. As shown on Figure 12, the transportation sector accounted for 29 percent of U.S. GHG emissions in 2019 (U.S. EPA 2021b, 2021c).

Figure 12. U.S. 2019 Greenhouse Gas Emissions (Source: U.S. EPA 2021d)



State GHG Inventory

CARB collects GHG emissions data for transportation, electricity, commercial/ residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2021 edition of the GHG emissions inventory reported emissions trends from 2000 to 2019. It found total California emissions were 418.2 $MMTCO_2e$ in 2019, a reduction of 7.2 $MMTCO_2e$ since 2018 and almost 13 $MMTCO_2e$ below the statewide 2020 limit of 431 $MMTCO_2e$. The transportation sector (including intrastate aviation and off-road sources) was responsible for about 40 percent of direct GHG emissions, a 3.5 $MMTCO_2e$ decrease from 2018 (Figure 13). Overall statewide GHG emissions declined from 2000 to 2019 despite growth in population and state economic output (Figure 14) (ARB 2021a).

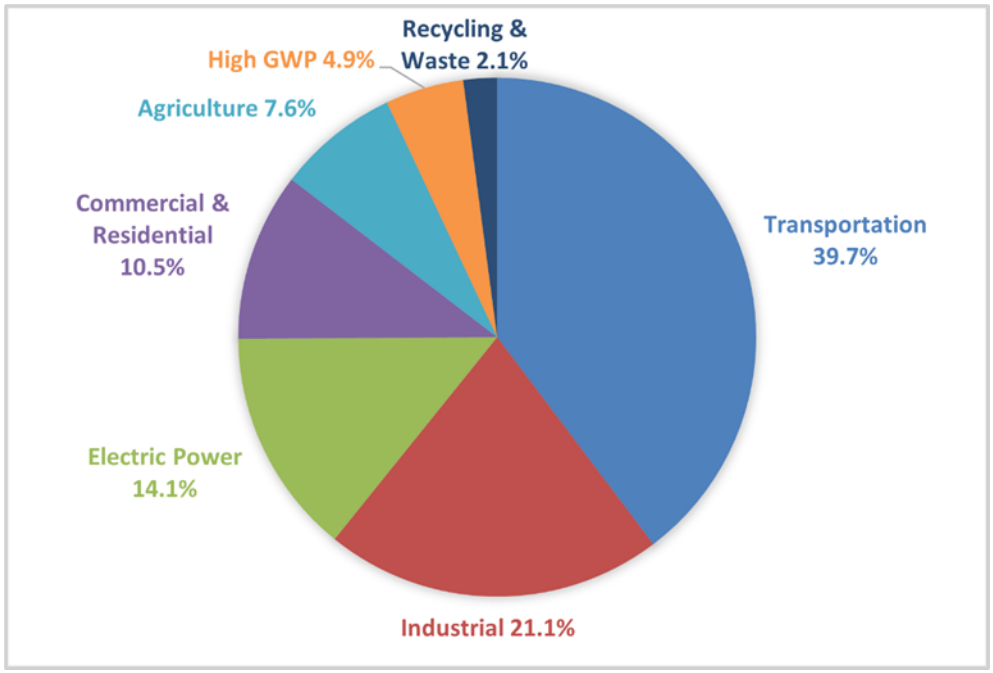


Figure 13. California 2019 Greenhouse Gas Emissions by Economic Sector (Source: ARB 2021a)

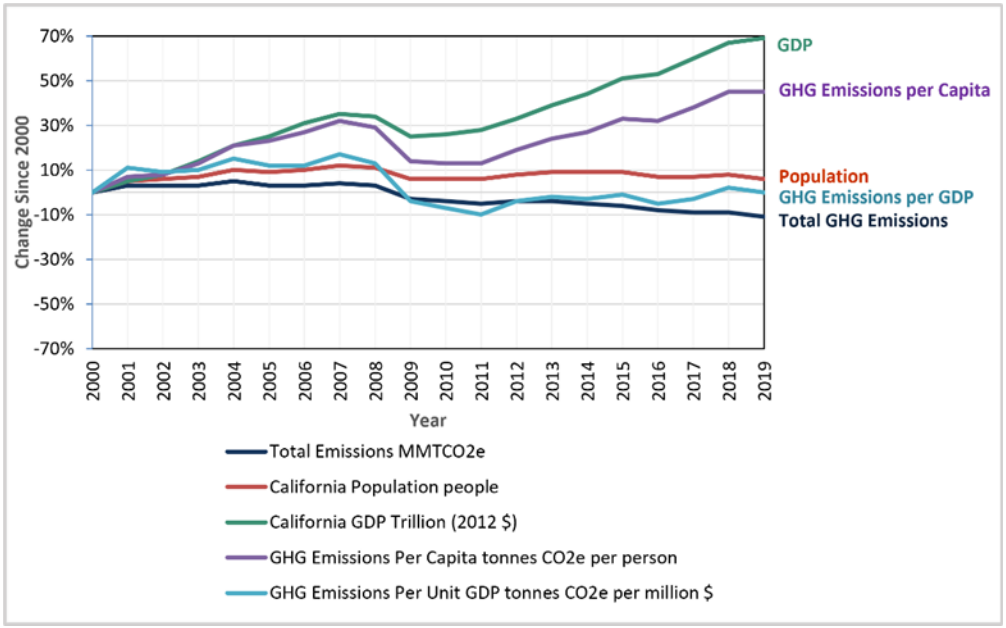


Figure 14. Change in California GDP, Population, and GHG Emissions since 2000 (Source: ARB 2021a)

AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update it every 5 years. ARB adopted the first scoping plan in 2008. The second updated plan, California's 2017 Climate Change Scoping Plan, adopted on December 14, 2017, reflects the 2030 target

established in EO B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions.

Regional Plans

CARB sets regional GHG reduction targets for California's 18 metropolitan planning organizations (MPOs) to achieve through planning future projects that will cumulatively achieve those goals, and reporting how they will be met in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The proposed project is included in the RTP/SCS for the SCAG region as RTP ID 200207-200207.The regional reduction target for SCAG is 19 percent by 2035 (CARB 2021b).

The proposed project is included in SCAG's 2020-2045 RTP/SCS (SCAG 2020) as RTP ID 200207-200207. CARB's regional reduction target for SCAG as of October 2018 is 8 percent by 2020 and 19 percent by 2035, compared to 2005 levels (CARB 2021b). (The 2016 RTP/SCS used earlier targets of a 9 percent per capita reduction by 2020 and a 16 percent per capita reduction by 2035. It should be noted that the SCAG planning region comprises Imperial, Orange, San Bernardino, and Ventura Counties in addition to Riverside County, and that targets apply in the region as a whole and to all GHG emission sources, not individual counties or transportation alone.) The RTP/SCS concluded that implementing the plan would result in an 8 percent per capita GHG reduction by 2020, an 18 percent reduction by 2035, and a 21 percent reduction by 2040.

Additionally, the County of San Bernardino developed the San Bernardino County Regional Greenhouse Gas Reduction Plan (GHGRP) in March 2021 as a community level climate action plan. The County also adopted an update to the GHGRP on September 2021. The County's GHGRP outlines measures to help San Bernardino County meet CARB and State-wide reduction goals. The County achieved its 2020 GHG reduction target by reducing GHG emissions by 15 percent by 2020 from 2007 levels, as outlined in the GHGRP and as recommended in the AB 32 Scoping Plan. The GHGRP updates outlines measures to reduce GHG reductions by 40 percent by 2030 from 2020 levels. The 2030 target will put the County on track to meet the State's long-term goal to achieve zero-net carbon emissions by 2045 (San Bernardino County 2021).

Table 4.1-1. Regional and Local Greenhouse Gas Reduction Plans

Title	GHG Reduction Policies or Strategies
Southern California Association of Governments 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (adopted September 3, 2020)	The SCS prepared as part of Connect SoCal complies with the emission reduction targets established by ARB and meets the requirements of SB 375 by achieving GHG emission reductions at 8% below 2005 per capita emissions levels by 2020 and 19% below 2005 per capita emissions levels by 2035. The RTP/SCS includes the following strategies. Several are directly tied to supporting related GHG reductions while others support the broader goals of Connect SoCal: • Improve mobility, accessibility, reliability, and travel safety for people and goods • Enhance the preservation, security, and resilience of the regional transportation system

	• Reduce greenhouse gas emissions and improve air quality • Adapt to a changing climate and support an integrated regional development pattern and transportation network.
San Bernardino County Countywide Plan (adopted in 2020)	The Countywide Plan (CWP) or Regional Plan identifies GHG reduction targets & measures and includes the San Bernardino County Regional Greenhouse Gas Reduction Plan. In addition to the GHGRP, the CWP also lists out several GHG reduction policies in several elements of its policy plan: Natural Resources Element, Transportation & Mobility Element, Renewable Energy & Conservation Element, and Land Use Element. Natural Resources Element- Goal NR-1 Air Quality: • Policy NR-1.2 Indoor air quality • Policy NR-1.7 Greenhouse gas reduction targets • Policy NR-1.8 Construction and operations • Policy NR-1.9 Building design and upgrades Transportation & Mobility Element Goal TM-3 Vehicle Miles Traveled: • Policy TM-3.1 VMT reduction • Policy TM-3.2 Trip reduction strategies • Policy TM-3.3 First mile/last mile connectivity Goal TM-4 Complete Streets, Transit & Active Transportation • Policy TM-4.1 Complete streets network • Policy TM-4.5 Transit access to job centers and tourist destinations • Policy TM-4.7 Regional bicycle network • Policy TM-4.8 Local bicycle and pedestrian networks Renewable Energy & Conservation Element- nearly all policies listed in these goals: • Goal RE-1 Energy Conservation & Efficiency • Goal RE-2 Renewable Energy Systems • Goal RE-3 Community-Oriented Renewable Energy • Goal RE-4 Environmental Compatibility Land Use Element: • Policy LU-2.7 Countywide jobs-housing balance
San Bernardino County Regional Greenhouse Gas Reduction Plan (March 2021, updated June 2021)	Includes GHG mitigation, GHG reduction targets, and adaptations. The County's 2020 and 2030 target emissions level are 5,315,000 and 1,754,098 MTCO2e per year, respectively. In order to meet the County's 2020 and 2030 emissions reduction targets, reduction measures in 24 cities were identified in the transportation, energy, water consumption, building development and solid waste sectors. Energy: • Energy Goal 1: Energy Efficiency Programs for Existing Homes and Businesses • Energy Goal 2: Weatherizing Low-Income Homes • Energy Goal 3: Energy Efficiency Retrofits for Existing Commercial/Industrial Users • Energy-Goal 7: Solar Installation on Existing Homes • Energy-Goal 8: Solar Installation on Existing Commercial/Industrial Uses • Energy Goal 10: Urban Tree Planting for Shading and Energy Savings Transportation: • On-Road Goal 3: Transportation Demand Management and Signal Synchronization • On-Road Goal 4: Expand Bike Routes • Off-Road Goal 2: Idling Ordinance Waste:

	• Waste Goal 2: Waste Diversion and Reduction Water: • Water Goal 3: Water-Efficient Landscaping Practices Building Development: • DRP-1: Development Review Process Setting Standards for New Development
City of Chino Climate Action Plan Update (adopted on November 17, 2020)	Includes GHG inventories, GHG reduction strategies, and adaptations. The City met its 2020 GHG target of 15% below 2008 levels and aims to reduce GHG levels to 537,964 MTCO2e to be 46% below 2008 GHG levels by 2040. In order to meet the City's 2030 emissions reduction targets, the City identifies 13 local measures in transportation, energy, water consumption, building development and solid waste sectors.

4.2 Project Analysis

GHG emissions from transportation projects can be divided into those produced during operation and use of the State Highway System (SHS) (operational emissions) and those produced during construction. The primary GHGs produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. CO_2 emissions are a product of burning gasoline or diesel fuel in internal combustion engines, along with relatively small amounts of CH_4 and N_2O. A small amount of HFC emissions related to refrigeration is also included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, § 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 greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

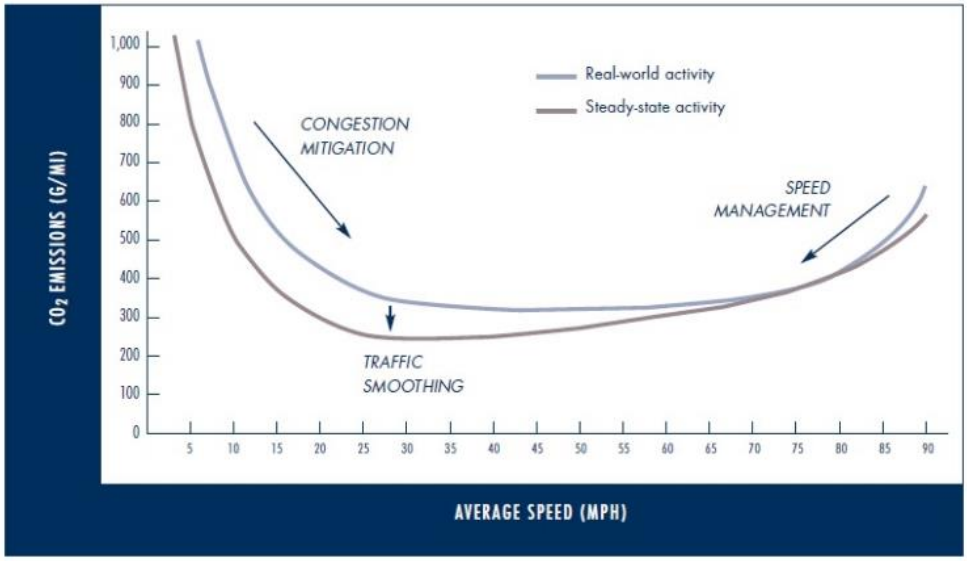
4.2.1 Operational Emissions

Nearly 29 percent of U.S. GHG emissions in 2019 came from the transportation sector. CO_2 emissions from fossil fuel combustion accounted for 74.1 percent of all GHG emissions, and transportation activities accounted for about 37.5 percent of CO_2 emissions from fossil fuel combustion in 2019. Most transportation-related GHG emissions are from passenger cars (40.5 percent), freight trucks (23.6 percent), and light-duty trucks (17.2 percent). The remainder of GHG emissions comes from other modes of transportation, including aircraft, ships, boats, and trains, as well as pipelines and lubricants (U.S. EPA 2021b, 2021c). Because CO_2 emissions represent the greatest percentage of GHG emissions it has been selected as a proxy within 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 15). 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 and efficiency. To be most effective, all four strategies should be pursued concurrently.

Figure 15. Possible Use of Traffic Operation Strategies in Reducing On-Road CO_2 Emissions (Source: Barth and Boriboonsomsin 2010)



The project is listed in the SCAG 2020–2045 RTP/SCS under the project's FTIP ID 200207. The 2020–2045 RTP was approved by the FHWA on June 5, 2020. Implementation of the 2020-2045 RTP/SCS would result in an 8 percent reduction in GHG emissions per capita by 2020, and a 19 percent reduction by 2035. This would meet or exceed the State's mandated reductions for the SCAG region, which are 8 percent by 2020 and 19 percent by 2035.

The SCAG 2020–2045 RTP/SCS includes several major initiatives that the proposed project would either directly implement or support. The proposed project would directly implement the RTP/SCS initiative to improve highway and arterial capacity by adding capacity in the form of the widened replacement bridge, which is specifically identified as part of the initiative (SCAG 2016:6). In addition, the proposed project would be consistent with the SCAG Congestion Management Process (CMP), which is part of SCAG's integrated approach to "improving and optimizing the transportation system" by providing for safe and effective management of the regional transportation system through the use of monitoring and maintenance, demand reduction, land use, and operational management strategies as well as strategic capacity enhancements (SCAG 2016:86). Each of the major initiatives of the RTP/SCS identified above

and the CMP contributes to the overall GHG reduction efforts regarding mobile sources within the SCAG region.

As discussed below, when compared to the existing baseline conditions, the proposed project would not significantly increase GHG emissions within the project area. While some GHG emissions during the construction period would be unavoidable, no significant increase in operational GHG emissions is expected.

Quantitative Analysis

As identified in the table below, annual operational emissions would be 66,727,714 metric tons of CO_2e at the 2023 opening year under the Build Alternative and 57,871,120 metric tons of CO_2e at the 2043 horizon year under the Build Alternative.

Table 4.1-2. Modeled Annual CO2e Emissions and Vehicle Miles Traveled by Alternative

Alternative	CO_2e Emissions (Metric Tons per year)	Annual Vehicle Miles Traveled[1]
Total Construction Emissions	3,550	—
2016 Existing/Baseline	69,643,430	152,483,152,089
2023 Opening Year		
No-Build Alternative	66,694,771	173,440,327,666
Build Alternative	66,727,714	173,526,040,842
2043 Horizon Year		
No-Build Alternative	57,882,815	205,828,689,920
Build Alternative	57,871,120	205,747,312,793

CO_2e = carbon dioxide equivalent
N/A = not applicable
Sources: CT-EMFAC2017; November 2017 Traffic Operations Analysis; RCEM v. 8.1.0.
[1] Annual VMT values derived from daily VMT values multiplied by 347, per ARB methodology (ARB 2008).
Note: The proposed project would not change land uses in the project vicinity and therefore not generate new trips (see Appendix E).

VMT is expected to increase between the Existing conditions in 2016 and the No-Build and Build Alternatives scenarios in 2023 and 2043. The expected increase in VMT across all alternatives, including the No Build Alternative, is a result of land use growth assumed in the future year travel demand model in addition to other "overlapping" projects that are proposed within the proposed project area.

Operational emissions were modeled using the CT-EMFAC2017 model. The regional VMT data for the Existing (2016) conditions and No-Build and Build Alternatives conditions in the Opening Year (2023) and Horizon Year (2043) was used to calculate the CO2 emissions for the Existing (2016), Opening, and Horizon Year conditions. Project-specific VMT distribution by speed provided in the Urban Crossroads 2017 Traffic Operations Analysis Report (TOAR) for each condition was utilized. The results of the modeling are summarized below in Table 2. It should be noted that GHG emissions numbers are only useful for a comparison of alternatives.

As shown below in Table 2, all the future No-Build and Build Alternative conditions' emissions in the Opening Year and Horizon Year are lower than the emissions under the Existing baseline conditions in 2016. GHG emissions under the No-Build and Build conditions in the Opening Year (2023) and Horizon Year (2043) would not increase relative to emissions under Existing (2016) conditions. This is due to improvements in engine emissions technologies as well as the retirement of older vehicles. Additionally, compared to the No-Build Alternative in the Opening Year (2023), the Build Alternative has slightly higher GHG emissions. However, by the Horizon Year (2043), under the Build Alternative, GHG emissions will be lower compared to the No-Build conditions. Implementation of the Build Alternative will not increase GHG emissions in the Horizon Year (2043), as the project's Build Alternative is designed to improve traffic circulation and decrease congestion and delays.

CARB 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, including 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 to apply project-specific factors to CARB's model.

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. The model does not, however, account for induced travel. Modeling GHG estimates with EMFAC or CT-EMFAC nevertheless 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.

4.2.2 Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, or traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; however, their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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.

Construction emissions were estimated using the latest Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (RCEM), Version 9.0. Construction of the proposed project is expected to be approximately 24 months.

Construction emissions were estimated for the proposed project using default equipment inventories provided in RCEM, project construction scheduling information provided by the project engineer, and emissions factors from the EMFAC 2017 and OFFROAD models. The emissions presented are the worst-case maximum daily construction emissions (pounds per day) for each activity that would be generated from the construction of the proposed project and converted to metric tons of CO_2e.

Overall project construction emissions of GHGs would be approximately 3,550 metric tons over the 24-month construction duration for the Build Alternative, which would be less than 0.01 percent of San Bernardino County's estimated 2020 GHG business-as-usual inventory.

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 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.

4.2.3 CEQA Conclusion

Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

The methodology, analysis, and determinations in relation to Climate Change addressed in this section are under the purview of Caltrans and the City of Chino, as Caltrans serves as the NEPA lead agency and the City of Chino serves as the CEQA lead agency for the proposed Project. For the purposes of determining whether or not GHG emissions from affected projects are adverse, project emissions must include direct, indirect, and, to the extent information is available, life cycle emissions during construction and operation. For the Project analysis, construction emissions were amortized over the life of the Project (defined as 30 years), added to the operational emissions, and compared to the existing and No-Build conditions. As discussed above, construction would generate 3,550 metric tons of CO2e over the approximately 24-month construction period for the Build Alternative.

Distributed over a 30-year period, the approximate life of the Project, the yearly contribution to GHG from construction would be 118 metric tons of CO2e per year the Build Alternative. When compared to the No-Build Alternative conditions, the Build Alternative would decrease the GHG emissions by 11,695 metric tons of CO2e per year in 2043. Therefore, the combined construction and operational GHG emissions of the Project would be a decrease of 11,577 tons of CO2e per year. When compared to the Existing (2016) conditions, the Build Alternative would reduce the GHG emissions by approximately by 2,915,716 metric tons of CO2e per year in the Opening Year (2023) and by approximately 11,772,310 metric tons of CO2e per year in the Horizon Year (2043). Therefore, because there is a reduction in future emissions compared to existing emissions and there is evidence of substantial progress in reducing emission, the proposed project's impact is less than significant and will help the state reach its climate change goals.

4.2.3.1 GREENHOUSE GAS REDUCTION STRATEGIES

Statewide Efforts

In response to AB 32, California is implementing measures to achieve emission reductions of GHGs that cause climate change. Climate change programs in California are effectively reducing GHG emissions from all sectors of the economy. These programs include regulations, market programs, and incentives that will transform transportation, industry, fuels, and other sectors, to take California into a sustainable, low-carbon and cleaner future, while maintaining a robust economy (ARB 2022).

Major sectors of the California economy, including transportation, will need to reduce emissions to meet 2030 and 2050 GHG emissions targets. The Governor's Office of Planning and Research identified five sustainability pillars in a 2015 report: (1) Increasing the share of renewable energy in the State's energy mix to at least 50 percent by 2030; (2) Reducing petroleum use by up to 50 percent by 2030; (3) Increasing the energy efficiency of existing buildings by 50 percent by 2030; (4) Reducing emissions of short-lived climate pollutants; and (5) Stewarding natural resources, including forests, working lands, and wetlands, to ensure that they store carbon, are resilient, and enhance other environmental benefits (OPR 2015).

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). Reducing today's petroleum use in cars and trucks is a key state goal for reducing greenhouse gas emissions by 2030 (California Environmental Protection Agency 2015).

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Subsequently, Governor Gavin Newsom issued Executive Order N-82-20 to combat the crises in climate change and biodiversity. It instructs state agencies to use existing authorities and resources to identify and implement near- and long-term actions to accelerate natural removal of carbon and build climate resilience in our forests, wetlands, urban greenspaces, agricultural soils, and land conservation activities in ways that serve all communities and in particular low-income, disadvantaged, and vulnerable communities. To support this order, the California Natural Resources Agency released Natural and Working Lands Climate Smart Strategy Draft for public comment in October 2021.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set a new interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

Climate Action Plan for Transportation Investments

The California Action Plan for Transportation Infrastructure (CAPTI) builds on executive orders signed by Governor Newsom in 2019 and 2020 targeted at reducing GHG emissions in transportation, which account for more than 40 percent of all polluting emissions, to reach the state's climate goals. Under CAPTI, where feasible and within existing funding program structures, the state will invest discretionary transportation funds in sustainable infrastructure projects that align with its climate, health, and social equity goals (California State Transportation Agency 2021).

California Transportation Plan

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. It serves as an umbrella document for all the other statewide transportation planning documents. The CTP 2050 presents a vision of a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health. The plan's climate goal is to achieve statewide GHG emissions reduction targets and increase resilience to climate change. It demonstrates how GHG emissions from the transportation sector can be reduced through advancements in clean fuel technologies; continued shifts toward active travel, transit, and shared mobility; more efficient land use and development practices; and continued shifts to telework (Caltrans 2021a).

Caltrans Strategic Plan

The Caltrans 2020–2024 Strategic Plan includes goals of stewardship, climate action, and equity. Climate action strategies include developing and implementing a Caltrans Climate Action Plan; a robust program of climate action education, training, and outreach; partnership and collaboration; a VMT monitoring and reduction program; and engaging with the most vulnerable communities in developing and implementing Caltrans climate action activities (Caltrans 2021b).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) established a Department policy to ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Greenhouse Gas Emissions and Mitigation Report* (Caltrans 2020) provides a comprehensive overview of Caltrans' emissions. The report documents and evaluates current Caltrans procedures and activities that track and reduce GHG emissions and identifies additional opportunities for further reducing GHG emissions from Department-controlled emission sources, in support of Departmental and State goals.

Project-Level GHG Reduction Strategies

The following measures will also be implemented in the project to reduce GHG emissions and potential climate change impacts from the project.

Caltrans Standard Specifications Section 14-9, Air Quality, a part of all construction contracts, requires contractors to comply with all federal, state, regional, and local rules, regulations, and ordinances related to air quality. South Coast Air Quality Management District regulations would apply in the project area. Measures that reduce vehicle emissions and energy use also reduce GHG emissions.

Consistent with the Program Environmental Impact Report prepared for the SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy, the project will minimize GHG emissions by recycling construction debris to maximum extent feasible and using energy- and fuel-efficient vehicles and equipment that meet or exceed EPA/NHTSA/CARB standards.

TMP-1. Refer to Section 2.1.4.3. A traffic management plan (TMP) will be implemented to minimize traffic disruptions from project construction. A TMP would reduce delays and related short-term increases in GHG emissions from disruptions in traffic flow. Also, in the event that portable changeable message signs are required as part of the TMP, these signs will be solar-powered and would not involve GHG emissions during use.

VIS-1. Refer to section 2.1.5.4. This measure would avoid and protect trees in staging areas during construction.

BIO-12. Refer to Section 2.3.1.3. If the diameter at breast height (dbh) of the two oaks trees within the coast live oak woodland stand south of Pine Avenue is greater than 8 inches, then compensation will apply and oaks will be replaced at ratios as specified in the City of Chino Zoning Ordinance Landscape Design Standards (Municipal Code Section 20.19.040).

Replacement planting of trees with more than is removed would provide long-term GHG benefits and strengthen the areas ability to remove carbon dioxide from the atmosphere and then sequester carbon in above and below-ground matter.

GHG-1 The contractor must comply with SCAQMD's rules, ordinances, and regulations regarding air quality restrictions.

GHG-2 The project will incorporate the use of energy efficient lighting.

GHG-3 Bids will be solicited that include use of energy and fuel-efficient fleets in accordance with current practices.

GHG-4 The project will maintain equipment in proper tune and working condition.

Adaptation

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The Fourth National Climate Assessment, published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways."

The U.S. DOT Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions" (U.S. DOT 2011).

FHWA order 5520 (Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events, December 15, 2014) established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (FHWA 2019).

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. A number of state policies and tools have been developed to guide adaptation efforts.

California's Fourth Climate Change Assessment (Fourth Assessment)(2018) is the state's effort to "translate the state of climate science into useful information for action". It provides information that will help decision makers across sectors and at state, regional, and local scales protect and build the resilience of the state's people, infrastructure, natural systems, working lands, and waters. The State's approach recognizes that the consequences of climate change occur at the intersections of people, nature, and infrastructure. The Fourth Assessment reports that if no measures are taken to reduce GHG emissions by 2021 or sooner, the state is projected to experience a 2.7 to 8.8 degrees Fahrenheit increase in average annual maximum daily temperatures, with impacts on agriculture, energy demand, natural systems, and public health; a two-thirds decline in water supply from snowpack and water shortages that will impact agricultural production; a 77% increase in average area burned by wildfire, with consequences for forest health and communities; and large-scale erosion of up to 67% of Southern California beaches and inundation of billions of dollars' worth of residential and commercial buildings due to sea level rise (State of California 2018).

Sea level rise is a particular concern for transportation infrastructure in the coastal zone. Major urban airports will be at risk of flooding from sea level rise combined with storm surge as early as 2040; San Francisco airport is already at risk. Miles of coastal highways vulnerable to flooding in a 100-year storm event will triple to 370 by 2100, and 3,750 miles will be exposed to

temporary flooding. The Fourth Assessment's findings highlight the need for proactive action to address these current and future impacts of climate change.

In 2008, then-governor Arnold Schwarzenegger recognized the need when he issued EO S-13-08, focused on sea level rise. Technical reports on the latest sea level rise science were first published in 2010 and updated in 2013 and 2017. The 2017 projections of sea level rise and new understanding of processes and potential impacts in California were incorporated into the State of California Sea-Level Rise Guidance Update in 2018. This EO also gave rise to the California Climate Adaptation Strategy (2009), updated in 2014 as Safeguarding California: Reducing Climate Risk (Safeguarding California Plan), which addressed the full range of climate change impacts and recommended adaptation strategies. The Safeguarding California Plan was updated in 2018 and again in 2021 as the California Climate Adaptation Strategy, incorporating key elements of the latest sector-specific plans such as the Natural and Working Lands Climate Smart Strategy, Wildfire and Forest Resilience Action Plan, Water Resilience Portfolio, and the CAPTI (described above). Priorities in the 2021 California Climate Adaptation Strategy include acting in partnership with California Native American Tribes, strengthening protections for climate-vulnerable communities that lack capacity and resources, nature-based climate solutions, use of best available climate science, and partnering and collaboration to best leverage resources (California Natural Resources Agency 2021).

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change in addition to sea level rise also threaten California's infrastructure. At the direction of EO B-30-15, the Office of Planning and Research published Planning and Investing for a Resilient California: A Guidebook for State Agencies in 2017, to encourage a uniform and systematic approach. AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group to help actors throughout the state address the findings of California's Fourth Climate Change Assessment. It released its report, Paying it Forward: The Path Toward Climate-Safe Infrastructure in California, in 2018. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts (Climate Change Infrastructure Working Group 2018).

Caltrans Adaptation Efforts

CALTRANS VULNERABILITY ASSESSMENTS

Caltrans completed climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects of precipitation, temperature, wildfire, storm surge, and sea level rise.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments guide analysis of at-risk assets and

development of Adaptation Priority Reports as a method to make capital programming decisions to address identified risks.

Project Adaptation Analysis

Sea Level Rise

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.

Precipitation and Flooding

According to the Federal Emergency Management Agency Flood Insurance Rate Map, (Map Number 06071C9335H), the project area is primarily located within Zone X (Area of Minimal Flood Hazard). While the entire project area is within the 1% Annual Chance Flood Hazard zone. A portion of the project area, nearest to Euclid Avenue is located in an area of undetermined flood hazard. Based on the Caltrans District 8 Climate Change Vulnerability Assessment Map (Caltrans 2019), the 100-year storm precipitation depth in the project area is expected to increase by 0 to 4.9% by 2025, 2055 and 2085. Average annual rainfall in nearby Pomona is about 17 inches; the wettest month is January, with about 3.6 inches on average (Western Regional Climate Center 2021). Accordingly, even a 10% increase of precipitation in the flood hazard area would amount to only a fraction of an inch more rainfall. With implementation of adaptation measure CC-1, it is expected that the project would be adapted to the anticipated changes in storm precipitation under climate change.

Wildfire

Based on the Caltrans District 8 Climate Change Vulnerability Assessment Map (Caltrans 2019), the project area has medium or moderate wildfire exposure as projected in 2025, 2055, and 2085. Moderate wildfire exposure is characterized as an expected 15-50% of the cell area burned. The nearby segment of highway of SR-71 is considered an exposed road for 2025, 2055 and 2085. The project is not in an area designated as a High or Very High Fire Hazard Severity Zone in a State Responsibility Area, and project is located in a Federal Responsibility Area (FRA). Given the moderate exposure risk to wildfire, the project may consider the installation or maintenance of infrastructure that would be vulnerable to fire. Caltrans standard specifications mandate fire prevention procedures, including a fire prevention plan, to avoid accidental fire starts during construction. Accordingly, the project would be adapted and resilient to future wildfire.

Project-Level Adaptation Strategies

The following adaptation measures will be implemented to reduce the effects of climate change on the proposed project:

CC-1 Drainage facilities will be modified to accommodate additional runoff from the roadway extension and the projected increase in the 100-year storm precipitation depth and rainfall in the project area.

CC-2 Project improvements will be constructed using fire-resistant materials (e.g., steel or concrete) when possible. In addition, vegetation will be cleared from the project area to maintain a defensible space, as applicable.

Temperature

Temperature can affect pavement performance, and changes in temperature can cause blowups, buckling, and rutting, impacting the pavement's roadway life. The FHWA's Long-Term Pavement Performance program shows that 36% of total damage to flexible pavements, and 24% of total damage to rigid pavements is caused by environmental factors. Pavements are designed based on the typical historical climatic conditions for the project area. However, as weather changes occur due to climate change, historic climatic conditions may no longer be as indicative for future environmental conditions.

Temperature affects the choice of pavement materials, the design of foundations and retaining walls in terms of ground moisture conditions, and the need for expansion/ contraction of bridge joints. The changes in temperature in the project area help determine the selection of the pavement binder grade and material. A binder must be selected that can maintain pavement integrity under both extreme cold and heat conditions. Higher average temperatures can affect flexible pavement; increased maximum pavement temperatures increases the potential for rutting and shoving, requiring more rut-resistant asphalt mixtures.

The Caltrans District 8 Climate Change Vulnerability Assessment Map (Caltrans 2019), indicates temperature changes during the project's design life. The absolute minimum air temperature in the project area is projected to increase by 2.5 degrees Fahrenheit by 2025, by 5.6 degrees Fahrenheit by 2055, and by 8.5 degrees Fahrenheit by 2085. The average maximum temperature over seven consecutive days in the project area is projected to increase by 2.5 degrees Fahrenheit by 2025, by 5.9 degrees Fahrenheit by 2055, and by 9.6 degrees Fahrenheit by 2085. Therefore, the overall minimum and maximum temperatures of the day in the project area are projected to continue to increase from 2022 to 2085. The average maximum temperature in nearby Pomona is 77.5 degrees Fahrenheit. The average minimum temperature is 47.6 degrees Fahrenheit. The coldest month in Pomona is January when the average lowest temperature is 38.1 degrees Fahrenheit. The hottest month is August when the average highest temperature is 91.1 degrees Fahrenheit (Western Regional Climate Center 2021). Accordingly, a 10 degrees Fahrenheit increase in the absolute minimum air temperature and 10 degrees Fahrenheit increase in the average maximum temperature over seven consecutive days in the project area, could increase the average minimum temperature to 57 degrees Fahrenheit, and the average high temperature to 87 degrees Fahrenheit. The hottest month of the year could increase to an average high of 101 degrees Fahrenheit. Although there could be a substantial increase in temperature during the life of the project, the District Climate Change Vulnerability Assessment does not indicate temperature changes during the project's design life that would require adaptive changes in pavement design or maintenance practices.

Chapter 5 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, groups, utilities, and tribal consultation for this project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, phone calls and outreach letters, and Project Development Team (PDT) meetings. This chapter summarizes the results of the Department's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

Consultation with several agencies occurred in conjunction with preparation of the proposed project technical reports and this IS/EA. These agencies are identified in the various technical reports and include the NAHC, USACE, and USFWS. Coordination has also occurred with various historical societies and historic preservation groups.

5.1 Consultation and Coordination with Public Agencies, Groups, and Utilities

The following provides a summary of meetings, correspondence, and/or coordination relevant for the development of the proposed project.

5.1.1 United States Fish and Wildlife Service

Coordination with USFWS was initiated in February 25, 2019. As part of the work effort, Caltrans, as assigned by the FHWA is responsible for the coordination of the NEPA process including ESA Section 7 Consultation. A letter requesting concurrence from the USFWS that the project, as determined by Caltrans, would have *no effect* on coastal California gnatcatcher, Santa Ana sucker, steelhead, delhi sands flower-loving fly, San Diego ambrosia, or thread-leaved brodiaea; that is *may affect but is not likely to adversely affect* southwestern willow flycatcher; and that it *may affect and is likely to adversely affect* least Bell's vireo and its designate Critical Habitat was sent on February 25, 2019 along with the Biological Assessment (BA) prepared for the project. The USFWS provided a response letter to Caltrans on September 19, 2019 with conservation measures to avoid and minimize impacts to the vireo and its designated critical habitat. On November 6, 2019, Caltrans, USFWS, and the City of Chino Staff met to discuss the project and ways to minimize impacts to the vireo and its designated critical habitat. Caltrans provided a response letter on February 26, 2020 including the revised BA, requesting initiation of formal consultation for project impacts to the vireo and its designated critical habitat. The Biological Opinion (BO) was received from USFWS in a letter dated May 22, 2020. In July 2022, an amended BO was issued by USFWS that clarifies the removal from the project description of work related to restoring the existing damaged Pine Avenue at Chino Creek, which has been performed under a separate BO independent of the current project.

A list of potentially occurring listed species at the proposed project site was requested from USFWS. USFWS responded with a formal list of species in a letter dated June 1, 2022 via Information of Planning and Conservation (iPaC) Species List for the Pine Avenue Extension Project. A National Marine Fisheries Service (NMFS) Species List was not required for the project.

5.1.2 U.S. Army Corps of Engineers

Coordination with USACE has been continuing since July 2015. Early discussions focused on the project achieving 100-year storm event and runoff and elevating the roadway to be capable of achieving these measures. Conceptual grading plans, project site and borrow site earthwork estimates, Prado Basin volume balance estimates, and hydraulic impacts analysis files were prepared in October 2016 in response to discussions with USACE. Status update of the project occurred during an in-person meeting at the USACE office on August 2017 in which project progress and future direction of the project were discussed. During an in-person meeting at the USACE office in September 2017, discussions took place regarding the 50- and 100-year flood events and project design to meet those criteria. A coordination meeting took place on February 2018 at the USACE office to further discuss the current design and elevation of the roadway to accommodate storm events. Discussions focused on measures during potential flooding events and design of the roadway. Further discussions were held in June 2018 with USACE staff regarding Prado Dam, Chino Creek and Cypress Channel and how the project would affect those facilities.

A CWA Section 404 application and 404 (b)(1) Memorandum have been prepared and submitted to the USACE.

5.1.3 Native American Heritage Commission

The NAHC was contacted on December 9, 2016 requesting a Sacred Lands File Search, a response was received on December 14, 2016 stating that a search did not yield any sacred lands or traditional cultural properties within the project area, along with a listing of local Native American Tribes and individuals. Based on this list, Section 106 consultation letters and maps of the project area were sent to Native American groups on February 23, 2017. Letters were sent to the Gabrieleno Band of Mission Indians-Kizh Nation (Andrew Salas), Gabrieleno/Tongva San Gabriel Band of Mission Indians (Anthony Morales), Gabrielino/Tongva Nation (Sandonne Goad), Gabrielino Tongva Indians of California Tribal Council (Robert F. Dorame), Gabrielino-Tongva Tribe (Linda Candelaria), and the San Fernando Band of Mission Indians (John Valenzuela). The Soboba Band of Luiseno Indians (Joseph Ontiveros) was also added to the list of contacts and sent the consultation letter and maps. Andrew Salas of the Gabrieleno Band of Mission Indians-Kizh Nation and Anthony Morales of the Gabrieleno/Tongva San Gabriel Band of Mission Indians responded to the letters. Andrew Salas sent an email on March 14, 2017 stating that the Gabrieleno Band of Mission Indians-Kizh Nation would discuss the project only with the lead agency for Assembly Bill (AB) 52 purposes. Anthony Morales replied via phone call on March 17, 2017 stressing the importance of having a Native American Monitor present during project construction. Follow-up consultation letters were sent on July 19, 2018. Andrew Salas contacted Caltrans by email on July 19, 2018 requesting consultation with Caltrans and the City of Chino, pursuant to Section 106 of the NHPA and AB52, respectively. Andrew Salas was

contacted on December 4, 2018 and he stated he was in communication with the City of Chino as part of the AB52 consultation and was requesting monitoring for the entire project due to the presence of a prehistoric site. Andrew Salas also provided ethnographic documents which have been utilized for portions of the Archaeological Survey Report prepared for the project. Anthony Morales was contacted on December 4, 2018 and has requested to be included in future consultation and requested an archaeological monitor and Native American Monitor from the Gabrieleno/Tongva San Gabriel Band of Mission Indians be present for ground disturbing activities. Joseph Ontiveros was contacted on December 4, 2018 and indicated that the project was outside of his tribal area and deferred to the Gabrielino Tribes.

5.1.4 California Department of Transportation

Coordination with Caltrans has been on-going since 2008 for the project in the form of in-person meetings, email communication, and conference calls. Early discussions focused on project schedule, construction timeframe, and project funding. As technical reports were being prepared and submitted to Caltrans, status update meetings were held in September 2018 to update the schedule, progress, and technical report status, as well as responding to Caltrans comments on the Traffic Report. A Project Development Team Meeting (#1) was held at Caltrans' office in September 2019 to discuss project progress and provide environmental technical studies updates for the Section 7 Biological Assessment, Traffic Study, Cultural Resources Report, and general project updates and design updates. Conference calls were periodically held in March 2020, with Caltrans and the City's consultants to review and address comments by Caltrans.

5.1.5 California Department of Fish and Wildlife

A 1600 Streambed Alteration Agreement was submitted in January 2021, and 2081 Incidental Take Permit is currently being prepared for future submittal to CDFW.

5.1.6 Regional Water Quality Control Board

A Section 401 application and accompanying attachments have been submitted to RWQCB in January 2021.

5.1.7 County of San Bernardino

Meetings and coordination regarding the project were held with representatives from the County of San Bernardino in January 2015 and provided project design and overview of the project description.

5.1.8 City of Chino Hills

On-going coordination for the project has occurred with the City of Chino Hills since 2015. In-person meetings held in December 2015 discussed traffic impacts and status of the traffic report being prepared for the project. The City of Chino is continuing its efforts with coordination regarding comments provided the City of Chino Hills for the project.

5.1.9 Chino Valley Historical Society

A letter was sent to the Chino Valley Historical Society on July 19, 2017, March 6, 2020, and May 4, 2020 describing the project as well as to inquire about cultural resources that may be located in the project area. The Chino Valley Historical Society confirmed receiving project information on May 5, 2020, however, did not provide any information identifying cultural resources in or near the project site.

5.1.10 San Bernardino County Museum

A letter was sent to the San Bernardino County Museum on July 19, 2017, March 6, 2020, and May 4, 2020 describing the project as well as to inquire about cultural resources that may be located in the project area. Jenifer Dickerson responded via email on May 4, 2020 with information about the Yorba-Slaughter Families Adobe. The site, owned by San Bernardino County since 1971 is a California State Historical Landmark and listed on the National Register of Historic Places. This site is located outside of the project APE.

5.1.11 San Bernardino Historical Society

A letter was sent to the San Bernardino Historical Society on July 19, 2017, March 6, 2020, and May 4, 2020 describing the project as well as to inquire about cultural resources that may be located in the project area. No responses have been received on previous attempts. On February 4, 2021, a follow-up phone call was made and the San Bernardino Historical Society did not have any information on historical resources in the project area.

5.1.12 Yorba-Slaughter Families Adobe

A letter was sent to the Yorba-Slaughter Families Adobe on July 19, 2017, March 6, 2020, and May 4, 2020 describing the project as well as to inquire about cultural resources that may be located in the project area. No responses have been received on previous attempts. On February 4, 2021, a follow-up phone call was made. No responses have been received.

5.1.13 Southern California Edison (SCE)

The City of Chino contacted SCE via email regarding the project and project alignment in September 2019 to begin initial utility coordination. An in-person meeting between the City of Chino, City's consultant, and SCE occurred in January 2020. During the meeting, the electrical towers and poles were discussed as well as right of way, land rights, and access road. A conference call was held in December 2020 to discuss the updated plans for the project, project schedule, and SCE's transmission lines, tower, and poles.

5.1.14 Agency Correspondence and Documentation

Agency correspondence letters are provided on the pages that follow this chapter.

Biological Resources:

- USFWS iPaC, NMFS Species List, CDFW California Natural Diversity Database (CNDDB) Species List and National Marine Fisheries Service Species List.
- USFWS Biological Opinion dated May 22, 2020 (FWS-SB-16B0191-19F1560) and Amendment to the Biological Opinion issued July 7, 2022 (FWS-SB-2022-0038579).

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901

In Reply Refer To:
Project Code: 2022-0048739
Project Name: Pine Avenue Extension

June 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at the Fish and Wildlife Service's Endangered Species Consultation website at:

https://www.fws.gov/endangered/what-we-do/faq.html

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Project Summary

Project Code: 2022-0048739
Event Code: None
Project Name: Pine Avenue Extension
Project Type: Road/Hwy - New Construction
Project Description: Extension and widening of Pine Avenue from SR-71 to SR-86 (Euclid Avenue).
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.950140043980355,-117.66202154452915,14z

Counties: San Bernardino County, California

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Coastal California Gnatcatcher *Polioptila californica californica* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered

Fishes

NAME	STATUS
Santa Ana Sucker *Catostomus santaanae* Population: 3 CA river basins There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3785	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
San Diego Ambrosia *Ambrosia pumila* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8287	Endangered
Thread-leaved Brodiaea *Brodiaea filifolia* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6087	Threatened

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Least Bell's Vireo *Vireo bellii pusillus* https://ecos.fws.gov/ecp/species/5945#crithab	Final

IPaC User Contact Information

Agency:	Chino city
Name:	Marisa Flores
Address:	49 Discovery
Address Line 2:	Ste 250
City:	Irvine
State:	CA
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Email	mmflores13@gmail.com
Phone:	9514930649

Lead Agency Contact Information

Lead Agency: Department of Transportation

United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

In Reply Refer to:
FWS-SB-16B0191-19F1560

May 22, 2020
Sent by Email

Mr. Aaron Burton
Senior Environmental Planner
Department of Transportation, District 8
464 West Forth Street, 6th Floor
San Bernardino, California 92401

Subject: Formal Section 7 Consultation for the Pine Avenue Extension from State Route 71 to Euclid Avenue, San Bernardino County, California

Dear Mr. Burton:

This is in response to correspondence from the California Department of Transportation (Caltrans) dated February 26, 2020, requesting formal consultation for the Pine Avenue Extension from State Route 71 (SR-71) to Euclid Avenue, and its potential effects on the federally endangered least Bell's vireo (*Vireo bellii pusillus*; vireo) and its designated critical habitat, in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The project is receiving Federal funding through the Federal Highway Administration (FHWA). Caltrans has assumed FHWA's responsibilities under the Act for this consultation in accordance with Renewed 23 U.S.C. 326 and 23 U.S.C. 327 and as described in the National Environmental Policy Act assignment Memorandum of Understanding between FHWA and Caltrans (effective October 1, 2012). We initiated consultation on February 26, 2020, the day we received your request for consultation.

Based on conservation measures included in the project to by Caltrans, we concur with your determination that the proposed project is not likely to adversely affect the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*; flycatcher) (Appendix A). Therefore, the flycatcher is not addressed in this biological opinion.

This biological opinion is based on information provided in: (1) *Pine Avenue Extension Project Biological Assessment* (BA; Caltrans 2020); (2) your February 26, 2020, letter requesting initiation of formal consultation; and (3) other sources of information including survey reports and email correspondence. A complete project file of this consultation is maintained at the Carlsbad Fish and Wildlife Office.

CONSULTATION HISTORY

Early coordination between Caltrans and the Service occurred on the project. The following chronology reflects a summary of significant events.

January 29, 2019	The Service's Information, Planning, and Conservation System provided a list of federally threatened and endangered species and their critical habitats expected to be present in or near the proposed action area to Caltrans.
February 25, 2019	Caltrans provided the Service a letter dated February 25, 2019, and the BA, requesting initiation of formal consultation for project impacts to the vireo and its designated critical habitat.
Sept 19, 2019	The Service provided a draft project description to Caltrans for review, including conservation measures to avoid and minimize impacts to the vireo and its designated critical habitat.
Nov 6, 2019	Caltrans, Service, and City of Chino staff met to discuss the project and how to minimize impacts to the vireo and its designated critical habitat.
February 26, 2020	Caltrans provided the Service a letter dated February 26, 2020, and the revised BA, requesting initiation of formal consultation for project impacts to the vireo and its designated critical habitat.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The project will extend Pine Avenue from SR-71 to Euclid Avenue and reconstruct the intersection of Pine Avenue with Pomona Rincon Road / Fairfield Ranch Road within the northern Prado Flood Control Basin in the Cities of Chino and Chino Hills, San Bernardino County. The Chino Creek and Cypress Channel crossings will be widened to accommodate the additional through lanes. The project will elevate Pine Avenue above the 50-year flood elevation for the Prado Basin and the 100-year event elevation for Chino Creek and Cypress Channel. Material to elevate Pine Avenue would come from a borrow site in a mostly agricultural area approximately 1.5 miles southeast of Pine Avenue (Figure 1). Project construction is anticipated to commence in 2023 and will last 18 to 32 months.

The project includes the following features:

- Within the City of Chino Hills, extending from SR-71 to El Prado Road, the project will have a 78 foot right of way with 66 feet from curb to curb and a 6 foot parkway behind the curb. The lane configuration will include two 16-foot outside lanes, two 12-foot inside lanes and one 10-foot striped median lane.

- Within the City of Chino, extending from El Prado Road to Euclid Avenue, the project will have a 78 foot right of way with 60 feet from curb to curb, a 5 foot parkway on the north side, and a 13 foot parkway on the south side behind the curb. The lane configuration will be four 12-foot lanes in each direction, and one 12-foot striped median lane.

- The roadway will be constructed with curb and gutter on both sides of the street and no shoulders will be provided.

- The bridge will be 500 feet long passing over the Chino Creek just west of El Prado Road and is proposed to have four 125-foot spans with three piers spaced evenly.

The project will result in approximately 6.60 acres and 2.38 acres of permanent and temporary impacts to suitable habitat for the vireo, respectively. Of this, approximately 3.51 acres and 0.65 acre of breeding habitat, and 3.09 acres and 1.73 acres of foraging habitat, will be permanently and temporarily impacted, respectively (Table 1). The project will result in approximately 13.14 acres and 4.15 acres of permanent and temporary impacts to designated critical habitat for the vireo, respectively (Figure 2, Table 2). The project will impact vireos as summarized in Table 3 and shown in Figure 3.

Table 1. Impacts to Least Bell's Vireo Habitat

	Permanent (acres)	Permanent Shading (acres)	Total Permanent (acres)	Temporary (acres)
Breeding	2.98	0.53	3.51	0.65
Foraging	2.87	0.22	3.09	1.73
Total	5.85	0.75	**6.60**	**2.38**

Table 2. Impacts to Least Bell's Vireo Critical Habitat

	(acres)	Shading (acres)	(acres)	(acres)
With PBFs[1]	5.89	0.75	6.64	2.23
Lacking PBFs	6.36	0.14	6.50	1.92
Total	12.25	0.89	**13.14**	**4.15**

[1] The designation of critical habitat (CH) for the least Bell's vireo uses the term "primary constituent element" (PCE) to refer to the physical and biological features within critical habitat that are essential to the conservation of the species. The new critical habitat regulations (81 FR 7214) replace this term with physical or biological features (PBFs). The shift in terminology does not change the approach used in conducting this effects analysis, which is the same regardless of whether the original designation identified PCE, PBF, or essential features. In this consultation, we use the term PBF to mean PCE.

Table 3. Impacts to Least Bell's Vireo Pairs

	Loss of between 30 and 100 percent of use area	Within 500 feet, loss of between 0 and 10 percent of use area
Territories 2017	4	6

Conservation Measures

Caltrans has agreed to implement the following conservation measures (CM) as part of the proposed action to avoid and minimize impacts to vireos:

CM 1. Caltrans will offset permanent impacts to 6.60 acres and temporary impacts to 2.38 acres of habitat occupied by the vireo through the restoration and conservation of 24.56 acres of riparian habitat occupied by the vireo in the vicinity of the project site, and within or directly adjacent to designated critical habitat, as reviewed and approved by the Palm Springs Fish and Wildlife Office (PSFWO).

a. Documentation that the habitat has been conserved (if a bank or in lieu fee program is used) will be provided to the PSFWO prior to the commencement of vegetation removal and project construction; or

b. Caltrans will submit a habitat restoration plan for all restoration, including temporary impact areas, to the PSFWO for review and approval at least 30 days prior to initiating project impacts. The plan will include the following information and conditions:

i. All habitat restoration sites will be prepared for planting in a way that mimics natural habitat to the maximum extent practicable. All plantings will be installed in a way that mimics natural plant distribution and not in rows.

ii. Planting palettes (plant species, size, and number/acre) and seed mixes (plant species and pounds/acre) will be limited to locally native species (e.g., species found in or near the biological study area for the project). The source location of all plant material and seed will be provided to the PSFWO prior to use in restoration activities.

iii. Container plant survival will be 80 percent of the initial plantings for the first 5 years. At the first and second anniversary of plant installation, all dead plants will be replaced unless their function has been replaced by plants from seed or natural recruitment.

iv. A final implementation schedule will indicate when all impacts, as well as restoration planting and irrigation will begin and end.

v. The final restoration plan will include 5 years of success criteria for restoration areas including: percent cover, evidence of natural recruitment of multiple species for all habitat types, 0 percent coverage for all woody California Invasive Plant Council's (Cal-IPC's) "Invasive Plant Inventory" species (e.g., trees and shrubs), and no more than 10 percent coverage for other exotic/weed species.

vi. A minimum 5 years of maintenance and monitoring of restoration areas, unless success criteria are met earlier and all artificial water supplies have been off for at least 2 years.

vii. A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points will be used for qualitative monitoring and stratified-random sampling will be used for all quantitative monitoring.

viii. Contingency measures in the event of restoration failure

ix. Annual mitigation maintenance and monitoring reports will be submitted to the PSFWO no later than December 1 of each year.

x. If maintenance of a riparian restoration area is necessary between March 15 and August 31, a qualified biologist will survey for vireos within the restoration area, access paths to it, and other areas susceptible to disturbances by restoration site maintenance. Surveys will consist of three visits separated by 2 weeks starting April 10 of each maintenance/monitoring year. Restoration work will be allowed to continue on the site during the survey period. However, if vireos are found during any of the visits, the Caltrans Project Biologist will notify and coordinate with the PSFWO to identify measures to avoid and/or minimize effects to the vireo (e.g., nests and an appropriate buffer will be flagged by the biologist and avoided by the maintenance work).

CM 2. Unless credits are purchased from a bank or in lieu fee program (1.a. above), a perpetual biological conservation easement or other legal conservation mechanism acceptable to the PSFWO will be recorded over the 24.56 acre area restored and conserved by the project. The conservation mechanism will specify that no easements or activities (e.g., fuel modification zones, public trails, drainage facilities, walls, maintenance access roads, utility easements) that will result in soil disturbance and/or native vegetation removal will be allowed within the biological conservation easement areas. A draft conservation mechanism will be provided to the PSFWO for review and approval. Caltrans will also submit the final conservation mechanism to the PSFWO. If Caltrans is not able to place the conservation easement or other conservation mechanism prior to initiating project impacts, annual reports will be provided on its status until the conservation mechanism is recorded over the property, which will occur within one year of the issuance of this biological opinion, unless a written extension is requested by Caltrans showing good faith efforts to achieve the recordation and the extension request is granted by the PSFWO.

CM 3. Unless credits are purchased from a bank or in lieu fee program (1.a. above), Caltrans will prepare and implement a perpetual management, maintenance, and monitoring plan for the 24.56-acre area restored and conserved by the project. Caltrans will also establish non-wasting endowments for amounts approved by the PSFWO based on Property Analysis Records (PAR) (Center for Natural Lands Management ©1998) or similar cost estimation methods, to secure the ongoing funding for the perpetual management, maintenance and monitoring of the property. Caltrans will submit a draft long-term management plan for the property to the PSFWO for review and approval. The long-term management plan will include, but not be limited to, the following: 1) the PAR or other cost estimation results for the non-wasting endowment; 2) proposed land manager's name, qualifications, business address, and contact information; 3) method of protecting the resources in perpetuity (e.g., conservation easement), monitoring schedule, measures to prevent human and exotic species encroachment, funding mechanism, and contingency measures should problems occur. Caltrans will submit the final long-term management plan to the PSFWO. If the long-term management plan is not prepared prior to initiating project impact, annual reports will be provided on its status until the final management plan has been provided and the endowment has been established.

CM 4. A biologist (Project Biologist)[1] approved by the PSFWO will be on site: (a) during all vegetation clearing/grubbing; and (b) weekly during project construction within 500 feet of vireo habitat to monitor compliance with all conservation measures. Caltrans will submit the biologist's name, contact information, and work schedule on the project to the PSFWO at least 15 working days prior to initiating project impacts. The Project Biologist will be provided with a copy of this consultation. The Project Biologist will be available during pre-construction and construction phases to address protection of sensitive biological resources, monitor ongoing work, and maintain communications with construction personnel to facilitate the appropriate and lawful management of issues relating to biological resources. The Project Biologist will report any non-compliance issue to the Resident Engineer and Caltrans Project Biologist such that work can be halted if necessary, and the issue can be discussed with the PSFWO to ensure the proper implementation of species and habitat protection measures. The Caltrans Project Biologist will report all non-compliance issues to the PSFWO within 1 business day of notification.

CM 5. The Project Biologist will submit monthly email reports (including photographs of impact areas) to the Caltrans Project Biologist during clearing of, and construction within, 500 feet of vireo habitat. The monthly reports will document that authorized impacts were not exceeded and general compliance with all conditions. The reports will also outline the location of construction activities, the

[1] The Project Biologist will be familiar with the biology and ecology of the vireo and with the habitats that support this species.

type of construction that occurred, and equipment used. These reports will specify numbers and locations, and sex of listed species (if observed), their observed behavior (especially in relation to construction activities), and remedial measures employed to avoid and minimize impacts to these species. Raw field notes should be available upon request by the PSFWO. The Caltrans Project Biologist will review reports and forward them to the PSFWO.

CM 6. The Project Biologist will submit a final report to the Caltrans Project Biologist within 120 days of project completion including photographs of impact areas and adjacent habitat, documentation that authorized impacts were not exceeded, and documentation that general compliance with all conservation measures was achieved. The report will specify numbers and locations of listed species (if observed); observed listed species behavior (especially in relation to project activities); and remedial measures employed to avoid and minimize impacts to listed species and critical habitat. Raw field notes should be available upon request by the PSFWO. The Caltrans Project Biologist will review the report and forward it to the PSFWO within 15 days of receipt.

CM 7. The clearing and grubbing of native habitats for the project will occur between September 1 and March 14, to avoid the vireo breeding season. Vegetation clearing may commence earlier in the fall if the Project Biologist demonstrates to the satisfaction of the PSFWO that all breeding within adjacent habitat is complete.

CM 8. All native or sensitive habitats outside and adjacent to the construction limits will be designated as Environmentally Sensitive Areas (ESAs) on project maps. ESAs will be temporarily fenced during construction with orange plastic snow fence, orange silt fencing, or in areas of flowing water, with stakes and flagging. No personnel, equipment, or debris will be allowed within the ESAs. Temporary ESA fencing and flagging will be installed in a manner that does not impact habitats to be avoided and such that it is clearly visible to personnel on foot and operating heavy equipment. Caltrans will submit to the PSFWO, at least 5 days prior to initiating project impacts (except for impacts resulting from clearing to install temporary fencing), the final plans for initial clearing and grubbing of habitat and project construction. These final plans will include photographs that show the fenced and flagged limits of impact and all areas to be impacted or avoided. Field maps indicating the location of temporary ESA fencing and/or staking will also be provided. If work occurs within vireo habitat beyond the fenced or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of the PSFWO. Temporary ESA fencing and markers will be maintained in good repair until the completion of project work adjacent to each ESA and removed upon completion of project work adjacent to each ESA.

CM 9. An employee education program will be developed and implemented by the Project Biologist. Each employee (including temporary, contractors, and subcontractors) will receive a training/awareness program prior to working on the proposed project. They will be advised of the potential impact to the listed species

and the potential penalties for taking such species. At a minimum, the program will include the following topics: occurrence of the listed and sensitive species in the area (including photographs), their general ecology, sensitivity of the species to human activities, legal protection afforded these species, penalties for violations of Federal and State laws, reporting requirements, and project features designed to reduce the impacts to these species and promote continued successful occupation of the project area.

CM 10. During project construction all invasive species included on the National Invasive Species Management Plan, the State of California Noxious Weed List, and the California Invasive Plant Council's Invasive Plant Inventory list (Cal-IPC 2006) found growing within the project impact area will be identified and removed at least once a month. Special care will be taken during transport, use, and disposal of soils containing invasive weed seeds and all weedy vegetation removed during construction will be properly disposed of to prevent spread into areas outside of the construction area. All heavy equipment will be washed and cleaned of debris prior to entering a new area to minimize the spread of invasive weeds.

CM 11. Project landscaping will follow the provisions set forth in Executive Order 13112, which mandates preventing the introduction of and controlling the spread of invasive plant species on highway ROWs. No invasive species listed in the National Invasive Species Management Plan, State of California Noxious Weed List, or Cal-IPC Invasive Plant Inventory list will be used in the landscaping plans for the project. Caltrans will review the landscaping plans for the project and then submit them to the PSFWO for review and approval.

CM 12. If nighttime construction is necessary, all project lighting (e.g., staging areas, equipment storage sites, roadway) will be of the lowest illumination necessary for human safety, selectively placed, and directed onto the construction site and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats.

CM 13. Permanent project lighting will be of the lowest illumination necessary for safety and will be directed toward the bridge and paved roadway and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats. Caltrans will review the permanent lighting plans for the project and then submit them to the PSFWO.

CM 14. A construction Storm Water Pollution Prevention Plan (SWPPP) and soil erosion and sedimentation plan will be developed to identify best management practices that will be implemented during construction to minimize erosion, prevent sediment and debris from entering drainages, and maintain water quality. Sediment will not be stockpiled in areas where material could be washed into drainages by rainfall. Erosion and sediment control devices used for the proposed project, including fiber rolls and bonded fiber matrix, will be made from

biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.

CM 15. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated areas located within previously disturbed upland. They will be located such that runoff from the designated areas will not enter vireo habitat.

CM 16. Impacts from fugitive dust will be minimized through watering and other appropriate measures.

CM 17. The project site will be kept as clear of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site.

CM 18. Project personnel will be prohibited from bringing domestic pets to construction sites to ensure that domestic pets do not disturb or depredate wildlife in adjacent native habitats.

CM 19. Fire suppression equipment, including extinguishers, shovels, and water tankers, will be available on site during construction.

CM 20. If project construction, excluding clearing and grubbing, is necessary during the vireo breeding season (March 15–August 31) that will generate noise in excess of ambient noise levels within vireo nesting habitat, measures will be implemented to reduce noise disturbance to vireos. A noise abatement plan will be submitted to the PSFWO for review and approval within 30 days of initiating project impacts and 5 days prior to commencing pile driving and pavement breaking work. The noise abatement plan will include the following information: (a) a description of the noise abatement measures that will be implemented by the project (e.g., mufflers, use of a vibratory driver, shroud for pile driver, soft start, cushion block, sound wall or curtain, placement of project generators away from the riparian area and behind k-rail, etc.) and (b) noise levels that are anticipated within the adjacent vireo nesting habitat. The Project Biologist will oversee implementation of the noise abatement plan and may conduct noise monitoring and vireo surveys as needed, based on their judgment and knowledge of the species, site, and proposed activities, to minimize noise impacts to vireos.

CM 21. Chino Creek Bridge will be designed and constructed with barriers that will reduce traffic roadway noise below 60 dB and reduce light spill from vehicle headlights into adjacent habitat. The barrier design will be provided to the PSFWO for review and approval.

CM 22. Aerial species diversion structures such as bridge poles or fencing will be included on the Chino Creek Bridge to avoid and minimize wildlife-vehicle collisions. The structures will be designed to be visible to birds, and to prevent perching by raptors, and will be of sufficient height to guide birds over vehicle traffic.

CM 23. Chino Creek Bridge will be designed without cable stays/guywires that would pose a significant threat of bird mortality and injury from collision.

CM 24. Chino Creek Bridge will be a minimum of 500 feet long and will accommodate dry wildlife movement areas on both banks of Chino Creek to ensure that ecosystem functions are maintained for the benefit of listed species. Rock slope protection will be avoided at the wildlife movement areas. If rock slope protection is required, modifications (e.g., small pebble, dirt, soil covered rip rap, or grouted movement pathways) will be made such that animals of all sizes can use the wildlife movement areas. If feasible, Chino Creek Bridge will be designed with columns rather than pier walls to improve visibility and openness and encourage usage by wildlife.

EFFECTS OF ACTION

Action Area

According to 50 CFR § 402.02 pursuant to section 7 of the Act, the "action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area. For this project, we have defined the action area to be the project impact area between Euclid Avenue and State Route 71 and surrounding the habitat within about 500 feet, which may be exposed to project-related effects such as increased noise, light, and dust levels and human activity during project construction.

Analytical Frame Work For the Section 7 (A)(2) Determinations

Jeopardy Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which are all consequences to listed species caused by the proposed action that are reasonably certain to occur; and (4) the Cumulative Effects, which evaluate the effects of future, non-Federal activities in the action area on the species.

For the section 7(a)(2) determination regarding jeopardizing the continued existence of the species, the Service begins by evaluating the effects of the proposed Federal action and the cumulative effects. The Service then examines those effects against the current status of the species to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the species in the wild.

Adverse Modification Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to destroy or to adversely modify designated critical habitat. "Destruction or adverse modification" of critical habitat means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species (50 CFR § 402.02).

In accordance with policy and regulation, the adverse modification analysis in this biological opinion relies on four components: (1) the status of critical habitat, which describes the condition of all designated critical habitat in terms of its physical and biological features, the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the environmental baseline, which analyzes the condition of the designated critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the effects of the action, which analyze all consequences to critical habitat caused by the proposed action that are reasonably certain to occur and their influence on the recovery role of the affected designated critical habitat units; and (4) cumulative effects, which evaluate the effects of future non-Federal activities in the action area on the physical and biological features of critical habitat and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on the designated critical habitat are evaluated in the context of the condition of all designated critical habitat, taking into account any cumulative effects, to determine if the consequences of the proposed action are likely to appreciably reduce the value of critical habitat as a whole for the conservation of the species.

STATUS OF THE SPECIES / CRITICAL HABITAT

Vireos breed and forage in low-elevation riparian woodland and shrub habitat dominated by willows (Service 2006) and tend to return to the same breeding territories annually (Rourke and Kus 2007). Most of the vireo breeding sites are located in southern California between the Tehachapi Mountains in Kern and Ventura counties south to northwestern Baja California, Mexico (Service 2006). A review of the status of the vireo in 2006 determined that management actions implemented since the original listing have led to a 10-fold increase in the vireo population since its listing in 1986, from 291 to 2, 968 known territories (Service 2006). Based on its improved status, the Service recommended that the vireo be downlisted from endangered to threatened status (Service 2006).

However, a new threat has emerged that has the potential to significantly affect vireo nesting throughout its range. A disease complex involving two species of ambrosia beetles, the polyphagous shot hole borer (*Euwallacea* sp. 1) and Kurushio shot hole borer (*Euwallacea* sp. 5), a mix of associated fungi (Lynch *et al.* 2016), and other pathogens is causing widespread damage to trees in riparian ecosystems throughout southern California (Eskalen *et al.* 2013). These shot hole borers create galleries in trees and inoculate the galleries with fungal spores. *Fusarium* sp. causes significant damage to trees, and the galleries open up trees to attack from other pathogens that may be even more damaging.

The combination of structural damage from the galleries and tissue damage from the pathogens causes limbs to break and trees to die. For example, occupied habitat in the Tijuana River (Recovery Unit 1) has already been infested, and an estimated 140,000 trees or 35 percent of the trees showed extensive damage from the disease complex (Boland 2016). Willow species are particularly susceptible to damage from the infestation. Preliminary reports suggest that the Prado Basin (Recovery Unit 7) and the San Luis Rey River (Recovery Unit 5) also have substantial infestations. The Sweetwater River (Recovery Unit 3) and San Diego Creek (Recovery Unit 8) are also known to be infested.

No systematic, regional surveys have been conducted, and it is likely that additional vireo habitat is infested. Because vireos require structure associated with willows and similar species, we anticipate that vireo breeding success will decline in infested habitats. It is too early to determine how this significant new threat will affect the overall status of the species, but it is being monitored by the Service. Significant mortality of mature trees related to this threat may alter vireo prey availability, increase exposure to predation (especially for vireo nests), and affect hydrogeomorphic processes (e.g., flooding, alluvial deposition) important for maintaining healthy riparian woodlands that vireos use for feeding, sheltering, and breeding.

Within the 11 Population Units designated in the draft recovery plan, the following areas have the greatest number of vireos in order of number: Camp Pendleton/Santa Margarita River (827 territories), Santa Ana River (813 territories), and the San Luis Rey River (233 territories) (Service 2006).

Final critical habitat for the vireo was designated on February 2, 1994 (Service 1994). The critical habitat encompasses approximately 38,000 acres, in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties, California. Critical habitat has been designated at 10 areas for the vireo, on the Santa Ynez River (Santa Barbara County), Santa Clara River (Ventura and Los Angeles Counties), Santa Ana River (Riverside and San Bernardino Counties), and Santa Margarita River, San Luis Rey River, Sweetwater River, San Diego River, Tijuana River, Coyote Creek, and Jamul-Dulzura Creeks (San Diego County). The project is located within the Santa Ana River Area of designated critical habitat for the vireo, which includes approximately 9,892 acres of critical habitat along the Santa Ana River, and contains the PBFs that are essential to the conservation of the species.

PBFs for the vireo are those habitat components that are essential for the primary biological needs of feeding, nesting, roosting, and sheltering. These PBFs can be described as riparian

woodland vegetation that generally contains both canopy and shrub layers, and includes some associated upland habitats. Vireos meet their survival and reproductive needs (food, cover, nest sites, nestling, and fledgling protection) within the riparian zone in most areas. In some areas they also forage in adjacent upland habitats, which may include sage scrub and grassland communities (Service 1994).

For more detailed information on vireo biology, ecology, rangewide status, threats, and conservation needs, and designated critical habitat, please refer to the draft recovery plan for the vireo (Service 1998) and the 5-year review for the species (Service 2006) at and the final critical habitat rule (Service 1994).

ENVIRONMENTAL BASELINE

The regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR § 402.02).

Site Characteristics and Surrounding Land Uses

The action area is located in the Prado Basin and Santa Ana River watershed, along the Pine Avenue alignment which crosses Chino Creek (Figure 1). Habitat types in the vicinity of the project include black willow, mulefat, cattail marsh, salt grass, coast live oak woodland, and open water, as well as agricultural lands, El Prado Golf Course, and disturbed and developed lands (Caltrans 2020).

Status of the Vireo and its Critical Habitat within the Action Area

Protocol vireo surveys were conducted within the action area in 2017. In 2017, 10 vireo territories were observed within the action area (Figure 3). Approximately 13.9 acres of potential nesting habitat for vireo occurs within the action area as Black Willow Thickets, Mulefat Thickets, and Tamarisk Thickets. This species is also expected to forage within Perennial Pepper Weed Patches and Poison Hemlock Patches, both of which exhibit dense vegetative cover of approximately 3 to 6 feet in height, with patchy distribution of mulefat. Surveyors noted the high availability of insects for foraging within these stands. No suitable habitat is present within the Borrow Site area.

An estimated 107.83 acres of designated critical habitat for the vireo are located within the action area, of which approximately 30.16 acres include PBFs (i.e., breeding and foraging habitat for the species in riparian woodland) that support vireo. The remaining 77.66 acres of designated

vireo critical habitat are vegetated by disturbed upland communities, are developed (i.e., El Prado Golf Course) or are existing roadways that do not provide habitat for vireo.

EFFECTS OF THE ACTION

Regulations implementing the Act (50 CFR § 402.02) define the effects of the action as all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR § 402.17).

The regulations for section 7(a)(2) note that "a conclusion of reasonably certain to occur must be based on clear and substantial information, using the best scientific and commercial data available" [50 CFR § 402.17(a)]. When considering whether activities caused by the proposed action (but not part of the proposed action) or activities reviewed under cumulative effects are reasonably certain to occur, we consider factors such as (1) past experiences with activities that have resulted from actions that are similar in scope, nature, and magnitude to the proposed action; (2) existing plans for the activity; and (3) any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

The project will permanently and temporarily affect 6.60 acres and 2.38 acres of suitable vireo habitat, respectively. Of this, approximately 3.51 acres and 0.65 acres of breeding habitat, and 3.09 acres and 1.73 acres of foraging habitat, will be permanently and temporarily impacted, respectively (Table 1). Note that the above is a summary of impacts to breeding and foraging habitats, which were mapped by Caltrans throughout the project area and included in the Biological Assessment (Caltrans 2020). Impacts to designated vireo critical habitat are analyzed in a separate section below.

Surveys have documented 10 vireo territories in the action area. Four of these vireo pairs will be subjected to the loss of a substantial portion of their use areas, ranging between 30 and 100 percent. Six vireo pairs will lose only a small portion of their use areas, ranging between 0 and 10 percent, but are located within 500 feet of the project footprint where they will be subject to disturbance from construction and operations.

The project has incorporated conservation measures (CMs) to avoid and minimize impacts to vireos. Vegetation removal for the project will be conducted under the supervision of the Project Biologist between September 1 and March 14, when vireos have migrated to their winter range and will not be present in the project area. In addition, all native or sensitive habitats outside and adjacent to the construction limits will be designated as ESAs on project maps. ESAs will be temporarily fenced during construction with orange plastic snow fence, orange silt fencing, or in areas of flowing water, with stakes and flagging. Therefore, we do not expect that vireo adults, eggs, or nestlings will be directly killed or injured. However, vireo pairs usually return to the same breeding territory each year (Rourke and Kus 2007), and removal of a substantial portion of a vireo pair's territory will force the pair to expand their existing territory or establish a new territory. Vireos appear to be distributed throughout much of the suitable habitat within the

riparian area; therefore, displaced vireos may be forced to compete with resident vireos when attempting to expand an existing territory or establish a new territory.

If displaced birds cannot find suitable habitat to forage and shelter in, we anticipate they will be more vulnerable to predation and otherwise may die or be injured. Vireos that successfully establish territories in adjacent habitat are expected to experience reduced productivity (e.g., delayed initiation or prevention of nest building, fewer nesting attempts per season, and/or overall reduction in reproductive output) due to reduced availability of foraging and breeding habitat and increased territorial interactions. For example, surveys conducted during the 2004 and 2005 breeding seasons on San Diego Creek in Orange County found that when vireo breeding habitat was removed, vireos returning to the affected area had lower productivity than vireos occupying a portion of the creek where the vegetation was unaltered. Four territories where habitat was removed produced a total of five young (1.25 young/pair). Two other territories, which did not have habitat removed, produced a total of eight young (4 young/pair; Chambers Group, Inc. 2005).

Upon returning from their winter range, vireo pairs that experience the loss of only a small portion (no more than 10 percent) of their use areas could experience increased territorial interactions and be harmed by the overall reduced availability of foraging habitat in the project area. In addition, we anticipate that the vireos will be subject to disturbance from construction activities. Some project work will be conducted at night with construction lighting that will affect the adjacent vireo habitat. Light that alters natural light patterns in ecosystems can lead to increased predation, disorientation, and disruption of inter-specific interactions (Longcore and Rich 2004). The project has incorporated measures to minimize the effects of lighting on vireos. All nighttime construction lighting and nighttime lighting of the completed project will be of the lowest illumination necessary for human safety, directed at the immediate work area, and away from adjacent sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats. With implementation of these measures we anticipate the effects of construction lighting on vireos will be minimized to the point where such effects are insignificant[2].

Noise and vibrations associated with the use of heavy equipment during project construction have the potential to disrupt vireo behaviors in adjacent habitat by masking intraspecific communication and startling birds (e.g., see Dooling and Popper 2007 for a discussion of observed effects of highway noise on birds). Project construction noise is anticipated to reach up to 96 dBA during pile driving activities (Caltrans 2018). Maximum ambient noise levels in the action area have been measured at 64 dBA (Caltrans 2018). To minimize construction noise impacts to vireos, a noise abatement plan will be implemented. Nonetheless, high noise levels are anticipated from project construction work during two to three vireo breeding seasons. This noise could result in displacement and reproductive loss for the six vireo pairs that will experience the loss of only a small part of their use areas. Displaced vireos may also be subjected

[2] For the purposes of a section 7 consultation, an insignificant effect is one that is sufficiently small that a person would not be able to meaningfully measure, detect, or evaluate it.

to increased predation, death, or injury and may not be able to find sufficient nearby habitat or may be forced to compete with other vireos when attempting to expand an existing territory or establish a new territory.

Once construction is complete, noise from project operations will be minimized to the level of insignificance through the use of permanent sound barriers or structures attached to the bridge that will reduce traffic noise to levels below 60 dBA. These barriers will also reduce light spill into the adjacent habitat and will reduce bird mortality from vehicle strikes.

Project construction may increase fugitive dust, pollution, and siltation in the adjacent habitat as a result of grading, sediment moving, and operation of heavy equipment in proximity to Chino Creek. Increased dust, sedimentation, and pollution may temporarily degrade vireo habitat. To minimize the potential for sedimentation and water quality impacts, a SWPPP will be implemented, including use of appropriate BMPs to control dust, erosion, sedimentation, and pollution. With implementation of these measures we anticipate the effects of construction dust, pollution, and sedimentation on vireos will be minimized to the point where such effects are insignificant.

The project may increase wildfire risk and effects from human encroachment from increased access. Measures have been incorporated, such as the employee education program and availability of firefighting equipment, to avoid and minimize these impacts to vireos. The project site is adjacent to existing development in a highly populated area, so with the proposed conservation measures, any increase in habitat degradation associated with these factors is expected to be insignificant.

The project will restore/enhance a total of 24.56 acres of native riparian habitat suitable for vireo habitat in the vicinity of the project. This represents an increase in the quantity and quality of vireo habitat on the site (currently 8.98 acres of habitat is present within the project footprint, including 4.16 acres of native riparian breeding habitat and 4.82 acres of nonnative riparian foraging habitat). It may be 2 to 7 years until restored riparian habitats are again suitable for vireo nesting and an immediate, short-term reduction (up to 10 pairs) in the number of vireos supported in the action area is likely. However, once construction is complete and restoration of temporarily impacted habitat is initiated and/or achieved, we anticipate that vireos will re-establish these territories as soon as the habitat is mature enough to support vireo breeding.

Habitat restoration planting and maintenance is expected to result in an overall benefit to the vireo, but it may result in disturbance of vireos that are adjacent to the restoration site, or that move into the site as restoration progresses. However, the project includes CMs to minimize disturbance of vireos during breeding activities and to ensure that no nests are destroyed as a result of maintenance activities. If maintenance (e.g., weeding, treating weed re-sprouts with herbicide) of a wetland restoration area potentially occupied by vireos is necessary between March 15 and August 31, a qualified biologist will survey for vireos within the restoration area, access paths to it, and other areas susceptible to disturbances by restoration site maintenance. Restoration work will be allowed to continue on the site during the survey period. However, if vireos are found during any of the visits, Caltrans will notify and coordinate with the PSFWO to

identify measures to avoid and/or minimize effects to the vireo (e.g., nests and an appropriate buffer will be flagged by the biologist and avoided by the maintenance work).

In summary, implementation of the proposed project is likely to result in a short-term reduction in the number of vireos supported in the action area (10 pairs) due to the direct loss of a portion of their habitat and, if they survive the initial habitat loss, breeding season disturbance in their habitat that could lead to displacement, reproductive loss, increased predation, death, or injury during two to three breeding seasons. The vireo pairs to be impacted represent approximately 1 percent of the vireo pairs in the Santa Ana River (approximately 813 pairs) and less than 1 percent of the rangewide estimate of vireo pairs (approximately 2,968 pairs). During construction, we expect vireos will continue to occupy the Santa Ana River adjacent to the project area, and construction disturbance in the project area will be temporary. The project is not anticipated to reduce the number of vireos that can be supported in the general project area or increase the local risk of vireo extirpation. Thus, the project is not expected to result in an appreciable reduction in the numbers, reproduction, or distribution of the species rangewide.

Critical Habitat

The action area is located within the Santa Ana River Area of designated vireo critical habitat in San Bernardino and Riverside Counties. The Santa Ana River Area of designated vireo critical habitat encompasses 9,892 acres of designated critical habitat. The action area contains a total of 107.83 acres of designated critical habitat, with permanent and temporary impacts to 13.14 acres and 4.15 acres, respectively. Of this, 8.87 acres contain the PBFs that support breeding and foraging. The temporarily impacted habitat will be restored following project completion, so temporary impacts are not anticipated to have a long-term effects on vireo critical habitat.

The project will decrease the overall area of vireo critical habitat in the action area and rangewide by approximately 13.14 acres. The permanent impacts of the project on the Santa Ana River area of designated critical habitat for the vireo represent less than 1 percent of the designated critical habitat within the area, and an even smaller percentage of the critical habitat designated for this species. In addition, 6.36 acres of the area permanently affected critical habitat does not provide PBFs which support vireo.

There are no unit-specific goals identified in the final rules designating critical habitat for vireo. Therefore, our analysis focuses on the effect of the project on PBFs in the Santa Ana River Area of critical habitat and the effect of the project on the unit's ability to support a core population of vireo. The PBFs for vireo critical habitat are those habitat components that are essential for the primary biological needs of feeding, nesting, roosting, and sheltering (i.e., riparian woodland vegetation that generally contains both canopy and shrub layers, and includes some associated upland habitats).

The project will result in the permanent loss of 13.14 acres of vireo critical habitat. The project will result in limited degradation in habitat quality adjacent to the roadway, but this area will still contain PBFs essential for to support the primary biological needs of feeding, nesting, roosting, and sheltering. The project will benefit vireo critical habitat through the restoration of 24.56

acres of riparian habitat in the vicinity of the project, so there will be a net increase in riparian vegetation that provides PBFs that support vireo in the Santa Ana River Area. This will help maintain the long-term function of vireo critical habitat in the Santa Ana River Area and the ability of this critical habitat unit to support a core population of vireo.

Effect on Recovery

The project is consistent with the recovery goals identified in the draft recovery plan for vireo (Service 1998). The restoration work will help accomplish recovery task 1, which is to protect and manage riparian and adjacent upland habitat within the vireo's historic range; and recovery task 3, which is to develop and evaluate vireo habitat restoration projects and techniques.

The project will result in permanent impacts to 6.60 acres and temporary impacts to 2.38 acres of vireo breeding and foraging habitat and result in noise disturbance, displacement and reproductive loss to up to 10 vireo pairs. However, these impacts have been minimized. Moreover, the restoration project will result in an increase in the quantity and quality of vireo habitat on the site from 8.98 acres (including 4.16 acres native riparian breeding habitat and 4.82 acres of nonnative riparian foraging habitat) to 24.56 acres of native riparian habitat. Thus, over the long-term, the restoration project may support more vireos and/or increased vireo productivity than under baseline conditions and is expected to contribute to the conservation and recovery of the species by restoring high quality vireo breeding and foraging habitat in southwest San Bernardino County.

CUMULATIVE EFFECTS

Cumulative effects are effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR § 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are unaware of any future non-Federal actions that are reasonably certain to occur within the action area and may affect vireo.

CONCLUSION

After reviewing the current status of the vireo, the environmental baseline for the action area, effects of the proposed action, and the cumulative effects, we have determined that the activities considered in this biological opinion are not likely to jeopardize the continued existence of the vireo or adversely modify its designated critical habitat. We have reached this conclusion for the following reasons:

1. Adverse effects to the vireo will be reduced by implementation of the avoidance and minimization measures identified in the "Project Description" of this biological opinion.

2. The proposed project will result in a short term reduction (up to 10 pairs) in the number of vireos supported in the action area due to the direct loss of a portion of their habitat

and/or construction and noise disturbance, which represents less than 1 percent of the roughly 2,968 pairs range wide.

3. The project will permanently impact 6.60 acres of vireo occupied habitat out of thousands of acres of vireo habitat rangewide.

4. The project will temporarily affect 2.38 acres of vireo occupied habitat; this habitat will be restored and will again be suitable habitat for vireo breeding and foraging within 2 to 7 years.

5. The construction-related death and injury of an estimated 10 pairs of vireos will not appreciably reduce the overall numbers or reproduction of the Santa Ana River population of vireos and, therefore, will not affect the distribution of the species as a whole.

6. The project will permanently impact 13.14 acres of vireo designated critical habitat out of the 9,892 acres of designated critical habitat within the Santa Ana River Area of designated critical habitat, which represents less than 1 percent of the Unit and an even smaller percentage of designated vireo critical habitat.

7. With the conservation benefits that will be implemented as detailed in the Conservation Measures, the small area of effects to designated vireo critical habitat will not appreciably reduce the function vireo critical habitat to support the conservation of the vireo a whole.

8. Impacts to occupied vireo habitat will be offset as detailed in the Conservation Measures.

9. Wildlife connectivity measures proposed in association with the project will ensure that ecosystem functions are maintained for the benefit of listed species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. The Service further defines "harm" to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the proposed protective measures and the terms and conditions of an incidental take statement and occurs as a result of the action as proposed.

The measures described below are non-discretionary, and must be undertaken by Caltrans for the exemption in section 7(o)(2) to apply. Caltrans has the continuing duty to regulate the activity that is covered by this incidental take statement. If Caltrans fails to assume and implement the terms and conditions, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR § 402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

We anticipate that up to 10 pairs of vireos will be taken as a result of construction of the Pine Avenue Extension Project.

Incidental take is expected to be in the form of harm as defined in 50 CFR § 17.3, due to the direct loss of a portion of their foraging and breeding habitat and increased displacement by project work that could result in death or injury, and reproductive loss for up to three breeding seasons.

The take exemption will be exceeded if more than:

1. Ten pairs of vireos are documented within the action area; or

2. 6.60 acres of vireo-occupied habitat are permanently altered and 2.38 acres of vireo-occupied habitat are temporarily disturbed as a result of project implementation.

EFFECT OF TAKE

In the accompanying biological opinion, we determined that this level of anticipated take is not likely to result in jeopardy to the vireo.

REASONABLE AND PRUDENT MEASURES

Caltrans is implementing significant conservation measures as part of the proposed action to minimize the incidental take of vireos. In addition, the following reasonable and prudent measure is necessary to monitor and report the take of vireos:

1. Caltrans will monitor and report any project-related incidental take of vireos to the PSFWO.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, Caltrans must comply with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are non-discretionary.

1.1 Prior to initiating project work, three preconstruction surveys will be conducted within all suitable vireo habitat in or within 500 feet of the Pine Valley Avenue Extension Project footprint, within 30 days prior to initiation of vegetation removal activities, to verify that no more than 10 vireo pairs will be harmed as a result of the project. If it is the wrong time of year for effective surveys, at the discretion of the Project Biologist, a copy of project surveys conducted within the year may be submitted.

1.2 Prior to initiating work, Caltrans will provide to the PSFWO a map showing the distribution of vireos relative to the project footprint and an estimate of the number of vireos that will be impacted by the project, or confirm in writing that the number of pairs that will be impacted by the project remains correct.

1.3 Caltrans will notify the PSFWO of the area of vireo habitat cleared within 30 days of completing removal of vireo habitat. The purpose of this notification is to ensure that impacts to vireo habitat from the proposed project do not exceed the take thresholds.

DISPOSITION OF SICK, INJURED, OR DEAD SPECIMENS

Upon locating dead, injured, or sick individuals of threatened or endangered species, initial notification must be made to our Division of Law Enforcement in either San Diego, California, at 619-557-5063 or in Torrance, California, at 310-328-6307 within 3 working days. Notification should also be sent by telephone and writing to this office in Carlsbad, California, at 2177 Salk Avenue, Suite 250 Carlsbad, California 92008, 760-431-9440. Written notification must be made within 5 calendar days and include the collection date and time, the location of the animal, and any other pertinent information. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. The remains of intact specimens shall be placed with educational or research institutions holding the appropriate State and Federal permits. Remains shall be placed with the San Diego Natural History Museum, San Diego. Arrangements regarding proper disposition of potential museum specimens shall be made with the institution by the authorized biologist prior to implementation of the action.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans or to develop information. We have not identified any additional conservation recommendations that will further benefit the vireo within the action area.

REINITIATION NOTICE

This concludes formal consultation regarding Pine Avenue Extension Project as outlined in materials submitted to us. Reinitiation of consultation is required and will be requested by

Caltrans or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and:

1. If the amount or extent of taking specified in the incidental take statement is exceeded;

2. If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;

3. If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion; or

4. If a new species is listed or critical habitat designated that may be affected by the identified action.

If you have any questions regarding this biological opinion, please contact Sally Brown of this office at 760-431-9440, extension 208.

Sincerely,

SCOTT SOBIECH

Digitally signed by SCOTT SOBIECH
Date: 2020.05.22 10:47:11 -07'00'

Scott A. Sobiech
Field Supervisor

LITERATURE CITED

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[Service] U.S. Fish and Wildlife Service. 1998. Draft recovery plan for the least Bell's vireo (*Vireo bellii pusillus*). Portland, Oregon. 139 pp.

[Service] U.S. Fish and Wildlife Service. 2006. Least Bell's vireo (*Vireo bellii pusillus*) 5-year review: Summary and evaluation. Prepared by the Carlsbad Fish and Wildlife Office, Carlsbad, California. 26 pp.

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Figure 1. Pine Avenue Extension Project and Borrow Site (Caltrans 2020).

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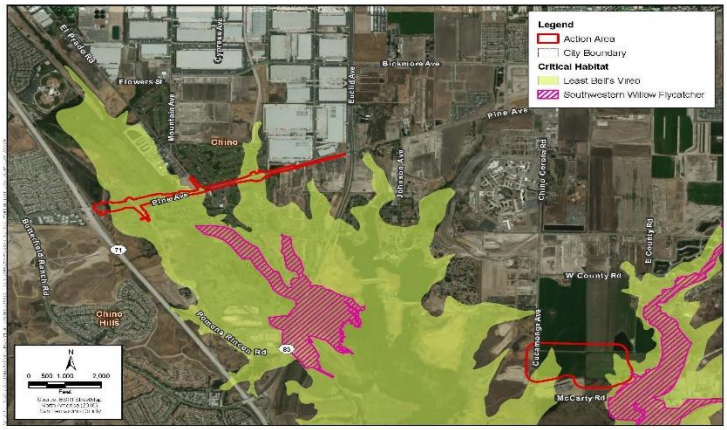

Figure 2. Pine Avenue Extension Project, Critical Habitat (Caltrans 2020).

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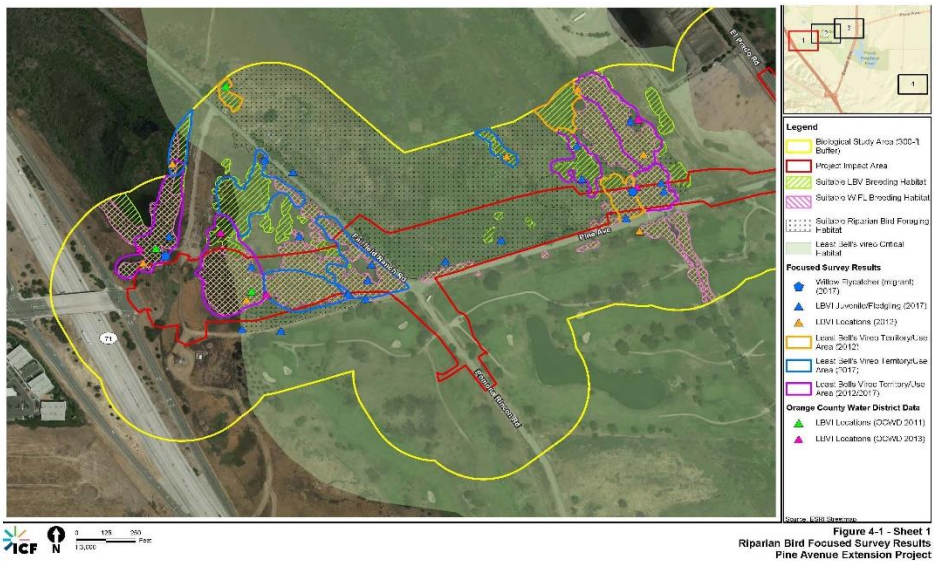

Figure 3. Pine Avenue Extension Project, Least Bell's Vireo Territories (Caltrans 2020).

APPENDIX A

Section 7 Consultation for the
Pine Avenue Extension from State Route 71 to Euclid Avenue
San Bernardino County, California

The following information supports the U.S. Fish and Wildlife Service's concurrence with the California Department of Transportation's (Caltrans) not likely to adversely affect determination for southwestern willow flycatcher (*Empidonax traillii extimus;* flycatcher) in accordance with section 7 of the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*), for the Pine Avenue Extension from State Route 71 to Euclid Avenue, San Bernardino County, California.

Protocol surveys conducted for the project documented two adult flycatchers in the southwestern part of the action area on May 15, 2017, and one adult flycatcher in the southeastern part of the action area on June 2, 2017; However no flycatchers were observed during the third survey period between June 25 and July 17, and no nesting behavior was observed, so it is assumed that the flycatchers seen earlier in the spring were migratory (Caltrans 2020). The project will result in the loss of approximately 9.94 acres of black willow habitat that is suitable flycatcher foraging habitat (Caltrans 2020). Vegetation clearing within foraging habitat that is suitable for flycatchers will occur between September 1 and March 14, when this migratory species is not expected to be present in the project area.

Project construction may also indirectly impact flycatchers in the adjacent habitat within 500 feet (e.g., effects associated with light, noise, invasive species, human encroachment, and construction dust, erosion, sedimentation, and contaminant run-off). Light that alters natural light patterns in ecosystems can lead to increased predation, disorientation, and disruption of inter-specific interactions (Longcore and Rich 2004). Noise and vibrations associated with the use of heavy equipment during project construction have the potential to disrupt flycatcher behaviors in adjacent habitat by masking intraspecific communication and startling birds (e.g., see Dooling and Popper 2007 for a discussion of observed effects of highway noise on birds). Nonnative species often out-compete and exclude native species, potentially altering the structure of the vegetation, degrading or eliminating habitat used by the flycatcher, and providing food and cover for undesirable nonnative animals (Bossard *et al.* 2000). Construction dust, erosion, sedimentation, and contaminant run-off can degrade adjacent habitat.

The project has incorporated measures to avoid and minimize impacts to flycatchers from noise, light, invasive species, human encroachment, and construction dust, erosion, sedimentation, and contaminant run-off. Night lighting for construction will be of the lowest illumination necessary for human safety, directed at the immediate work area, and away from adjacent sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats. To minimize noise impacts to flycatchers, the project will implement a noise abatement plan to minimize construction noise to vireos nesting within 500 feet of the project site, and the noise abatement measures that are implemented for vireos are also anticipated to minimize disturbance to flycatchers that may be foraging within 500 feet of the site. Noise from project operations will be minimized to the level of insignificance through the use of permanent sound barriers or structures attached to the bridge that will reduce traffic noise to levels below 60 dBA. These barriers will also reduce light spill into the adjacent habitat and will reduce bird mortality

from vehicle strikes (Caltrans 2020). The Biological Monitor will monitor the project site immediately prior to and during construction to identify the presence of invasive weeds and recommend measures to avoid their inadvertent spread in association with the project. To avoid and minimize impacts from increased human activity and encroachment during construction, the project limits will be fenced, and construction personnel will be trained in the importance of strictly limiting activities, vehicles, equipment, and construction materials to the project footprint to avoid adjacent sensitive resource areas. The Biological Monitor will periodically monitor the work area to document that work activities do not generate excessive amounts of dust, and impacts from fugitive dust will be avoided and minimized through watering and other appropriate measures. To avoid and minimize impacts from erosion, sedimentation, and contaminant run-off, the project will install appropriate erosion control measures, and all equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated staging areas. These measures are anticipated to minimize these potential impacts on flycatcher behavior in adjacent habitat to the point where such effects are insignificant.

Conservation Measures

The following CMs will be incorporated into the project to avoid and minimize impacts to the flycatcher. For ease of reference, the numbering below is a continuation of the numbering of the CMs in the associated biological opinion.

CM 25. Measures included in the biological opinion to avoid and minimize project impacts to vireo and its designated critical habitat will also avoid and minimize project impacts to the flycatcher.

United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

In Reply Refer to:
FWS-SB-2022-0038579

July 7, 2022
Sent Electronically

Mr. Aaron Burton
Senior Environmental Planner
Department of Transportation, District 8
464 West Fourth Street, 6th Floor
San Bernardino, California 92401

Subject: Amendment to the Biological Opinion issued for the Pine Avenue Extension from State Route 71 to Euclid Avenue, San Bernardino County, California

Dear Aaron Burton:

This document amends the U.S. Fish and Wildlife Service's (Service) biological opinion (FWS-SB- 16B0191-19F1560), issued May 22, 2020, for the Pine Avenue Extension from State Route 71 (SR-71) to Euclid Avenue Project (Project) to address changes in the Project description and associated footprint. In your amendment request, received via email on August 25, 2021, and subsequently modified on October 26, 2021, with additional information provided by the City of Chino Hills on November 11, 2021, you indicated that: (1) revised engineering plans have modified the Project footprint and (2) based on the revised build alternative, the number of least Bell's breeding territories affected will be reduced from seven to six.

Modification to Project Footprint

Per the revised build alternative, the Project description has been modified to include the following changes: (1) culverts conveying hydrological flows from Cypress Channel under Pine Avenue have changed from four 12-foot wide by 10-foot high RCB culverts to two double 12-foot wide by 9-foot high RCB culverts; (2) the existing sewer line under Chino Creek will be relocated to the existing Pine Avenue right-of-way; (3) the Project will replace the two culverts, headwalls, and paved road over Chino Creek within the existing Pine Avenue right-of-way; and (4) the Project will construct a low-flow bio-swale and retention basin between proposed new Pine Avenue alignment and the existing Pine Avenue right-of-way, immediately east of Chino Creek.

Based on the above modifications to Project design, both the permanent and temporary impact area have changed, and the number of affected least Bell's territories reduced by one. The scope of revised Project design will result in the following changes: permanent impacts to least Bell's vireo suitable habitat will increase by 0.73 acres, permanent shading impacts have increased by 0.08 acres, and temporary impacts will decrease by 0.06 acres (Table 1).

Table 1. Revised impacts to suitable least Bell's vireo habitat.

Habitat Definition	New Permanent Impact Area (acres)	Change in footprint (acres)	New Permanent Shading Impact Area (acres)	Change in footprint (acres)	New Temporary Impact Area (acres)	Change in footprint (acres)
Breeding Habitat	3.51	+0.53	0.57	+0.04	0.74	+0.09
Foraging Habitat	3.07	+0.20	0.26	+0.04	1.58	-0.15
Total	6.58	+0.73	0.83	+0.08	2.32	-0.06

In addition, permanent impacts to least Bell's vireo designated critical habitat that contain physical or biological features (PBFs) will decrease by 0.06 acres, with permanent shading impacts increasing by 0.08 acres, and temporary impacts decrease by 0.06 acres (Table 2).

Table 2. Revised impacts to least Bell's vireo designated critical habitat

Habitat Definition	New Permanent Impact Area (acres)	Change in footprint (acres)	New Permanent Shading Impact Area (acres)	Change in footprint (acres)	New Temporary Impact Area (acres)	Change in footprint (acres)
With PBFs	5.83	-0.06	0.83	+0.08	2.27	-0.06
Lacking PBFs	14.98	+8.62	0.09	-0.05	2.60	+0.68
Total	20.81	+8.56	0.92	+0.03	4.87	-0.62

Incorporating the modifications of this amendment into our original biological opinion does not change our conclusion in that biological opinion. All other portions of the May 22, 2020, biological opinion, including conservation measures and Terms and Conditions provided therein, remain unchanged. If you have any questions or concerns about this amendment, please contact John M. Taylor[1] of my staff at (760) 322-2070, extension 418.

Sincerely,

Digitally signed by ROLLAND WHITE
Date: 2022.07.07 13:56:51 -07'00'

Rollie White
Assistant Field Supervisor

[1] john_m_taylor@fws.gov

Chapter 6 List of Preparers

The following persons were principally responsible for review and preparation of this IS/EA.

6.1 California Department of Transportation

Aaron P. Burton	Senior Environmental Planner, Local Assistance
Andrew Walters	Senior Environmental Planner, Cultural Studies
Dicken Everson	Cultural Studies
Marko Germono	Environmental Planner, Local Assistance
Sean Yeung	Senior Transportation Engineer

6.2 City of Chino

Maria Fraser P.E.	CIP Engineering Manager
Amer Jakher	City Engineer
Gia Kim	Senior Project Manager
Lisa Naslund, P.E.	Project Manager

6.3 Huitt-Zollars, Inc.

Johnny Murad P.E.	Senior Project Manager/Vice President
Miguel A. Hernandez, P.E., P.L.S., QSD	Associate Engineer
Tyler N. Hodges	Civil Engineer, E.I.T.

6.4 ICF

Brian Calvert	Project Director
Youji Yasui	Environmental Planner
Colleen Davis	Senior Manager, Historic Preservation
Daniel Paul	Senior Historic Preservation Specialist
Karen Crawford	Managing Director, Archaeology
Rachel Droessler	Senior Archaeologist

Patrick McGinnis	Senior Archaeologist
Greg Hoisington	Senior Manager, Biology
Marisa Flores	Senior Manager, Biology
John Markham	Senior Regulatory Specialist, Permitting
Paul Schwartz	Senior Restoration Specialist/Wetlands Ecologist
Brittany Buscombe	GIS Specialist
Elizabeth Irvin	Senior Technical Specialist
Elliott Wezerek	Water Resources Specialist
Johnnie Garcia	GIS Manager
Laura Rocha	Senior Water Resources Specialist
Rusty Whisman	Senior Associate, Air Quality
Joza Burnam	Senior Environmental Planner, Air Quality

Chapter 7 Distribution List

The Notice of Intent was distributed to the federal, state, regional, local agencies and elected officials. In addition, all interested groups, organizations, and individuals within a 500-feet radius of the project limits were provided the Notice of Intent for the Draft IS/EA.

7.1 Agencies

U.S. Army Corps of Engineers
915 Wilshire Blvd. Suite 1101
Los Angeles, CA 90017

U.S. Fish and Wildlife Service
Region 8
2800 Cottage Way
Sacramento, CA 95825-1846

U.S. Department of Agriculture – Natural Resources Conservation Service
430 G Street, Suite 4164
Davis, CA 95616

U.S. Fish and Wildlife Service
777 E. Tahquitz Canyon Way, Suite 208
Palm Springs, CA 92262

CAL FIRE Southern Region HQ Operations
2524 Mulberry St
Riverside CA 92501

California Department of Fish and Wildlife
South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123

California Highway Patrol
8118 Lincoln Avenue
Riverside, CA 92504

California Department of Fish and Wildlife
3602 Inland Empire Blvd, Suite C-220
Ontario, CA 91764

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Southern California Association of Governments
3403 10th Street, Suite 805
Riverside, CA 92501

Santa Ana Regional Water Quality Control Board
3737 Main Street, Suite 500
Riverside, CA 92501-3348

Chairman Curt Hagman
San Bernardino County Supervisor
Fourth District
385 N. Arrowhead Avenue, Fifth Floor
San Bernardino, CA 92415

City of Chino
Nick Liguori, Director
Development Services
13220 Central Avenue
Chino, CA 91710

City of Chino Hills
Community Development Dept.
14000 City Center Drive
Chino Hills, CA 91709

Chino Valley Independent Fire District
14011 City Center Drive
Chino Hills, CA 91709

Chino Hills Police Station
Captain John Walker
14077 Peyton Drive
Chino Hills, CA 9170

Chino Police Department
Chief Karen Comstock
5450 Guardian Way
Chino, CA 91710

State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Orange County Flood Control District
300 N. Flower Street, 6th Floor
Santa Ana, CA 92703

City of Chino Hills
2001 Grand Avenue
Chino Hills, CA 91709

El Prado Golf Course
Kevin Knutson, General Manager
6555 Pine Avenue
Chino, CA 91708

Gabrieleno Band of Mission Indians-Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA 91723

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA 91778

San Bernardino County Dept of Public Works
Flood Control District
825 East Third Street
San Bernardino, CA 92415

Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708

IEUA
Attn: Shivaji Deshmukh
6075 Kimball Ave
Chino, CA 91708

Chino Basin Desalter Authority
3550 E. Philadelphia St., Suite 170
Ontario, CA 91761

7.2 Interested Groups, Organizations, and Individuals

GLE Edgewater Properties LLC
248 E. Foothill Blvd, Suite 202
Monrovia CA 91016

Chino Center Inc.
2001 Ross Avenue, Suite 3400
Dallas, TX

BOS Legacy Limited Partnership
15857 Bear Mountain Blvd
Bakersfield, CA

Pine Corporate Center Owners Assn.
2020 Main Street, Suite 800
Irvine, CA 92614

ARK Industries LLC
65 Parker
Irvine, CA 92618

Cal Atlantic Group Inc.
15360 Barranca Parkway
Irvine, CA 92618

Blevins, Lee Dudley Separate Prop RE
5867 Pine Avenue
Chino Hills, CA 91709

Riverside-Corona Resource Conservation District
4500 Glenwood Drive
Riverside, CA 92501

Santa Ana Watershed Association (SAWA)
1835 Chicago Ave, Suite C
Riverside, CA 92507

Appendix A Section 4(f) Evaluation

Pine Avenue Extension Project

Section 4(f) De Minimis Finding

Submitted Pursuant to 49 USC 303 and 23 USC 138

City of Chino, San Bernardino, California
08-SBD-Pine Avenue

Federal Project Number HPLUL 5188 (018)

Project ID 200207

September 2022

STATE OF CALIFORNIA
Department of Transportation

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.

To request this document in an alternative format due to a disability, please contact Lisa Almilli, Accessibility Coordinator for the City of Chino, via phone at (909) 334-3524 or email at lalmilli@cityofchino.org.".

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List of Abbreviated Terms

ARB	California Air Resources Board
BMP	best management practices
Caltrans/Department	California Department of Transportation
CFR	Code of Federal Regulations
City	City of Chino
County	San Bernardino County
FHWA	Federal Highway Administration
IS/EA	Initial Study/Environmental Assessment
NRHP	National Register of Historic Places
PS&E	Plans, Specifications, and Estimate
SCAQMD	South Coast Air Quality Management District
SSP	Standard Special Provisions
TMP	Transportation Management Plan
USC	United States Code

Chapter 1 Introduction

1.1 Section 4(f) of the Department of Transportation Act of 1966

This section of the document discusses *de minimis* impact determinations under Section 4(f). Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 United States Code (USC) 138 and 49 USC 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This amendment provides that once the U.S. Department of Transportation (USDOT) determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a de minimis impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. FHWA's final rule on Section 4(f) *de minimis* findings is codified in 23 Code of Federal Regulations (CFR) 774.3 and CFR 774.17.

Responsibility for compliance with Section 4(f) has been assigned to the Department pursuant to 23 USC 326 and 327, including *de minimis* impact determinations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

- This section of the document discusses parks, recreational facilities, wildlife refuges, and historic properties found within or next to the project area that do not trigger Section 4(f) protection because: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, or 4) the project does not permanently use the property and does not hinder the preservation of the property.

The proposed project is a transportation project that would receive federal funding and/or discretionary approvals through the U.S. Department of Transportation, Federal Highway Administration (FHWA); therefore, documentation of compliance with Section 4(f) is required.

1.2 Section 4(f) *De Minimis* Impact Evaluation Requirements

Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act amended Section 4(f) legislation at 23 USC 138 and 49 USC 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This revision provides that once the U.S. Department of Transportation determines that a transportation use of Section 4(f) property—after consideration of any impact avoidance, minimization, and mitigation or enhancement measures—results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section

4(f) evaluation process is complete. FHWA's final rule on Section 4(f) *de minimis* findings is codified in 23 Code of Federal Regulations (CFR) 774.3 and 23 CFR 774.17.

Responsibility for compliance with Section 4(f) has been assigned to the California Department of Transportation (Department) pursuant to 23 USC 326 and 23 USC 327, including determinations and approval of Section 4(f) evaluations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

1.3 Section 4(f) Use

The term *use* is defined in 23 CFR 774.17 in three ways:

- When land is permanently incorporated into a transportation facility;
- When there is a temporary occupancy of land that is adverse in terms of the statute's preservation as determined by the criteria in §774.13(d); or
- When there is a constructive use[1] of a Section 4(f) property as determined by the criteria in §774.15

[1] A constructive use occurs when the transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the property are substantially diminished.

Chapter 2 Project Description

The City of Chino, in coordination with the California Department of Transportation (Caltrans), proposes to extend Pine Avenue from State Route 71 (SR-71) eastward to El Prado Road as an urban four-lane arterial and to widen Pine Avenue to a four-lane arterial from El Prado Road to Euclid Avenue (SR-83) in the Cities of Chino and Chino Hills. The project also includes excavation of soil from a borrow site located south of the Pine Avenue alignment and south of Chino Corona Road between Cucamonga Avenue and Hellman Avenue. The project area is within the northern Prado Flood Control Basin in San Bernardino County, California. Specifically, the project area is located in the City of Chino and Chino Hills, along the existing Pine Avenue alignment between SR-71 and Euclid Avenue. Land uses in the vicinity include recreational/open space, the El Prado Golf Course, and commercial/industrial uses.

2.1 Purpose

The purpose of this project is to:

- Provide an additional link to SR-71 from Euclid Avenue to accommodate existing and future traffic demand in the Cities of Chino and Chino Hills, consistent with the Transportation Mobility Element of the County of San Bernardino's Countywide General Plan, City of Chino General Plan Circulation Element, and City of Chino Hills 2014 General Plan Update Roadway Plan;

2.2 Need

Based on the U.S. Census Bureau, the City and Town Populations Totals: 2010-2019 tables, the City of Chino has experienced a 20 percent growth between year 2010 to 2019 and the City of Chino Hills has experienced a 12 percent growth during the same time period. In addition, current land use proposals as well as existing residential land uses are expected to generate increased traffic demand in the area. The existing level of service (LOS) in the vicinity of the proposed project during peak hours is operating at an unacceptable level (LOS of E or worse), specifically for the Pine Avenue, east of Euclid Avenue (LOS F) and Butterfield Ranch Road, east of SR-71 (LOS F) roadway segments, and the SR-71 Northbound, Central Avenue to Pine Avenue (LOS F), SR-71 Northbound, Pine Avenue to Euclid Avenue (LOS F) freeway segments. In addition, based on forecasted traffic demand, the following intersections in the vicinity of the proposed project are anticipated to operate at an unacceptable LOS during one or more peak hours under future year 2023 without the proposed project: SR-71 Southbound Ramps/Shady View Drive/Butterfield Ranch Road (LOS E), and Euclid Avenue/Pine Avenue (LOS F).

2.3 Project Alternatives

The following alternatives will be evaluated in the environmental document for the proposed project:

- No Build Alternative;
- Northern Alignment (Four Lanes) with Span Bridge (Build Alternative).

2.3.1 No Build Alternative

The No Build Alternative does not include improvements to the Pine Avenue configuration. There would continue to be no roadway between Pomona Rincon Road/Fairfield Ranch Road and SR-71 and no eastern interchange at SR-71 and Pine Avenue. Pine Avenue would continue to be a two-lane road between Pomona Rincon Road/Fairfield Ranch Road and SR-83. Due to prior flooding and degradation of the roadbed, Pine Avenue at Chino Creek has been recently repaired. The storm damaged asphalt, concrete, and CMP have been removed and replaced with two 96-inch CMPs. Between El Prado Road and Pomona Rincon Road/Fairfield Ranch Road, Pine Avenue would continue to be subject to road closures due to flooding at Chino Creek during minor storm events. The City of Chino and Chino Hills Circulation Elements specify Pine Avenue as a four-lane road between SR-71 and Euclid Avenue, therefore, the No Build Alternative would not be consistent with adopted local plans.

2.3.2 Northern Alignment (Four Lanes) with Span Bridge (Build Alternative)

This alternative would widen Pine Avenue to four lanes between Euclid Avenue and Pomona Rincon Road/Fairfield Ranch Road, provide a four-lane roadway between Pomona Rincon Road/Fairfield Ranch Road and SR-71 to match the existing ramps on the east side of SR-71, and elevate Pine Avenue above the 2-percent chance (50-year) pool inundation level in Prado Reservoir (the elevation at which the basin floods during a 50-year storm). The proposed project is located within the City of Chino and Chino Hills and would include the following components:

- Excavation of soil from a borrow site located south of the Pine Avenue alignment located south of Chino Corona Road between Cucamonga Avenue and Hellman Avenue.
- Placement of fill materials along the project alignment to create the proposed embankment.
- Construction of seven 12-foot-wide by 5-foot-high reinforced concrete box (RCB) culverts within Chino Creek western floodplain.
- Construction of a 500-foot-long bridge structure over Chino Creek consisting of four 125-foot spans with three piers/columns spaced evenly over the creek .
- Relocation of existing sewer line under Chino Creek within the existing Pine Avenue right of way.
- Construction of a low-flow bio-swale and retention basin between proposed Pine Avenue and existing Pine Avenue right of way, immediately east of Chino Creek.
- Construction of two double 12-foot-wide by 9-foot-high RCB culverts across the Cypress Channel.
- Construction of a 14-foot-wide by 10-foot-high RCB golf cart undercrossing of Pine Avenue, east of the Cypress Channel and construct golf cart pathway on both sides of undercrossing.
- Raise existing overhead power lines located between SR-71 and Pomona Rincon Road.
- Construction of access driveway for utilities services located between SR-71 and Pomona Rincon Road.
- Construction of access driveway east of Chino Creek.

- Installation of a traffic signal at the intersection of El Prado Road at Pine Avenue.

- Relocation of existing overhead utilities and utility poles along the project alignment.

- Modifications to the existing golf course and cart pathways, along El Prado Road, Pomona Rincon and Pine Avenue.

- Construction of three access driveway points east of Cypress Channel to Euclid Avenue.

- Installation of local area storm drains along Pine Avenue.

- Utilities would be adjusted or relocated, as needed, to accommodate the proposed improvements.

- Best management practices (BMPs) for water quality treatment would be provided as part of the proposed project where feasible.

- Retaining walls would be constructed, as needed, by changes in elevation that cannot be accommodated by re-grading.

- Acquisition of new permanent right of way along the project alignment would be required to accommodate the proposed improvements.

- Signage would be incorporated within the project's limits of disturbance, where necessary.

- Geotechnical borings would be conducted within the project's limits of disturbance, as needed, during construction to confirm compaction and settlement performance.

- Temporary advanced signage during construction would be required, which would involve portable changeable message signs or other temporary signage that would not require any ground disturbance.

Refer to the following pages for the Regional Vicinity and Project Location maps.

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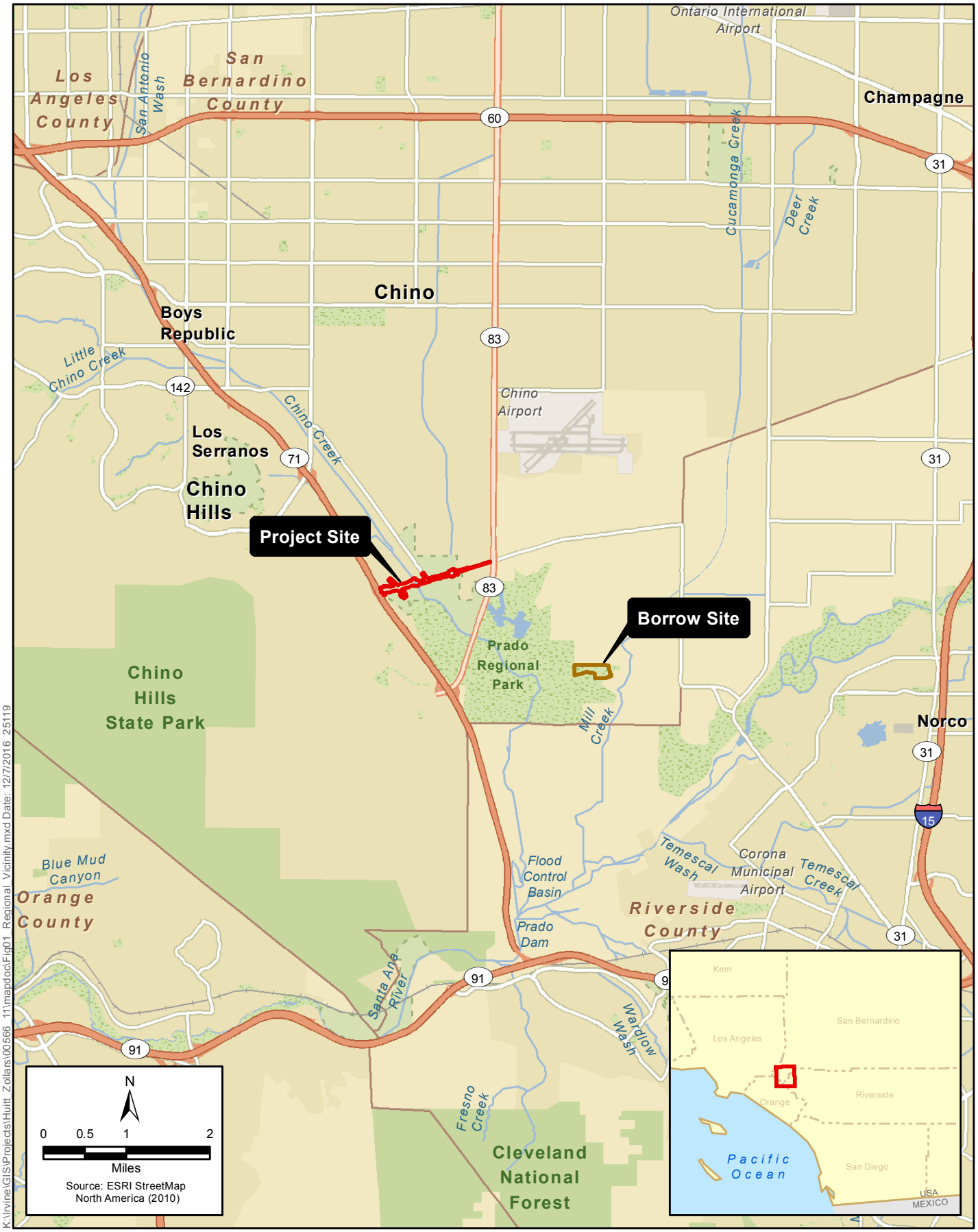

Figure 1
Regional Vicinity
Pine Avenue Extension Project

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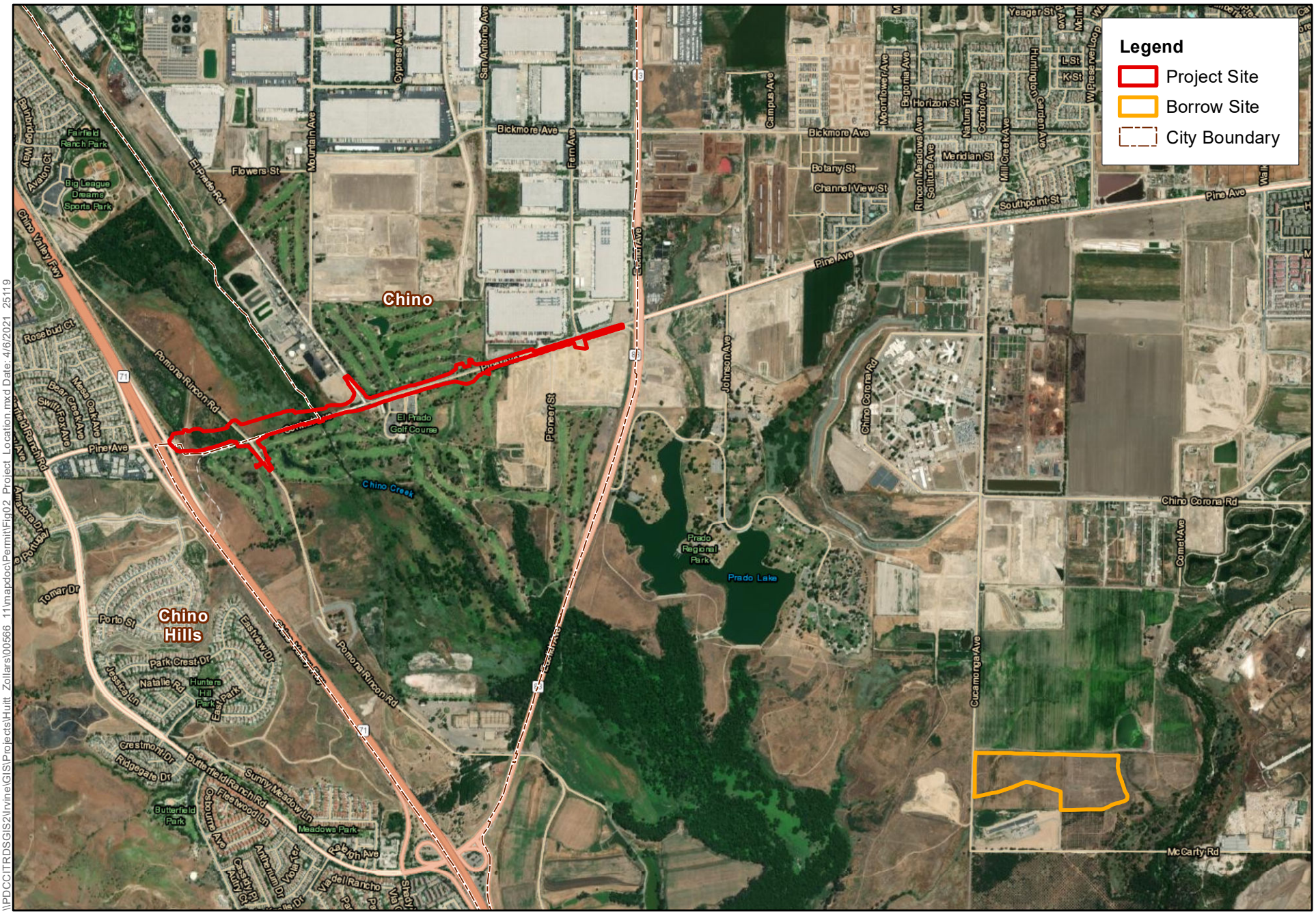

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N

0 1,000 2,000 Feet

1:24,000

Figure 2
Project Location
Pine Avenue Extension Project

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Chapter 3 List and Description of Section 4(f) Properties

As previously mentioned, the resources subject to Section 4(f) consideration include publicly owned lands such as public parks; recreational areas of national, state, or local significance; wildlife and waterfowl refuges; and historic sites of national, state, or local significance.

Resources in the project study area were identified if they were:

- Existing publicly owned recreational and park resources, including local, regional, and state resources;
- Publicly owned wildlife and water fowl refuges and conservation areas;
- Existing public bicycle, pedestrian, and equestrian trails;
- National Register of Historic Places (NRHP) listed or eligible historic sites; or
- NRHP listed or eligible archaeological sites.

Research was conducted to identify publicly owned parks, public schools, recreational areas, wildlife and waterfowl refuges, and land from historic properties within 0.5 mile of the proposed Pine Avenue Extension Project. Based on this research, there are four properties within 0.5 mile of the project that qualify as Section 4(f) resources. There are no wildlife or waterfowl refuges within the 0.5-mile buffer, and as such, there would be no impacts on wildlife or waterfowl refuges.

A summary of the Section 4(f) resources within 0.5 mile of the proposed project is provided in the table below.

Table 3-1. Parks, Schools, and Recreational Facilities Within 0.5 mile of the Project Site

Facility Name	Address	Facilities	Subject to Section 4(f) Protection?	Distance to Project Limits
El Prado Golf Course	6555 Pine Avenue	Golf course, driving range, club house.	Yes	Within 0.5 mile
Prado Regional Park	16700 South Euclid Avenue	Fishing, camping, hiking, biking, trails, and picnic facilities.	Yes	Within 0.5-mile
Vila Borba Park	17001 Amadora Drive	Community park with tot lot, dog park, and restrooms.	Yes	0.5 mile west
P-36-005096/CA-SBR-5096/Cogstone Point	Adjacent to SR-71 overlooking Prado Basin on a low knoll.	Historic Property	Yes	Within APE

Chapter 4 Impacts on Section 4(f) Properties

This section describes the Section 4(f) resources, and the potential use of these resources, within 0.5 mile of the proposed project.

4.1 Resources Evaluated Relative to the Requirements of Section 4(f): *De Minimis* Determination

A summary of potential effects is provided in Table 4-1. An assessment has been made as to whether any permanent or temporary occupation of the property would occur, and whether the proximity of the project would cause any access, visual, air quality, noise, vibration, biological, or water quality effects that would substantially impair the features or attributes that qualify the resource for protection under Section 4(f).

Table 4-1. Section 4(f) Impact Summary for the Build Alternative

Property Name	Direct Use?	Temporary Occupancy?	Constructive Use?	Comments
El Prado Golf Course	Yes	No	No	No temporary use of the public golf course is expected. The project includes the construction of a golf cart undercrossing of Pine Avenue east of the Cypress Channel and construction of golf cart pathways on both sides of the undercrossing. Modifications to the existing golf course and cart pathways would also occur along El Prado Road, Pomona Rincon Road, and Pine Avenue. Given the adjacent location of the project and the golf course, golfers may experience a temporary minor increase in noise, dust, and visual impacts during construction. These impacts are anticipated to be *de minimis* in nature.
Prado Regional Park	No	No	No	No temporary use of the park is expected. Given the distance and location of the project from the park, park users may experience a temporary minor increase in noise, dust, and visual impacts during construction.
Vila Borba Park	No	No	No	No temporary use of the park is expected. Given the distance and location of the project from the park, no impacts are anticipated to park users.
P-36-005096/CA-SBR-5096/ Cogstone Point	No	No	No	Impacts to this historic property would be avoided with implementation of an Environmentally Sensitive Area (ESA) Monitoring and Discovery Plan. Section 106 finding of no adverse effect.

The analysis of potential effects on the Section 4(f) resources described above in Table 4-1 associated with the proposed Pine Avenue Extension Project is provided in the following section.

4.1.1 El Prado Golf Course

Description of the El Prado Golf Course

The El Prado Golf Course is a public recreation golf course with two regulation 18-hole golf courses, practice driving range, and club house with banquet facilities and operated by San Bernardino County. The El Prado Golf Course is adjacent to Prado Regional Park, and located at 6555 Pine Avenue at El Prado Road with the golf course occupying the north and south of Pine Avenue. Currently, golfers cross Pine Avenue at grade, while avoiding traffic, to move from the northern portion of the course to the southern portion.

Project Effects on the El Prado Golf Course

The proposed project would not adversely affect the activities, features, or attributes of the golf course that afford it protection under Section 4(f). The project will not require acquisition, nor will the project result in temporary access impacts. The project would result in construction of a 14-foot-wide by 10-foot high reinforced concrete box (RCB) golf cart undercrossing of Pine Avenue, east of the Cypress Channel and construction of a golf cart pathway on both sides of the undercrossing. Modifications to the existing golf course and cart pathways would also occur along El Prado Road, Pomona Rincon Road, and Pine Avenue. Access to and from the golf course would remain open during construction of the Pine Avenue Extension Project and the golf course as well as its ancillary facilities (driving range, club house, and banquet facilities) would also remain accessible during construction of the project. Therefore, a "use" of the golf course would not occur as a result of the proposed project.

During construction, golf course users could potentially be exposed to construction-related activities such as intermittently increased noise through the project area, visual changes from construction equipment, and potential increases in dust and air quality. However, with incorporation of the minimization measures detailed in Chapter 5 of this report, these temporary impacts would not be substantial, lasting only through the duration of construction, and therefore would not result in a "constructive use" as defined under Section 4(f). Upon completion of the project, the golf cart undercrossing of Pine Avenue would result in a safer crossing for golfers to access the northern and southern portions of the course. This would be an improvement, compared with existing conditions in which golf carts and golfers wait for vehicular traffic to pass in order to cross Pine Avenue and access the northern and southern portions of the golf course.

Applicability of Section 4(f)

The property is a Section 4(f) property, but no "use" or "constructive use" will occur. Therefore, the provisions of Section 4(f) do not apply in this regard.

4.1.2 Prado Regional Park

Description of the Prado Regional Park

Prado Regional Park located at 16700 South Euclid Avenue, approximately 0.5-mile southeast of the Pine Avenue Extension Project, offers fishing, camping, hiking, biking, trails, and picnic facilities, and located

west of Cucamonga Avenue, to the west of the proposed Borrow Site area. Prado Regional Park is operated by San Bernardino County and encompasses approximately 2,000-acres.

Project Effects on Prado Regional Park

The proposed project would not adversely affect the activities, features, or attributes of the park that afford it protection under Section 4(f). The project will not require acquisition or temporary construction easements from Prado Regional Park, nor will the project result in temporary access impacts. Therefore, "use" of this park would not occur as a result of the proposed project.

During construction, park users could potentially be exposed to construction-related activities, such as intermittently increased noise through the project area, visual changes from construction equipment, and potential increases in dust and air quality. However, given the distance of Prado Regional Park to the project area, these temporary impacts would not be substantial, lasting only through the duration of construction, and therefore would not result in a "constructive use" as defined under Section 4(f).

Applicability of Section 4(f)

The property is a Section 4(f) property, but no "use" or "constructive use" will occur. Therefore, the provisions of Section 4(f) do not apply in this regard.

4.1.3 Vila Borba Park

Description of Vila Borba Park

The Vila Borba Park, located at 17001 Amadora Drive, is a City of Chino Hills park facility located approximately 0.5-mile west of the western end of the project site, west of SR-71 and Butterfield Ranch Road. The park facility includes a tot lot, dog park area, and restrooms.

Project Effects on Vila Borba Park

The proposed project would not adversely affect the activities, features, or attributes of the park that afford it protection under Section 4(f). The project will not require acquisition or temporary construction easements from the park, nor will the project result in temporary access impacts on the park. A "use" of this park would not occur as a result of the project, and therefore provisions of Section 4(f) are not triggered in this regard.

During construction, park users may be exposed to construction-related activities, such as intermittently increased noise through the project area, visual changes from construction equipment, and potential increases in dust and air quality. However, given the distance of the park to the project area, and with incorporation of the minimization measures detailed in Chapter 5 of this report, these temporary impacts would not be substantial, lasting only through the duration of construction, and therefore would not result in a "constructive use" as defined under Section 4(f).

Applicability of Section 4(f)

The property is a Section 4(f) property, but no "use" or "constructive use" will occur. Therefore, the provisions of Section 4(f) do not apply in this regard.

4.1.4 P-36-005096/CA-SBR-5096/Cogstone Point

Description of P-36-005096/CA-SBR-5096/Cogstone Point

The P-36-005096/CA-SBR-5096/Cogstone Point is located on a low knoll of the Chino Hills overlooking the Prado Basin. It is adjacent to SR-71 to the west, bound by lower slopes of the ridge to the south, the El Prado Golf Course to the east, and highly vegetated former agricultural land to the north.

Project Effects on P-36-005096/CA-SBR-5096/Cogstone Point

Implementation of the proposed project would result in excavation in previously disturbed fringe portions of P-36-005096/CA-SBR-5096/Cogstone Point. Excavation within the site boundary would include removal of 5-feet of soils in portions of the previously disturbed northwestern fringe of the site. This portion of the site is where erosion and previous disturbances have displaced artifacts from the main cored of the site on the top of the knoll and resulted in artifacts either being only on or immediately below the surface. The combined data from previous archaeological excavations indicate that agricultural activities, including disking and plowing in the 1930s, greatly disturbed the northern fringe portion of the site to a depth of more than 30 centimeters below the ground surface, where culturally sterile soils were reached by previous researchers. The likelihood of intact deposits below the disturbed level is very low. The proposed construction would affect a small portion of the site on the northern fringe of its downslope deposits, an area that has suffered previous disturbances. The significant components that contribute to the site's eligibility are in the core portions of the site on top of the knoll and would be avoided and protected through establishment of an Environmentally Sensitive Area (ESA), ESA fencing, and monitoring (refer to measures CR-3 and CR-4).

Applicability of Section 4(f)

No element of the undertaking presents any adverse effects upon the historic property. There will be No Adverse Effect (with Non-Standard Conditions) upon P-36-005096/CA-SBR-5096/Cogstone Point. As such, the project would result in a de minimis finding for this historic property.

Chapter 5 Avoidance, Minimization, and/or Mitigation Measures

5.1 Measures to Minimize Harm

Measures have been identified during development of the technical studies and the Draft IS/EA to minimize potential temporary project-related impacts on Section 4(f) properties. The following minimization measures would be implemented during construction of the proposed project:

TMP-1 Prior to construction, a Traffic Management Plan (TMP) would be prepared and will be implemented during construction of the project. The TMP would include public information and awareness campaigns, motorist information strategies, and incident management strategies to minimize potential impacts on emergency services and commuters during construction.

VIS-2 Minimize Fugitive Light from Portable Sources Used for Construction. At a minimum, the construction contractor shall minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights will be used. Portable lights will be operated at the lowest allowable wattage and height and will be raised to a height no greater than 20 feet unless otherwise necessary for safety considerations. All lights will be screened and directed downward toward work activities and away from the night sky and roadway users and highway neighbors to the maximum extent possible. The number of nighttime lights used will be minimized to the greatest extent possible.

VIS-3 Replace or Relocate Site Features and Landscaping Affected by the Project. Where appropriate and to the degree possible, landscaping and related appurtenances, such as fencing, removed from private properties because of construction will be relocated, replaced, or restored in place and in kind to minimize visual impacts**.**

NOI-1 Sound control shall conform to the provision in Section 14-8.02, "Noise Control", of Caltrans' 2010 Standard Specifications and Special Provisions. The contractor shall not exceed 86 dBA Lmax at 50 feet from the job site from 9 p.m. to 6 a.m. Internal combustion engines shall be equipped with the manufacturer-recommended muffler. Internal combustion engines shall not be operated on the job site without the appropriate muffler.

NOI-2 For areas of the project located within or adjacent to the City of Chino limits, the City requires a noise monitoring plan to be prepared and submitted prior to starting all construction projects. The noise monitoring plan shall identify monitoring locations and frequency, instrumentation to be used, and appropriate noise control measure that will be incorporated (General Plan Policy P1). Furthermore, the City limits all construction in the vicinity of noise-sensitive land uses, such as residences, hospitals, or senior centers to daylight hours or

7 am to 7 pm. In addition, the following construction noise control measures shall be included as requirements at construction sites to minimize construction noise impacts (General Plan Policy P2):

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

- Ensure that during construction, trucks and equipment are running only when necessary.

- Shield all construction equipment with temporary noise barriers to reduce construction related noise impacts.

- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.

- Utilize "quiet" air compressor and similar equipment, where available.

AQ-1 During project construction, implementation of exhaust and fugitive dust emission control measures, as required by Caltrans' Standard Specifications and local air district rules, would avoid and/or minimize impacts on air quality.

CR-3 An ESA exists in the western portion of the project, adjacent to the south side of the ADI for Pine Avenue. The ESA boundary is set along the edge of construction and surrounds archaeological site P36-005096/CA-SBR-5096 Cogstone Point in its entirety, as shown as shown on the APE Map, in the Project Plans, and in the ESA / AMA Monitoring and Discovery Plan. The ESA is closed and may not be entered.

CR-4 An AMA exists in the western portion of the project, covering the northern portion of archaeological site P36-005096/CA-SBR-5096 Cogstone Point where the ADI for Pine Avenue construction traverses a small, previously disturbed portion of the site. The AMA boundary is set along the southern edge of construction and covers the previously recorded limits of the site on the norther side of the ESA fence line, as shown on the APE Map, in the Project Plans, and in the ESA / AMA Monitoring and Discovery Plan. Construction activity within the limits of the AMA may not commence without the presence of the archaeological monitor.

Appendix B Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION
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SACRAMENTO, CA 94273-0001
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FAX (916) 653-5776
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Making Conservation a California Way of Life.

September 2021

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures "*No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance*."

Caltrans will make every effort to ensure nondiscrimination in all of its services, programs and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin. In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a nondiscriminatory manner.

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page: https://dot.ca.gov/programs/civil-rights/title-vi .

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Civil Rights, at 1823 14th Street, MS-79, Sacramento, CA 95811; PO Box 942874, MS-79, Sacramento, CA 94274-0001; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

Toks Omishakin
Director

Appendix C Environmental Commitments Record

Permit Type	Agency	Date Received	Expiration	Notes
1600	California Department of Fish and Wildlife			
2081	California Department of Fish and Wildlife			
401	Regional Water Quality Control Board			
404	U.S. Army Corps of Engineers			
404(b)(1)	U.S. Army Corps of Engineers			

Date of ECR: December 2022
Date: ISEA: December 2022

ENVIRONMENTAL COMMITMENTS RECORD
Pine Avenue Extension Project

08-SBd-Pine Ave

Project Phase:
☒ PA/ED (*DED/FED*)
☐ PS&E Submittal_____ %
☐ Construction

HPLUL 5188 (018)
Project ID 200207
Generalist:
ECL: TBD
Resident Engineer: TBD

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CULTURAL RESOURCES										
CR-1: If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.	p.2-31	Environmental Document (ISEA)	District Cultural Studies/ District Design/ Resident Engineer/ Contractor	Design, Construction						
CR-2: If human remains are discovered, State 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 shall be contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which will then notify the most likely descendent. At that time, the person who	p.2-31	ISEA	District Cultural Studies/ District Design/ Resident Engineer/ Contractor	Design, Construction						

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discovered the remains will contact Gary Jones, Principal Investigator, Prehistoric Archaeology, so that he can 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.										
CR-3 An ESA exists in the western portion of the project, adjacent to the south side of the ADI for Pine Avenue. The ESA boundary is set along the edge of construction and surrounds archaeological site P36-005096/CA-SBR-5096 Cogstone Point in its entirety, as shown as shown on the APE Map, in the Project Plans, and in the ESA / AMA Monitoring and Discovery Plan. The ESA is closed and may not be entered.										
CR-4 An AMA exists in the western portion of the project, covering the northern portion of archaeological site P36-005096/CA-SBR-5096 Cogstone Point where the ADI for Pine Avenue construction traverses a small, previously disturbed portion of the site. The AMA boundary is set along the southern edge of construction and covers the previously recorded limits of the site on the norther side of the ESA fence line, as shown on the APE Map, in the Project Plans, and in the ESA / AMA Monitoring and Discovery Plan. Construction activity within the limits of the AMA may not commence without the presence of the archaeological monitor.										

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TRAFFIC AND TRANSPORTATION/BICYCLE AND PEDESTRIAN FACILITIES										
TMP-1 Prior to construction, a Traffic Management Plan (TMP) would be prepared and will be implemented during construction of the project. The TMP would include public information and awareness campaigns, motorist information strategies, and incident management strategies to minimize potential impacts on emergency services and commuters during construction.	p.2-14	ISEA	District Design / District Traffic Management / District Environmental Planning / Resident Engineer / Contractor	Final Design, Construction						
VISUAL/AESTHETICS										
VIS-1 Avoid and Protect Trees in Staging Areas during Construction. Trees that are located within staging areas will be avoided and protected during construction. Tree protection zones for all trees will be the dripline radius plus one foot. The fencing will remain in place throughout the duration of time that the staging area is used. Tree protection fencing must be a minimum six-foot-tall orange safety fencing or substitute fencing. The location of the fencing will be indicated on the project design engineer's grading plans. The fencing will be erected before demolition, grading, or any other construction activity begins. Fencing should not be placed on private property without	p.2-19	ISEA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor	Final Design, Construction						

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written authorization from the property owner. The following activities are prohibited throughout the course of the project within the tree protection zone. • Storage or parking of vehicles, building materials, refuse, or excavated soil material. • Use, access, or parking of heavy equipment, such as backhoes, tractors, and other heavy vehicles and equipment. • Dumping of poisonous chemicals or materials, with known or unknown properties that potentially could be deleterious to tree health, such as paint, petroleum products, concrete or stucco mix, or dirty water. • The use of tree trunks for winch support, anchorage, power pole, sign post, or any other function. • Drainage changes, grade changes, soil disturbance.										
VIS-2 Minimize Fugitive Light from Portable Sources Used for Construction. At a minimum, the construction contractor shall minimize project-related light and glare to the maximum extent feasible, given safety considerations. Color-corrected halide lights will be used. Portable lights will be operated at the lowest	p.2-19	ISEA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor							

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allowable wattage and height and will be raised to a height no greater than 20 feet unless otherwise necessary for safety considerations. All lights will be screened and directed downward toward work activities and away from the night sky and roadway users and highway neighbors to the maximum extent possible. The number of nighttime lights used will be minimized to the greatest extent possible.										
VIS-3 Replace or Relocate Site Features and Landscaping Affected by the Project. Where appropriate and to the degree possible, landscaping and related appurtenances, such as fencing, removed from private properties because of construction will be relocated, replaced, or restored in place and in kind to minimize visual impacts.	p.2-19	ISEA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor							
VIS-4 Use Native Grass and Wildflower Species in Erosion Control Grassland Seed Mix. The project proponent will require construction contractors to incorporate regionally appropriate drought tolerant native grass and wildflower seed in standard seed mixes for erosion control measures that will be applied to all exposed slopes. Under no circumstances will any invasive grass or wildflower plant species be used as a component in any erosion control measures.	p.2-19	ISEA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor							

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Wildflowers will provide seasonal visual interest to areas where trees and shrubs are removed and grasslands are disturbed. Species will be chosen that are indigenous to the area and for their appropriateness to the surrounding habitat. For example, upland grass and wildflower species will be chosen for drier, upland areas, and wetter species will be chosen for areas that will receive more moisture. Any wildflowers not appropriate to the surrounding habitat should not be included in the seed mix. The final seed mix shall be approved by Caltrans biologist and landscape architect.										
VIS-5 Implement Slope Landscaping. Landscaping on applicable areas of the constructed earth slopes, including median and parkway landscaping where applicable, will improve the visual quality of the roadway corridor by enhancing corridor aesthetics and reducing the apparent scale of the new embankment. During final design, and prior to approval of the roadway design, the Caltrans project landscape architect shall review project designs and ensure that the following elements are implemented into the project landscaping plan, as well as meet the City of Chino landscape requirement for parkways and medians, if applicable:	p.2-20	ISEA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor							

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- One hundred percent of the species composition will reflect native and indigenous species to the project area and California. Native plant species can be used to create attractive spaces, high in aesthetic quality, are drought-tolerant, and will attract more wildlife than non-native landscape plant palettes. Use of native species, promotes a visual character of California that is being lost through development and reliance on non-native ornamental plant species. - The species list will include both evergreen and deciduous trees, shrubs, and an herbaceous understory of varying heights, as well as both evergreen and deciduous types. Plant variety will increase the effectiveness of the roadside planting areas by providing multiple layers, seasonality, diverse habitat, and reduced susceptibility to disease. Evergreen groundcovers or low-growing plants. should be used in areas where taller vegetation would potentially cause driving hazards by obscuring site distances. - Under no circumstances will any invasive plant species be used at any location. - Vegetation shall be planted within the first six months following project completion										

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VIS-6 Apply Minimum Lighting Standards. All artificial outdoor lighting and overhead street lighting will be limited to safety and security requirements and the minimum required for driver safety. Lighting will be designed using Illuminating Engineering Society's design guidelines and in compliance with IDA–approved fixtures. All lighting will be designed to have minimum impact on the surrounding environment and will use downcast, cut-off type fixtures that are shielded and direct the light only toward objects requiring illumination. Therefore, lights will be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, or backscatter into the nighttime sky. The lowest allowable wattage will be used for all lighted areas, while minimizing the number of nighttime lights needed. Light fixtures will have non-glare finishes that will not cause reflective daytime glare. Lighting will be designed for energy efficiency, with daylight sensors or timers with an on/off program. Lights will provide good color rendering with natural light qualities, with the minimum intensity feasible for security, safety, and personnel access. Lighting, including light color rendering and fixture types, will be designed to be aesthetically pleasing. LED	p.2-20	ISEA	District Design / District Landscape Architecture / District Environmental Planning / Resident Engineer / Contractor							

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lighting will avoid the use of BRWL lamps and use a correlated color temperature that is no higher than 3,000 Kelvin, consistent with the IDA's Fixture Seal of Approval Program (International Dark-Sky Association 2010a, 2010b, 2015). In addition, LED lights will use shielding to ensure that nuisance glare and light spill does not affect sensitive residential viewers. Technologies to reduce light pollution evolve over time. Design measures that are currently available may help but may not be the most effective means of controlling light pollution once the project is designed. Therefore, all design measures used to reduce light pollution will use the technologies available at the time of project design to allow for the highest potential reduction in light pollution.										
WATER QUALITY AND STORM RUNOFF										
WQ-1: The project will comply with the provisions of the NPDES Construction General Permit, Order No. 2009-0009-DWQ, NPDES No.CAS000002, and any subsequent permits in effect at the time of construction. The project will comply with the Construction General Permit by preparing and implementing a SWPPP to address issues related to construction activities, equipment,	p.2-46	ISEA	District Design / District Storm Water / Resident Engineer / Contractor	Final Design, Construction	SSP or NSSP					

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and materials that have the potential to affect water quality. The SWPPP will identify the sources of pollutants that may affect the quality of stormwater and include BMPs to control the pollutants, such as sediment control measures, catch basin inlet protection, construction materials management, and non-stormwater BMPs. The BMPs would include, but are not limited to, temporary sediment control, temporary soil stabilization, waste management scheduling, materials handling, and other non-stormwater BMPs.										
WQ-2 Comply with the City of Chino MS4 Permit for the portion of the Santa Ana River watershed within San Bernardino County (Order No. R8-2010-0036, NPDES Permit No. CAS618036) during final design of the project. A project-specific WQMP will be prepared, reviewed, and approved by the City of Chino, and City of Chino Hills for areas within its jurisdiction, that will identify the approved low impact development (LID) preventative measures and post-construction treatment controls that will be implemented to the maximum extent practicable, consistent with the requirements of the MS4 Permit and Local Implementation Plan for the project.	p.2-46	ISEA	District Design / District Storm Water / Resident Engineer / Contractor	Final Design, Construction						
PALEONTOLOGY										

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PALEO-1 Prior to the start of earthwork, a qualified Project Paleontologist should be retained to oversee and implement the paleontological mitigation program. The Project Paleontologist shall have a graduate degree in paleontology or geo-biology, and proven experience in supervising paleontological assessments and paleontological mitigation programs.	p.2-56	ISEA	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design, Pre-Construction						
PALEO-2 The Project Paleontologist should attend the pre-construction meeting to consult with the grading and excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. If necessary, the Project Paleontologist may conduct worker environmental awareness training.	p.2-56	ISEA	District Design / District Paleontological Studies / Resident Engineer / Contractor	Pre-Construction						
PALEO-3 A paleontological monitor, under the guidance of the Project Paleontologist, should be on-site to monitor mass grading and remedial grading operations that encounter Pleistocene older alluvial fan deposits. Full-time monitoring is recommended for areas where Pleistocene older alluvial fan deposits are mapped at the surface (e.g., eastern half of the Pine Avenue Extension right of way and the entire borrow site). In addition, excavations that extend greater than 5 feet below existing grade in areas where	p.2-56	ISEA	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design, Construction						

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Quaternary younger alluvial and wash deposits are mapped at the surface should be monitored on a part-time basis until it is confirmed that no Pleistocene older alluvial fan deposits are being impacted. The monitor should take appropriate field notes to document stratigraphical and paleontological data. The Project Paleontologist, in consultation with appropriate agencies, has the authority to reduce paleontological monitoring (e.g., part-time monitoring, spot-checking) based on results of the mitigation program to date, and current and anticipated conditions in the field.										
PALEO-4 If fossils are discovered, they should be salvaged by the paleontological monitor and/or the Project Paleontologist. In most cases this fossil salvage can be completed in a short period of time (e.g., minutes to hours). However, in rare cases, a large fossil specimen or a bone bed may be discovered, and would require an extended salvage period. In these instances the paleontological monitor should be allowed to temporarily direct, divert, or halt excavations to allow the timely recovery of fossil remains in a timely manner.	p.2-56	ISEA	District Design / District Paleontological Studies / Resident Engineer / Contractor	Construction						
PALEO-5 In the even that fossils are discovered during a period when	p.2-56	ISEA	District Design / District	Construction						

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paleontological monitor is not on site (an inadvertent discovery), earthwork within the vicinity of the discovery site shall temporarily halt, and the Project Paleontologist contacted to evaluate the significance of the discovery. If the inadvertent discovery is determined to be significant, the fossils shall be recovered, as outline in measure PALEO-4.			Paleontological Studies / Resident Engineer / Contractor							
PALEO-6 Fossil remains collected during monitoring and salvage should be cleaned, repaired, sorted, identified, and cataloged as part of the mitigation program. Fossil preparation may also include screen-washing for microfossils or other laboratory analyses (e.g., radiocarbon dating), if applicable. Fossil preparation and curation activities may be conducted at the laboratory of the contracted Project Paleontologist (if so equipped), at an appropriate outside agency, and/or at the designated fossil repository, and shall follow the standard of the designated repository.	p.2-57	ISEA	District Design / District Paleontological Studies / Resident Engineer / Contractor	Construction						
PALEO-7 Prepared fossils, along with copies of all pertinent field notes, photos, and maps, should be housed in a regional scientific repository with permanent paleontological collections (e.g., San Bernardino County Museum, San Diego Natural History Museum, Western Science Center). Curation of the fossils should be accompanied by financial	p.2-57	ISEA	District Design / District Paleontological Studies / Resident Engineer / Contractor	Construction						

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support for initial specimen storage (e.g., purchase of storage cabinets).										
PALEO-8 A final summary report should be completed by the Project Paleontologist that outlines the results of the mitigation program. This report should include discussions of the methods used, stratigraphic section(s) exposed, fossils collected, and significance of recovered fossils. This report shall be submitted to appropriate agencies (e.g., Caltrans, City of Chino), as well as to the designated repository (if fossils are recovered).	p.2-57	ISEA	District Design / District Paleontological Studies / Resident Engineer / Contractor	Construction						
NOISE AND VIBRATION										
NOI-1 Sound control shall conform to the provision in Section 14-8.02, "Noise Control", of Caltrans' 2010 Standard Specifications and Special Provisions. The contractor shall not exceed 86 dBA Lmax at 50 feet from the job site from 9 p.m. to 6 a.m. Internal combustion engines shall be equipped with the manufacturer-recommended muffler. Internal combustion engines shall not be operated on the job site without the appropriate muffler.	p.2-102	ISEA	District Design / District Environmental Engineering / Resident Engineer / Contractor	Construction	SSP or NSSP					
NOI-2 For areas of the project located within or adjacent to the City of Chino limits, the City requires a noise monitoring plan to be	p.2-102	ISEA	District Design / District Environmental Engineering /	Final Design, Pre-						

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prepared and submitted prior to starting all construction projects . The noise monitoring plan shall identify monitoring locations and frequency, instrumentation to be used, and appropriate noise control measure that will be incorporated (General Plan Policy P1). Furthermore, the City limits all construction in the vicinity of noise-sensitive land uses, such as residences, hospitals, or senior centers to daylight hours or 7 am to 7 pm. In addition, the following construction noise control measures shall be included as requirements at construction sites to minimize construction noise impacts (General Plan Policy P2): - Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. - Ensure that during construction, trucks and equipment are running only when necessary. - Shield all construction equipment with temporary noise barriers to reduce construction related noise impacts. - Locate stationary noise-generating equipment as far as possible from sensitive			Resident Engineer / Contractor	Construction, Construction						

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receptors when sensitive receptors adjoin or are near a construction area. - Utilize "quiet" air compressor and similar equipment, where available.										
NOI-3 For the areas of the project located within or adjacent to the City of Chino Hills, compliance with the Chino Hills Noise Ordinance will be required. No person shall construct, repair, remodel, demolish, or grade any real property or structures thereon at any time other than between the hours of 7 am and 7 pm on weekdays, and between 8 am and 6 pm on Saturdays, excluding federal holidays (City of Chino Hills Noise Control Ordinance 8.08.020).	p.2-102	ISEA	District Design / District Environmental Engineering / Resident Engineer / Contractor	Construction						
AIR QUALITY										
AQ-1 During project construction, implementation of exhaust and fugitive dust emission control measures, as required by Caltrans' Standard Specifications and local air district rules, would avoid and/or minimize impacts on air quality.	p.2-85	ISEA	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design, Construction	SSP or NSSP					
BIOLOGICAL RESOURCES										

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BIO-1: Construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the PIA and designated staging areas or routes of travel. The construction area(s) will be the minimal area necessary to complete the proposed project and will be specified in the construction plans. Highly visible barriers (such as orange construction fencing) will be installed around all riparian and sensitive habitats adjacent to the PIA, as directed by the lead biologist, to designate Environmentally Sensitive Areas (ESAs) prior to the initiation of construction activities. The ESA will be maintained until the completion of all construction activities. Installation of the ESA fencing shall follow all requirements stated in Conservation Measure 8 (CM-8) of the Biological Opinion.	p.2-110	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction	SSP or NSSP					
BIO-2: A biological monitor will be present during construction activities for the duration of clearing and grubbing for the proposed project to ensure that practicable measures are being employed and avoid incidental disturbance of habitat and species of concern outside the project footprint. ESA fencing (BIO-1) will be monitored and maintained at a frequency necessary to ensure its effectiveness. Ongoing monitoring and reporting will occur for the duration of the	p.2-110	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction						

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construction activity to ensure implementation of best management practices (BMPs).										
BIO-3: All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other toxic substances will occur in developed or designated non-sensitive upland habitat areas. The designated upland areas will be located to prevent runoff from entering any drainages, wetlands, or waterways.	p.2-110	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design, Construction						
BIO-4: Fire suppression equipment, including extinguishers, shovels, and water tankers, will be available onsite whenever construction occurs during the fire season (as determined by the San Bernardino County fire departments). Activities that may produce sparks, including welding or grinding, will use protective gear to reduce fire risks, such as shields and protective mats.	p.2-110	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						
BIO-5: Dust control measures will be implemented during construction to reduce excessive dust emissions. Dust control measures may include wetting work areas regularly, the use of soil binders on dirt roads, and wetting or covering stockpiles.	p.2-110	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						
BIO-6: During construction, areas within the PIA will be kept free of exotic weeds throughout the duration of the project. Exotic	p.2-111	ISEA	District Design / District Biological	Construction						

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plant species will be properly handled to prevent sprouting or regrowth onsite. Construction equipment will be cleaned of mud or other debris prior to mobilizing and before leaving the site to reduce the potential spread of invasive plants and/or seeds. No cleaning of construction equipment will occur within 200-feet of ESA fencing or waterways.			Studies / Resident Engineer / Contractor							
BIO-7: A storm water and pollution prevention plan (SWPPP) and a soil erosion and sedimentation plan will be developed prior to construction to minimize erosion and identify specific pollution prevention measures that will eliminate or control potential point and nonpoint pollution sources onsite during and following the project construction phase. The SWPPP will identify specific best management practices (BMPs) to be implemented during project construction to avoid causing or contributing to any water quality standard exceedances. In addition, the SWPPP will contain provisions for changes to the plan such as alternative mechanisms, if necessary, during project design and/or construction to achieve the stated goals and performance standards.	p.2-111	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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BIO-8: Removal of riparian vegetation, including tree trimming, will be avoided from March 1 to September 15, to ensure no impacts on least Bell's vireo. If full avoidance is not feasible, BIO-9 will be implemented.	p.2-111	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						
BIO-9: A Nesting Bird Management Plan (NBMP) will be prepared to provide a comprehensive approach to addressing nesting birds prior to the commencement of construction phases. It will include, at a minimum, the following items: a) Project biologist and monitoring biologist qualifications. b) Methods for preconstruction surveys for nesting birds protected under the MBTA and California Fish and Game Code, which will be performed prior to the start of all project phases during the bird breeding season. Preconstruction nesting bird survey requirements may be superseded by the Streambed Alteration Agreement conditions. c) Methods for addressing nesting birds, raptors, and colonial nesting birds (e.g., swallows), including avoidance buffers; avoidance measures to reduce disturbances to active nests; and deterrent methods.	p.2-111	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction						

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d) Reporting requirements. This NBMP will be coordinated with and submitted for review by CDFW.										
BIO-10: The permanent removal of riparian vegetation suitable for least Bell's vireo will be replaced at minimum 3:1, with compensation occurring as creation, enhancement, and/or restoration. The compensation can occur through a combination one or more of the following: on-site enhancement, re-establishment, and/or creation; fee payment to other approved mitigation providers; off-site permittee-responsible mitigation; and/or other off-site mitigation within the Prado Basin or Santa Ana watershed. For all riparian habitat that would be temporarily removed during construction, restoration would occur on- or off-site at a 2:1 ratio through enhancement, re-establishment, and/or creation. The compensation for occupied least Bell's vireo habitat should be coordinated with aquatic permitting mitigation requirements (see to BIO-14).	p.2-111	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						
BIO-11 For any areas that will be restored on-site, a Habitat Mitigation and Monitoring Plan (HMMP) will be prepared in accordance with requirements of the USACE, RWQCB, and CDFW. The HMMP will include all of the	p.2-112	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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required components outlined by these agencies, including but not limited to, a project description, goal of the mitigation, mitigation site, implementation plan, monitoring plan, completion of mitigation/success criteria, and contingency measures. The HMMP will address the on-site restoration of temporary impact areas and compensatory mitigation at offsite areas to mitigate for temporal losses and permanent impacts. The HMMP will include a five-year maintenance and monitoring period to ensure that restoration performance standards and final success criteria measures are met, as described in the HMMP and Conservation Measures included in the Biological Opinion (e.g., container plant survival will be 80 percent of the initial plantings for the first 5 years, evidence of natural recruitment, no artificial watering for at least two years).										
BIO-12 Prior to the start of construction, a certified arborist will measure the diameter at breast height (dbh) of the two oak trees within the coast live oak woodland stand south of Pine Avenue. A report will be prepared by the arborist to document the health and viability of the tree and provide recommendations. If the dbh of oak trees is greater than 8 inches, then compensation will apply and oaks will be replaced at ratios as specified in the City of	p.2-112	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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Chino Zoning Ordinance Landscape Design Standards (Municipal Code § 20.19.040): **Trunk Diameter of Tree to be Removed (DBH)** / **Number of Replacement Trees** / **Minimum Size of Replacement Tree*** 8-10” 2 24” box 10”-14” 2 36” box 15”-29” 3 48” box >30” 2 60” box Source: Natural Environment Study (February 2020) Note: All replacement trees will be coast live oak species. Replacement of oak trees will occur on-site, however if this is not feasible, an offsite location may be used with approval from the Director of Community Development for the City of Chino. The oak trees must meet success criteria that will be integrated into the HMMP (BIO-11). If oak trees removed from the Pine Avenue project site are less than 8-inches dbh, no replacement is required.										

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BIO-13: Hydrologic connectivity within Chino Creek will be maintained throughout the duration of construction and no construction work is expected to occur within flowing portions of Chino Creek. Vegetation, debris, mud, silt, or other pollutants from construction activities will not be placed within the creek.	p.2-119	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						
BIO-14: Compensation for permanent impacts on federal and state jurisdictional waters would occur through a combination of one of more of the following: onsite enhancement, re-establishment, and/or creation; payment into an in-lieu fee program (such as the RCRCD in-lieu fee program) or other approved mitigation provider; permittee responsible mitigation; and/or other off-site restoration/mitigation within the Prado Basin or Santa Ana watershed. Compensation for the permanent loss of USACE non-wetlands and state streambeds would occur at a minimum 2:1 ratio and for USACE wetlands and CDFW riparian habitat will occur at minimum 3:1 ratio. Temporary impacts on jurisdictional waters, wetlands, and state streambeds would occur on-site at 1:1. The mitigation for CDFW riparian habitat will take into consideration the mitigation proposed for impacts on least Bell's vireo (2:1 ratio) (BIO-	p.2-120	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Design						

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10) so that this habitat resource is mitigated once.										
BIO-15 All heavy equipment will install and maintain mufflers or other noise-reducing features will be installed when working at Chino Creek and riparian vegetated areas west of Fairfield Ranch Road during the nesting season. A noise wall or noise barrier (e.g., hay bales, sound curtain, or other method) will be placed during pile driving activities at Chino Creek Bridge. If construction noise is negatively affecting nesting birds or other wildlife, as determined by the biological monitor, work shall cease (unless authorized by the wildlife agencies) until adequate sound barriers can be constructed to reduce noise levels at the edge of the riparian corridor. All noise barriers will need to be constructed within the PIA.	p.2-145	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						
BIO-16 Areas within Chino Creek and areas east and west of the bridge that contain noise receptors exceeding 60dB and which provide suitable and/or occupied habitat for LBV will be designed with sound barriers or structures that would reduce traffic roadway noise below 60 dB. These structures would also reduce spillover lighting from vehicle headlights into adjacent habitat during project operation.	p.2-145	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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BIO-17 Aerial species diversion structures will be implemented on the Chino Creek Bridge to prevent wildlife-vehicle collisions with aerial species such as least Bell's vireo and bats. Diversion structures may include walls or fencing designed to divert aerial species over the bridge and prevent wildlife-vehicle collisions.	p.2-145	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						
BIO-18 No more than 14 days prior to construction, a bat specialist will conduct a bat habitat assessment to locate any potential bat roosts or maternity colonies within 952 feet of pile driving locations. Particular areas of focus would include bridges over Chino Creek south of the Pine Avenue project site and riparian habitat. If any potential roosts or maternity colonies are found, the bat specialist will conduct bat surveys (i.e., emergence and acoustic surveys) to positively identify species and quantify occupancy. If sensitive bat species are identified in the PIA, measure BIO-19 and BIO-22 will also be implemented.	p.2-145	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						
BIO-19 To avoid and minimize effects of construction equipment and machinery (not including pile-driving, blasting, shears or other intense noise generating activities), a minimum buffer will be maintained around any known bat roost sites as determined by the bat specialist. If these buffers cannot be	p.2-146	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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maintained, seasonal work restrictions or bat eviction and exclusion may be required and shall be developed with a bat specialist and coordinated with CDFW at prior to construction. The bat specialist shall also identify any additional measures needed to avoid and minimize impacts should a roost/roosts be identified.										
BIO-20 All construction night lighting will be pointed towards the immediate work area or roadway and will not project or penetrate into adjacent habitat or open space and will not be located adjacent to any bridges or culverts facilitating wildlife movement. Permanent light fixtures over Chino Creek Bridge and open space areas will be designed so that the lumens and light spectrum are wildlife friendly, and are shielded to prevent light pollution into adjacent habitat and open space areas.	p.2-146	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						
BIO-21 On-site restoration or creation of riparian habitat described in BIO-10 will incorporate habitat features that can be used by numerous wildlife species, including tree snags and crevices.	p.2-146	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Design, Pre-Construction						
BIO-22 If bats are documented within the PIA, the bat specialist will coordinate with the Project Development Team and CDFW on developing a compensatory mitigation plan	p.2-146	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						

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which may include eviction and exclusion of bats, provision of alternative bat roosting habitat, and/or provision of bat habitat in the new proposed bridge structure.										
BIO-24: The Chino Creek Bridge shall be designed to accommodate wildlife movement through the project area and will include the following: The proposed Chino Creek Bridge height shall be at a minimum of 15 feet above the creek invert (between the low-flow channel and bottom of bridge deck) to accommodate large mammal movement and minimally maintain vegetative canopy connectivity and line-of-sight in order to facilitate connectivity for a wide variety of species. The bridge undercrossing at Chino Creek will contain at least one dry passage, such as a dry shelf, ledge, path, for species movement during average flood events. Project design of dry passages should reflect guidelines by Federal Highways (Clevenger and Huijser 2011) or Caltrans (Meese et al. 2009). The bridge undercrossing at Chino Creek will contain native earthen bottom and shall not contain obstructions to wildlife movement. Structures such as energy dissipaters and rip-	p.2-112	ISEA	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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rap, if used, shall be implemented in a manner that does not obstruct movement of wildlife through the structure. For example, areas used for dry passage should not contain rip-rap. Dry pathways should be accessible leading up to and across the entire undercrossing without obstruction by rip-rap or other materials.										
CM-1 Caltrans will offset permanent impacts to 6.60 acres and temporary impacts to 2.38 acres of habitat occupied by the vireo through the restoration and conservation of 24.56 acres of riparian habitat occupied by the vireo in the vicinity of the project site, and within or directly adjacent to designated critical habitat, as reviewed and approved by the Palm Springs Fish and Wildlife Office (PSFWO). a. Documentation that the habitat has been conserved (if a bank or in lieu fee program is used) will be provided to the PSFWO prior to the commencement of vegetation removal and project construction; or b. Caltrans will submit a habitat restoration plan for all restoration, including temporary impact areas, to the PSFWO for review and approval at least 30 days prior to initiating	p.2-154	ISEA, Biological Opinion (BO)	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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project impacts. The plan will include the following information and conditions: i. All habitat restoration sites will be prepared for planting in a way that mimics natural habitat to the maximum extent practicable. All plantings will be installed in away that mimics natural plant distribution and not in rows. ii. Planting palettes (plant species, size, and number/acre) and seed mixes (plant species and pounds/acres) will be limited to locally native species (e.g., species found in or near the biological study area for the project). The source location of all plant material and seed will be provided to the PSFWO prior to use in restoration activities. iii. Container plant survival will be 80 percent of the initial plantings for the first 5 years. At the first and second anniversary of plant installation, all dead plants will be replaced unless their function has been replaced by plants from seed or natural recruitment. iv. A final implementation schedule will indicate when all impacts, as well as restoration planting and irrigation will begin and end.										

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v. The final restoration plan will include 5 years of success criteria for restoration areas including: percent cover, evidence of natural recruitment of multiple species for all habitat types, 0 percent coverage for all woody California Invasive Plant Council's (Cal-IPCs) "Invasive Plant Inventory" species (e.g., trees and shrubs), and no more than 10 percent coverage for other exotic/weed species. vi. A minimum 5 years of maintenance and monitoring of restoration areas, unless success criteria are met earlier and all artificial water suppled have been off for at least 2 years. vii. A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points will be used for qualitative monitoring and stratified-random sampling will be used for all quantitative monitoring. viii. Contingency measures in the event of restoration failure. ix. Annual mitigation maintenance and monitoring reports will be submitted to the PSFWO no later than December 1 of each year.										

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x. If maintenance of a riparian restoration area is necessary between March 15 and August 31, a qualified biologist will survey for vireos within the restoration area, access paths to it, and other areas susceptible to disturbances by restoration site maintenance. Surveys will consist of three visits separated by 2 weeks starting April 10 of each maintenance/monitoring year. Restoration work will be allowed to continue on the site during the survey period. However, if vireos are found during any of the visits, the Caltrans Project Biologist will notify and coordinate with the PSFWO to identify measures to avoid and/or minimize effects to the vireo (e.g., nests and an appropriate buffer will be flagged by the biologist and avoided by the maintenance work).										
CM-2 Unless credits are purchased from a bank or in lieu fee program (1.a. above), a perpetual biological conservation easement or other legal conservation mechanism acceptable to the PSFWO will be recorded over the 24.56 acre area restored and conserved by the project. The conservation mechanism will specify that no easements or activities (e.g., fuel modification zones, public trails, drainage facilities, walls, maintenance access roads, utility easements) that will result in soil disturbance and/or native vegetation	p.2-156	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction						

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removal will be allowed within the biological conservation easement areas. A draft conservation mechanism will be provided to the PSFWO for review and approval. Caltrans will also submit the final conservation mechanism to the PSFWO. If Caltrans is not able to place the conservation easement or other conservation mechanism prior to initiating project impacts, annual reports will be provided on its status until the conservation mechanism is recorded over the property, which will occur within one year of the issuance of this biological opinion, unless, a written extension is requested by Caltrans showing good faith efforts to achieve the recordation and the extension request is granted by the PSFWO.										
CM-3 Unless credits are purchased from a bank or in lieu fee program (1.a. above), Caltrans will prepare and implement a perpetual management, maintenance, and monitoring plan for the 24.56-acre area restored and conserved by the project. Caltrans will also establish non-wasting endowments for amounts approved by the PSFWO based on Property Analysis Records (PAR)(Center for Natural Lands Management © 1998) or similar cost estimation methods, to secure the ongoing funding for the perpetual management, maintenance and monitoring of	p.2-156	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction						

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the property. Caltrans will submit a draft long-term management plan for the property to the PSFWO for review and approval. The long-term management plan will include, but not be limited to, the following: 1) the PAR or other cost estimation results for the non-wasting endowment; 2) proposed land manager's name, qualifications, business address, and contact information; 3) method of protecting the resources in perpetuity (e.g., conservation easement), monitoring schedule, measures to prevent human and exotic species encroachment, funding mechanism, and contingency measures should problems occur. Caltrans will submit the final long-term management plant to the PSFWO. If the long-term management plan is not prepared prior to initiating project impacts, annual reports will be provided on its status until the final management plan has been provided and the endowment has been established.										
CM-4 A biologist (Project Biologist) approved by the PSFWO will be on site: (a) during all vegetation clearing/grubbing; and (b) weekly during project construction within 500 feet of vireo habitat to monitor compliance will all conservation measures. Caltrans will submit the biologist's name, contact information, and work schedule on the project to the PSFWO at least 15 working days prior to initiating project	p.2-156	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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impacts. The Project Biologist will be provided with a copy of this consultation. The Project Biologist will be available during pre-construction and construction phases to address protection of sensitive biological resources, monitor ongoing work, and maintain communications with construction personnel to facilitate the appropriate and lawful management of issues relating to biological resources. The Project Biologist will report any non-compliance issue to the Resident Engineer and Caltrans Project Biologist such that work can be halted if necessary, and the issue can be discussed with the PSFWO to ensure the proper implementation of species and habitat protection measures. The Caltrans Project Biologist will report all non-compliance issues to the PSFWO within 1 business day of notification.										
CM-5 The Project Biologist will submit monthly email reports (including photographs of impact areas) to the Caltrans Project Biologist during clearing of, and construction within, 500 feet of vireo habitat. The monthly reports will document that authorized impacts were not exceeded and general compliance with all conditions. The reports will also outline the location of construction activities, the type of construction that occurred, and equipment	p.2-157	ISEA, BO	District Design / District Biological Studies / Resident Engineer	Construction						

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used. These reports will specify numbers and locations, and sex of listed species (if observed), their observed behavior (especially in relation to construction activities), and remedial measures employed to avoid and minimize impacts to these species. Raw field notes should be available upon request by the PSFWO. The Caltrans Project Biologist will review reports and forward them to the PSFWO.										
CM-6 The Project Biologist will submit a final report to the Caltrans Project Biologist within 120 days of project completion including photographs of impact areas and adjacent habitat, documentation that authorized impacts were not exceeded, and documentation that general compliance with all conservation measures was achieved. The report will specify numbers and locations of listed species (if observed); observed listed species behavior (especially in relation to project activities); and remedial measures employed to avoid and minimize impacts to listed species and critical habitat. Raw field notes should be available upon request by the PSFWO. The Caltrans Project Biologist will review the report and forward it to the PSFWO within 15 days of receipt.	p.2-157	ISEA, BO	District Design / District Biological Studies / Resident Engineer	Construction, Post Construction						

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CM-7 The clearing and grubbing of native habitats for the project will occur between September 1 and March 14, to avoid the vireo breeding season. Vegetation clearing may commence earlier in the fall if the Project Biologist demonstrates to the satisfaction of the PSFWO that all breeding within adjacent habitat is complete.	p.2-157	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						
CM-8 All native or sensitive habitats outside and adjacent to the construction limits will be designated as Environmentally Sensitive Areas (ESAs) on project maps. ESAs will be temporarily fenced during construction with orange plastic snow fence, orange silt fencing, or in areas of flowing water, with stakes and flagging. No personnel, equipment, or debris will be allowed within the ESAs. Temporary ESA fencing and flagging will be installed in a manner that does not impact habitats to be avoided and such that it is clearly visible to personnel on foot and operating heavy equipment. Caltrans will submit to the PSFWO, at least 5 days prior to initiating project impacts (except for impacts resulting from clearing to install temporary fencing), the final plans for initial clearing and grubbing of habitat and project construction. These final plans will include photographs that show the fenced and flagged limits of impact and all areas to be impacted or avoided. Field maps	p.2-157	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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indicating the location of temporary ESA fencing and/or staking will also be provided. If work occurs within vireo habitat beyond the fenced or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of the PSFWO. Temporary ESA fencing and markers will be maintained in good repair until the completion of project work adjacent to each ESA and removed upon completion of project work adjacent to each ESA.										
CM-9 An employee education program will be developed and implemented by the Project Biologist. Each employee (including temporary, contractors, and subcontractors) will receive a training/awareness program prior to working on the proposed project. They will be advised of the potential impact to the listed species and the potential penalties for taking such species. At a minimum, the program will include the following topics: occurrence of the listed and sensitive species in the area (including photographs), their general ecology, sensitivity of the species to human activities, legal protection afforded these species, penalties for violations of Federal and State laws, reporting requirements, and project features designed to reduce the impacts to these species and	p.2-158	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction						

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promote continued successful occupation of the project area.										
CM-10 During project construction all invasive species included on the National Invasive Species Management Plan, the State of California Noxious Weed List, and the California Invasive Plant Council's Invasive Plant Inventory list (Cal-IPC 2006) found growing within the project impact area will be identified and removed at least once a month. Special care will be taken during transport, use, and disposal of soils containing invasive weed seeds and all weedy vegetation removed during construction will be properly disposed of to prevent spread into areas outside of the construction area. All heavy equipment will be washed and cleaned of debris prior to entering a new area to minimize the spread of invasive weeds.	p.2-158	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	During Construction						
CM-11 Project landscaping will follow the provisions set forth in Executive Order 13112, which mandates preventing the introduction of and controlling the spread of invasive plant species on highway ROWs. No invasive species listed in the National Invasive Species Management Plan, State of California Noxious Weed List, or Cal-IPC Invasive Plant Inventory list will be used in the landscaping plans for the project. Caltrans will review the	p.2-158	ISEA, BO	District Design / District Biological Studies / Resident Engineer	Pre-Construction, Construction						

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landscaping plans for the project and then submit them to the PSFWO for review and approval.										
CM-12 If nighttime construction is necessary, all project lighting (e.g., staging areas, equipment storage sites, roadway) will be of the lowest illumination necessary for human safety, selectively placed, and directed onto the construction site and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats.	p.2-158	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						
CM-13 Permanent project lighting will be of the lowest illumination necessary for safety and will be directed toward the bridge and paved roadway and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats. Caltrans will review the permanent lighting plans for the project and then submit them to the PSFWO.	p.2-158	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						
CM-14 A construction Storm Water Pollution Prevention Plan (SWPPP) and soil erosion and sedimentation plan will be developed to identify best management practices that will be implemented during construction to minimize erosion, prevent sediment and debris from entering drainages, and maintain	p.2-158	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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water quality. Sediment will not be stockpiled in areas where material could be washed into drainages by rainfall. Erosion and sediment control devices used for the proposed project, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.										
CM-15 All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated areas located within previously disturbed upland. They will be located such that runoff from the designated areas will not enter vireo habitat.	p.2-158	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						
CM-16 Impacts from fugitive dust will be minimized through watering and other appropriate measures.	p.2-159	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						
CM-17 The project site will be kept as clear of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site.	p.2-159	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						
CM-18 Project personnel will be prohibited from bringing domestic pets to construction sites to ensure that domestic pets do not	p.2-159	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						

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disturb or depredate wildlife in adjacent native habitats.										
CM-19 Fire suppression equipment, including extinguishers, shovels, and water tankers, will be available on site during construction.	p.2-159	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Construction						
CM-20 If project construction, excluding clearing and grubbing, is necessary during the vireo breeding season (March 15–August 31) that will generate noise in excess of ambient noise levels within vireo nesting habitat, measures will be implemented to reduce noise disturbance to vireos. A noise abatement plan will be submitted to the PSFWO for review and approval within 30 days of initiating project impacts and 5 days prior to commencing pile driving and pavement breaking work. The noise abatement plan will include the following information: (a) a description of the noise abatement measures that will be implemented by the project (e.g., mufflers, use of a vibratory driver, shroud for pile driver, soft start, cushion block, sound wall or curtain, placement of project generators away from the riparian area and behind k-rail, etc.) and (b) noise levels that are anticipated within the adjacent vireo nesting habitat. The Project Biologist will oversee implementation of the noise abatement plan and may conduct noise monitoring and vireo	p.2-159	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						

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surveys as needed, based on their judgment and knowledge of the species, site, and proposed activities, to minimize noise impacts to vireos.										
CM-21 Chino Creek Bridge will be designed and constructed with barriers that will reduce traffic roadway noise below 60 dB and reduce light spill from vehicle headlights into adjacent habitat. The barrier design will be provided to the PSFWO for review and approval.	p.2-159	ISEA, BO	District Design / District Biological Studies / Resident Engineer	Pre-Construction						
CM-22 Aerial species diversion structures such as bridge poles or fencing will be included on the Chino Creek Bridge to avoid and minimize wildlife-vehicle collisions. The structures will be designed to be visible to birds, and to prevent perching by raptors, and will be of sufficient height to guide birds over vehicle traffic.	p.2-159	ISEA, BO	District Design / District Biological Studies / Resident Engineer	Pre-Construction, Construction						
CM-23 Chino Creek Bridge will be designed without cable stays/guywires that would pose a significant threat of bird mortality and injury from collision.	p.2-159	ISEA, BO	District Design / District Biological Studies / Resident Engineer	Pre-Construction						
CM-24 Chino Creek Bridge will be a minimum of 500 feet long and will accommodate dry wildlife movement areas on both banks of Chino Creek to ensure that ecosystem functions are maintained for the benefit of	p.2-159	ISEA, BO	District Design / District Biological Studies / Resident Engineer	Pre-Construction						

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listed species. Rock slope protection will be avoided at the wildlife movement areas. If rock slope protection is required, modifications (e.g., small pebble, dirt, soil covered rip rap, or grouted movement pathways) will be made such that animals of all sizes can use the wildlife movement areas. If feasible, Chino Creek Bridge will be designed with columns rather than pier walls to improve visibility and openness and encourage usage by wildlife.										
CM-25 Measures included in the biological opinion to avoid and minimize project impacts to vireo and its designated critical habitat will also avoid and minimize project impacts to flycatcher.	p.2-159	ISEA, BO	District Design / District Biological Studies / Resident Engineer / Contractor	Pre-Construction, Construction						
M-1 Prior to initiating project work, three preconstruction surveys will be conducted within all suitable vireo habitat in or within 500 feet of the Pine Valley Avenue Extension Project footprint, within 30 days prior to initiation of vegetation removal activities, to verify that no more than 10 vireo pairs will be harmed as a result of the project. If it is the wrong time of year for effective surveys, at the discretion of the Project Biologist, a copy of project surveys conducted within the year may be submitted.	p.2-160	ISEA, BO	District Design / District Biological Studies / Resident Engineer	Pre-Construction						

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M-2 Prior to initiating work, Caltrans will provide to the PSFWO a map showing the distribution of vireos relative to the project footprint and an estimate of the number of vireos that will be impacted by the project, or confirm in writing that the number of pairs that will be impacted by the project remains correct.	p.2-160	ISEA, BO	District Design / District Biological Studies / Resident Engineer	Pre-Construction						
M-3 Caltrans will notify the PSFWO of the area of vireo habitat cleared within 30 days of completing removal of vireo habitat. The purpose of this notification is to ensure that impacts to vireo habitat from the proposed project do not exceed the take thresholds.	p.2-160	ISEA, BO	District Design / District Biological Studies / Resident Engineer	Pre-Construction, Construction						
GHG-1 The contractor must comply with SCAQMD's rules, ordinances, and regulations regarding air quality restrictions.	p..4-16	ISEA	Resident Engineer/ Contractor	Pre-Construction, Construction						
GHG-2 The project will incorporate the use of energy efficient lighting.	p.4-16	ISEA	Resident Engineer/ Contractor	Pre-Construction, Construction						
GHG-3 Bids will be solicited that include use of energy and fuel-efficient fleets in accordance with current practices.	p.4-16	ISEA	Resident Engineer	Pre-Construction						

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GHG-4 The project will maintain equipment in proper tune ad working condition.	p.4-16	ISEA	Resident Engineer/ Contractor	Pre-Construction, Construction						
CC-1 Drainage facilities will be modified to accommodate additional runoff from the roadway extension and the projected increase in the 100-year storm precipitation depth and rainfall in the project area.	p.4-19	ISEA	Resident Engineer	Pre-Construction						
CC-2 Project improvements will be constructed using fire-resistant materials (e.g., steel or concrete) when possible. In addition, vegetation will be cleared from the project area to maintain a defensible space, as applicable.	p.4-20	ISEA	Resident Engineer/ Contractor	Pre-Construction, Construction						

Appendix D List of Technical Studies

- Air Quality Report, May 2019.
- Historic Property Survey Report, March 2022.
- Initial Site Assessment, December 2018.
- Jurisdictional Delineation Report, November 2018, updated March 2021.
- Location Hydraulic Study and Floodplain Report, September 2018.
- Natural Environment Study, November 2018, updated March 2020.
- NES Errata, October 2021 and May 2022.
- Noise Study Report, April 2019.
- Phase II Environmental Site Assessment, June 2019.
- Traffic Impact Assessment, April 2020.
- Visual Impact Assessment, November 2018.
- Water Quality Assessment Report, December 2018.

Appendix E References

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