State Route 57
Stormwater Mitigation Project

ORANGE COUNTY, CALIFORNIA
DISTRICT 12 – ORA – 57 (PM 22.0)
EA 0Q270 / EFIS 1216000117

Initial Study with [Proposed] Mitigated Negative Declaration

Prepared by the
State of California, Department of Transportation

December 2019

This page intentionally left blank

General Information About this Document

What's in this document:

The California Department of Transportation (Caltrans), has prepared an Initial Study (IS), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Orange County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives have been considered for the project, how the existing environment could be affected by the project, the potential impacts for each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document.
- Additional copies of this document and related technical studies are available for review at the Caltrans District 12 office, located at 1750 East 4th Street, Suite 100, Santa Ana, CA 92705. The document is also available for review at the following location during normal business hours:
    - Brea Branch Library, 1 Civic Center Cir #1, Brea, CA 92821
- Project information is available at: **https://www.dot.ca.gov/caltrans-near-me/district-12/district-12-programs/district-12-environmental/sr-57-stormwater-mitigation-project**
- We'd like to hear what you think. If you have any comments about the proposed project, please send your written comments to Caltrans by the deadline.
    - Send comments via postal mail to:

      Caltrans District 12, Division of Environmental Analysis
      1750 East 4th Street, Suite 100
      Santa Ana, California 92705
      Attn: Alben Phung
    - Send comments via email to:

      D12.TonnerCanyon@dot.ca.gov
- Be sure to send comments by the deadline: January 24, 2019

What happens next:

After comments are received from the public and reviewing agencies, Caltrans 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, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans District 12, Division of Environmental Analysis, 1750 East 4th Street, Suite 100, Santa Ana, California 92705, Attn: Alben Phung; (657) 328-6054 (voice), or use the California Relay Service, 1 (800) 735-2929 (TTY), 1 (800) 735-2922 (voice), or 711.

This page intentionally left blank

SCH#_____
12-ORA-57, PM 22.0
0Q270 (EFIS 1216000117)

Provide long-term measures to reduce pollutant contributions to the San Gabriel River-Coyote Creek Watershed by construction of a detention basin within the northbound State Route 57 Tonner Canyon Off-Ramp loop at Post Mile 22.0 in unincorporated Orange County, California

INITIAL STUDY WITH [PROPOSED] MITIGATED NEGATIVE DECLARATION

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

Responsible Agency:

California Transportation Commission

December 9, 2019
Date

Chris Flynn
Deputy District Director
California Department of Transportation
CEQA Lead Agency

The following person may be contacted for more information about this document:

Alben Phung, Environmental Planner
California Department of Transportation, District 12
Division of Environmental Analysis
1750 East 4th Street, Suite 100
Santa Ana, California 92705
(657) 328-6054

This page intentionally left blank

SCH #_____

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) District 12 proposes to provide long-term measures to reduce pollutant contributions to the San Gabriel River-Coyote Creek Watershed by construction of a detention basin within the northbound State Route 57 Tonner Canyon off-ramp loop at Post Mile 22.0 in unincorporated Orange County, California

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 impact on Aesthetics, Agriculture and Forest resources, Biological resources, Cultural resources, Land Use and Planning, Mineral resources, Noise, Population and Housing, Recreation, and Tribal Cultural resources.

In addition, the proposed project would have a less than significant impact on Air Quality, Energy, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Public Services, Transportation and Traffic, Utilities and Service Systems, and Wildfires.

With the preparation and implementation of mitigation measure **PAL-1**, the proposed project would have a less than significant impact with mitigation on Geology and Soils (Paleontological resources).

_____ _____

Chris Flynn
Deputy District Director
District 12
California Department of Transportation

Date

This page intentionally left blank

Table of Contents

List of Figures

List of Tables

Chapter 1 – Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), is the lead agency under the California Environmental Quality Act (CEQA). Caltrans is proposing a Storm Water Mitigation project located on State Route 57 (SR-57) at Postmile 22.0 (PM 22.0) within the City of Brea's sphere of influence in unincorporated Orange County. Brea's sphere of influence are properties under the jurisdiction of Orange County agencies but bear a critical relationship to Brea's planning activities. The project area is within the San Gabriel River-Coyote Creek watershed, which has a Total Maximum Daily Load (TMDL) for metals (Cu, Pb, Zn) and selenium.

According to the Environmental Protection Agency[1], a TMDL is:

> *"…the calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant. A TMDL determines a pollutant reduction target and allocates load reductions necessary to the source(s) of the pollutant."*

The project proposes to provide long-term measures to reduce pollutant contributions to the San Gabriel River-Coyote Creek watershed. The proposed project will construct a treatment best management practice (BMP) in the form of a new detention basin within the northbound SR-57 off-ramp loop to Tonner Canyon Road (PM 22.0) (see Figure 1-1, Regional Location Map and Figure 1-2 Project Vicinity Map). There are two alternatives for this project, the Build and No Build alternatives.

Project History

This project was initiated by the National Pollution Discharge Elimination System (NPDES) Branch in District 12 to achieve annual compliance units required by Statewide NPDES Permit (Order No. 2012-0011-DWQ) effective July 1, 2013. It is programmed through the State Highway Operational Protection Plan (SHOPP) for the fiscal year 2021/2022. The Project Initiation Report (PIR) was concurred with by the Division of Planning and Local Assistance and approved on June 26, 2017 by the District 12 Director, Ryan Chamberlain.

Existing Facility

SR-57 is an interregional and commuter freeway that begins at Interstate 5 (I-5) in Santa Ana, extending northeasterly and traversing the Brea Foothills toward the City of Pomona and ends at Interstate 210 (I-210). The state route is heavily utilized for interregional travel, commercial use, and commuter use. The project segment of the SR 57 runs in the north/south direction and is a 10-lane freeway that consists of two HOV lanes and eight mixed-flow lanes. The Tonner Canyon loop off-ramp from SR 57 north bound is approximately 867 ft at its longest reach and 313 ft at its widest point. The surface area within the loop off-ramp is approximately 5.18 acres and is sparsely vegetated.

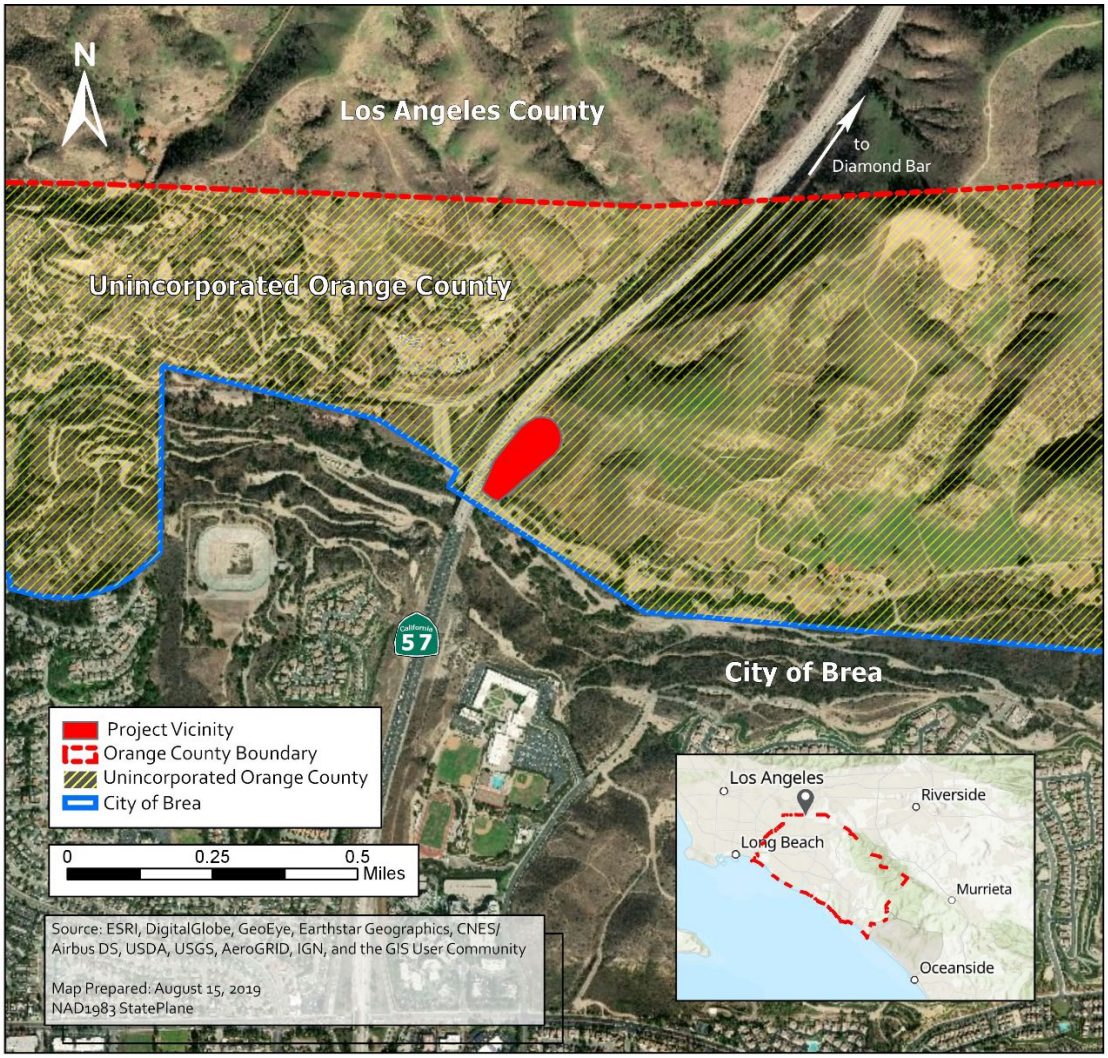
[1] Overview of Total Maximum Daily Loads (TMDLs), Environmental Protection Agency. Accessed September 6, 2019. Website https://www.epa.gov/tmdl/overview-total-maximum-daily-loads-tmdls

This page intentionally left blank

Figure 1-1 Regional Location Map

This page intentionally left blank

Figure 1-2 Project Vicinity Map



This page intentionally left blank

Presently, this loop off ramp is often used as staging area for various maintenance/ construction activities. The proposed BMP detention basin will be constructed within this loop off ramp.

The Build Alternative is included in the Southern California Association of Governments' (SCAG's) 2019 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) under RTP ID 2M0717 and in the 2019 Federal Transportation Improvement Program under Project ID ORA001108 (refer to Appendix B). If a Build Alternative is identified as the Preferred Alternative, it will be funded through the State Highway Operation and Protection Program (SHOPP) under the Stormwater Program (201.335) for fiscal year 2021/2022.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to:

- Construct a treatment best management practice (BMP) to treat roadway runoff from Caltrans Right of Way.

Caltrans is required to comply with the Statewide NPDES Permit (Order No. 2012-0011-DWQ) effective July 1, 2013. On May 20, 2014, the State Water Resources Control Board adopted an amendment to the 2012 Order. Attachment IV of the 2012 Order identifies Total Maximum Daily Load (TMDL) Reach Prioritization Rankings that the State Water Board has determined to have priority discharges. This project proposes to credit Caltrans with 23.8 compliance units and assists Caltrans with meeting its compliance requirements per the Permit.

Caltrans can only account for discharge from its facilities. Thus, Caltrans cannot address the TMDL for the entirety of the San Gabriel River-Coyote Creek watershed since there are numerous contributors from different entities. However, Caltrans can reduce contribution of pollutants from stormwater discharge from its facilities.

1.2.2 Need

The project is needed to address:

- The San Gabriel River-Coyote Creek watershed does not meet the allotted TMDL for metals.

This watershed has a TMDL for metals (Cu, Pb, Zn) and selenium. A detention basin's applicable target design constituents are total suspended solids, nutrients, particulate metals, litter, and turbidity. A detention basin is an appropriate treatment BMP to address the watershed's TMDL.

1.2.3 Social Demands or Economic Development

The proposed project is located along State Route 57 (SR-57). The purpose and scope of this project is for storm water mitigation. While the project has no direct roadway improvements or impacts, the project is listed as a State Highway Operation and Protection Program (SHOPP) project in the 2014 District System Management Plan (DSMP) and is consistent with DSMP goals in addressing storm water runoff. Additionally, the project is

consistent with the goals of the Caltrans Statewide Stormwater Management Plan (July 2016).

1.2.4 Regional Plans

Southern California's Association of Government's (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is a long-range visioning plan that balances future mobility, housing needs, economic, environmental, and public health goals. The proposed project is consistent with the 2016-2040 RTP/SCS plan in minimizing pollutants from roadway runoff through the incorporation of water treatment and control features such as detention basins[1]. The latest Transportation Concept Report (TCR) for SR-57, the Orange County Transportation Authority (OCTA) 2018 Long Range Transportation Plan (LRTP), and the RTP/SCS all identify two projects along this corridor – a northbound truck climbing lane from Lambert Road to the Los Angeles/Orange County line, and an interchange reconfiguration project at Lambert Road. The OCTA LRTP also identifies OC Go Project G as a committed project funded through Measure M that will add capacity on northbound SR-57 from Lambert Road to Tonner Canyon Road.

1.2.4.1 Local Plans

The project location is within unincorporated Orange County within the City of Brea's sphere of influence. Local plans for the area include the County of Orange General Plan Land Use Element (2015)[2], Water Quality Control Plan: Santa Ana River Basin (1995)[3], and the City of Brea's General Plan (2003)[4]. The project is consistent with local plans in following the permit requirements under the National Pollutant Discharge Elimination System. The project consists of constructing a detention basin within the State Right-of-Way. No structures or facilities will be constructed that will inhibit growth or increase use by the public. Therefore, there are no conflicts with local plans regarding growth, transportation, circulation, or any policies for land use.

1.2.5 Legislation

The limits of the proposed project are within the jurisdiction of the Santa Ana Regional Water Quality Control Board (RWQCB). The receiving water body for the proposed project is the Brea Canyon Channel, which is not listed under Section 303(d) of the 2012 Clean Water Act (CWA) as being impaired. However, the project lies within the San Gabriel River-Coyote Creek Watershed, which has a TMDL for metals (Cu, Pb, Zn) and selenium.

This project must conform to all applicable water quality regulations and/or permit requirements of the State Water Resources Control Board (SWRCB) and the local Santa Ana Regional Water Quality Control Board (RWQCB), including, but not limited to, the Caltrans Statewide NPDES Permit (Order WQ 2014-0077-DWQ) amending (Order No.

[1] 2016-2040 RTP/SCS, SCAG, Chapter 5, The Road to Greater Mobility & Sustainable Growth. Accessed August 27, 2019. Website http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx

[2] Land Use Element, County of Orange General Plan. 2015. Accessed August 27, 2019. Website https://www.ocgov.com/gov/pw/cd/planning/generalplan2005.asp

[3] Santa Ana Region Basin Plan (Water Quality Control Plan), Orange County Watersheds, Orange County Public Works. Accessed August 27, 2019. Website http://www.ocwatersheds.com/programs/waterways/stormwater/reportsdocuments

[4] General Plan, City of Brea. 2003. Accessed August 27, 2019. Website https://www.ci.brea.ca.us/179/General-Plan

2012-0011-DWQ, NPDES No. CAS000003), the Statewide General NPDES Permit for Construction Activities (Order No 2010-0014-DWQ) amending (Order No. 2009-0009-DWQ, NPDES No. CAS000002), the Caltrans Storm Water Management Plan (December 2015 revision), and any subsequent revision and/or additional requirements at the time of construction. If dewatering is required, dewatering must comply with Santa Ana Regional Water Quality Control Board's Order R8-2015-0004, NPDES Permit No. CAG998001 for general water discharge requirements for discharges to surface waters that pose an insignificant (De Minimus) threat to water quality, or subsequent permit.

1.2.6 Modal Interrelationships and System Linkages

SR-57 is an interregional and commuter freeway that begins at Interstate 5 (I-5) in Santa Ana and ends at Interstate 210 (I-210) in the city of Glendora. SR-57 is part of the California highway system that connects two interstate highways providing access to other states and to the Mexico-United States border at San Ysidro. In addition, shown in Figure 1-3: Caltrans Truck Networks, SR-57 is part of the California Truck Network and is serves as legal truck access to the national network (STAA) for truck system linkages.

There are no Orange County Transportation Authority (OCTA) bus routes operating on the section of SR-57 within the scope of this project. Historically, Express Bus Routes 757 and 758 ran from Pomona to Santa Ana and from Chino Hills to the Irvine Spectrum from Orange County to Los Angeles County. These two Express Bus Routes traveled through the SR-57 corridor. Since the discontinued service in October 2016, no other OCTA transit services are provided in this section of SR-57. However, several OCTA bus lines operate near SR-57.

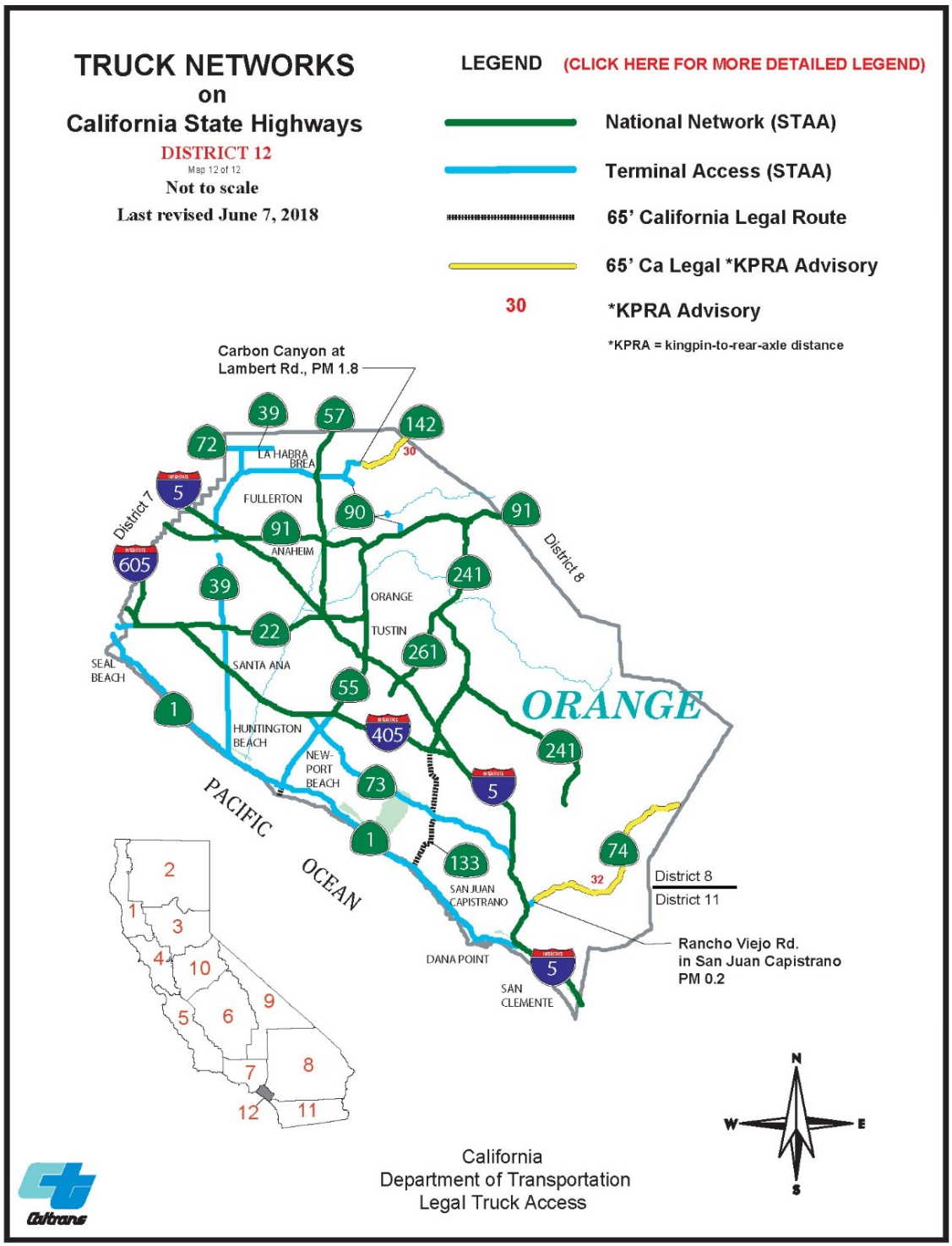
- **OCTA Bus Route 53/53x**: Brea to Irvine via Main Street
- **OCTA Bus Route 57/57x**: Brea to Newport Beach via State College Blvd / Bristol St.
- **OCTA Bus Route 59**: Brea to Irvine via Kraemer – Glassell – Grand
- **OCTA Bus Routes 129**: La Habra to Anaheim via La Habra Blvd – Brea Blvd – Birch St. – Kraemer Blvd
- **OCTA Bus Route 143**: La Habra to Brea via Whittier Blvd / Harbor Blvd / Brea Blvd / Birch St.
- **OCTA Bus Route 147**: Brea to Santa Ana via Harbor Boulevard
- **OCTA Bus Route 153**: Brea to Anaheim via Placentia Ave
- **OCTA Bus Route 213**: Brea to Irvine Express via 55 freeway

Foothill Transit operates 39 bus lines within 22 cities between downtown Los Angeles to southwest San Bernardino County. There is only one bus route that traverses through the project location.

- **Foothill Transit Bus Route 286:** Pomona to Diamond Bar to Brea Mall via SR-57

This page intentionally left blank

Figure 1-3 Caltrans Truck Networks



Source: Caltrans Legal Truck Access

This page intentionally left blank

Currently, there are no bicycle or pedestrian facilities within the project area. The closest facilities are a Class II bike lane on State College Road near Lambert Road and The Tracks at Brea, a Class I multi-use path constructed on a Union Pacific Railroad right-of-way. The OCTA Brea Park and Ride lot is located at SR-57 and Lambert Road. There are no existing pedestrian facilities within the project vicinity.

1.2.7 Air Quality Improvements

The Build Alternative would not improve nor decrease air quality in the vicinity. After construction of the detention basin, the highway facility will not result in modification, altered traffic operation, nor increased capacity.

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. Caltrans proposes two alternatives for this project. The Alternatives being analyzed and considered as part of this Initial Study (IS) are:

- Build Alternative – Proposes to construct a treatment BMP inside the Tonner Canyon off-ramp loop of northbound SR-57

- No Build Alternative

The Build Alternative is located within unincorporated Orange County north of the City of Brea. This area is also identified as being part of the City of Brea's sphere of influence. The project limits are contained within the northbound SR-57 Tonner Canyon off-ramp loop at Postmile 22.0 (PM 22.0). The entirety of the project will be within Caltrans' State Right-of-Way in the off-ramp loop. The proposed project will provide long-term measures to reduce pollutant contributions to the San Gabriel River-Coyote Creek Watershed by construction of a detention basin.

1.4 Alternatives

This IS evaluates the Build Alternative and the No Build Alternative. The Build Alternative meets the purpose and need of the proposed project while avoiding and minimizing environmental impacts. The alternatives are discussed in the following section. Please refer to Appendix E for the Build Alternative plans.

The Build Alternative contains a number of standardized project features that are employed on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the Build Alternative. Many of these standardized measures are discussed in the section below, but are addressed in more detail in Chapter 2.

1.4.1 Proposed Build Alternative

This section discusses the major project features of the proposed Build Alternative. The proposed Build Alternative in the northbound SR-57 Tonner Canyon off-ramp loop will include the following scope of work:

- **Detention Basin Construction and Drainage Modification –** The treatment BMP, in the form of a detention basin, will connect to existing drainage systems upstream to receive, treat, and release freeway runoff downstream. This will involve cutting drainage pipes to insert the detention basin inlet and outlet with the existing drainage system. See Figure 1-4 below for a diagram of a detention basin.

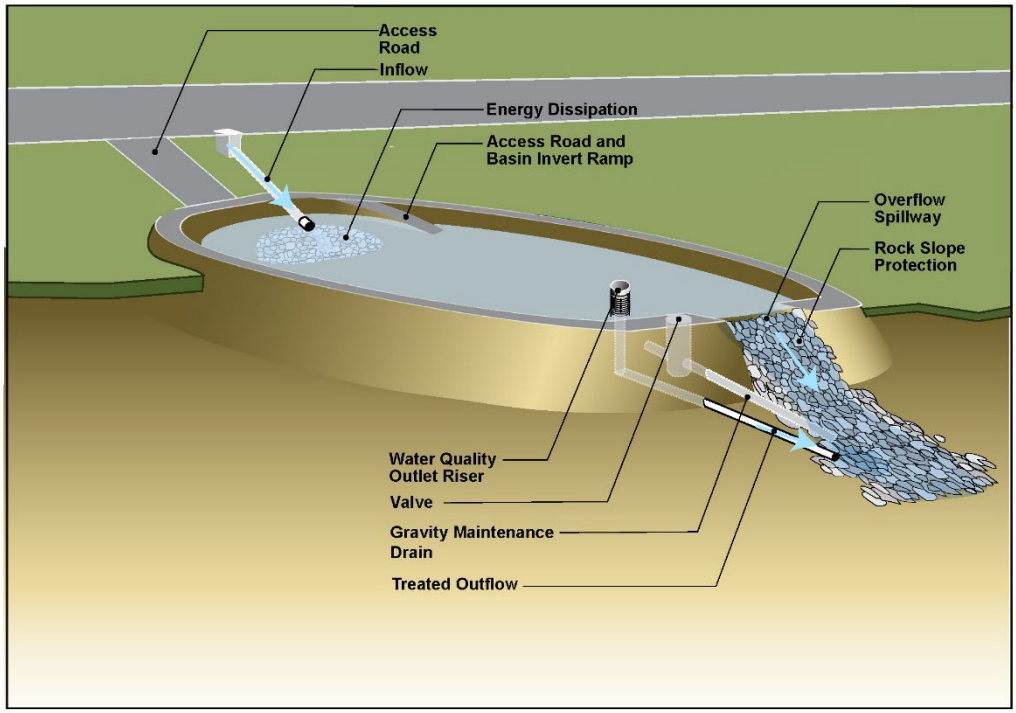
- **Maintenance Road Construction** – A maintenance road around the basin's perimeter and an access ramp leading to the basin floor will be constructed for ease of maintenance. Also, a maintenance vehicle access road from the loop off ramp to the maintenance road will be constructed.

- **Midwest Guardrail System Installation** – Approximately 800 ft. of Midwest guardrail system (MGS) will be installed along the right-side edge of the Tonner Canyon off-ramp loop.

- **Light Post Installation and Upgrade** – Light posts near the off-ramp loop will be updated and additional light posts will be added to fill the gaps in the existing lighting. Currently, there are five (5) existing light posts. It is proposed to relocate the existing light posts and add six (6) additional light posts.

- **Landscape** – Landscape with native vegetation will be used for permanent erosion and sediment control on the slopes and floor of the detention basin.

Figure 1-4 Detention Basin Diagram



Source: Caltrans Design Guidance on Detention Basins, July 2010

In addition, the above scope will involve, but is not limited to, the following construction activities: clearing and grubbing; excavation; trenching; and drainage work. All construction work will be performed within Caltrans Right-of-Way and no other utility work will be required.

The project is within the Brea-Olinda Oil Field; however, no oil or gas wells and/or lines are identified within the project limits. There are three overhead powerlines, owned by Southern California Edison, that lie along the direction of Tonner Canyon. One line runs along the western edge of Tonner Canyon on overhead poles. The other two lines run along the eastern edge of Tonner Canyon. However, the lines are not in conflict with the construction of the Build Alternative and they will be protected in place.

There are no railroad tracks within the project limits and as a result there is no railroad involvement for this project.

Other Project Elements (Standardized Project Measures)

The Build Alternative contains several standardized project measures that are employed on most, if not all, Caltrans projects. The use of these measures with the Build Alternative is described in more detail in Chapter 2 of this Initial Study as Project Features (PF) and numbered. For example, a Project Feature applicable to water quality would be titled and listed as PF-WQ-1.

Air Quality

- **Caltrans Standard Specifications in Section 14-9 Air Quality**

  PF-AQ-1: To minimize impacts to air quality, the contractor is required to comply with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

Biology

- **Caltrans Standard Specification 14-6.03B Bird Protection**

  PF-BIO-1 Nesting Bird Season: To avoid impacts to any nesting birds, ground disturbance that occurs during the nesting bird season (February 1 – September 30) will require nesting bird surveys by a Caltrans Biologist within 72 hours prior to the start of work. The Caltrans Biologist will be contacted at least one week ahead of time to schedule a survey

Cultural

- **Caltrans Standard Specification 14-2.03A: Discovery of Cultural Materials.**

  PF-CUL-1: If cultural materials are discovered during construction activities, the construction Contractor will divert all earthmoving activity within and around the immediate discovery area until a qualified archaeologist can assess the nature and significance of the find. At that time, coordination will be maintained with the

California Department of Transportation District 12 Environmental Branch Chief or the District 12 Native American Coordinator to determine an appropriate course of action

- **Caltrans Standard Specification 14-2.03A: Discovery of Human Remains.**

  PF-CUL-2 If human remains are discovered during construction activities, California State Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the Orange County Coroner shall be contacted. If the remains are thought to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC), who pursuant to California Public Resources Code (PRC) Section 5097.98, will then notify the Most Likely Descendant (MLD). At that time, the persons who discovered the remains will contact the Caltrans District 12 Environmental Branch Chief or the District 12 Native American Coordinator so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of California PRC 5097.98 are to be followed as applicable.

Geology/Soil/Seismicity/Topography

- **Caltrans Standard Specifications 48-2.02. B and Section 19 Earthwork General:**

  PF-GEO-1: The project will comply with the most current Caltrans procedures and design criteria regarding seismic design to mitigate any adverse effects related to seismic ground shaking. Earthwork will be performed in accordance with Caltrans Standard Specifications, Section 19, which require standardized measures related to compacted fill, over-excavation, and re-compaction, among other requirements. Moreover, Caltrans Highway Design Manual (HDM) Topic 113, requires the project engineer to review a Geotechnical Design Report, if any, to ascertain the scope of geotechnical involvement for a project.

Paleontology

- **Caltrans Standard Specification 14-7.03:**

  PF-PAL-1: If unanticipated paleontological resources are discovered all work within 60 feet of the discovery must cease and the construction resident engineer must be notified. Work cannot continue near the discovery until authorized.

- **Water Quality and Storm Water Runoff**

  - **Caltrans Standard Specification 13-1.01D (2)-Regulatory Requirements:**

    PF-WQ-1: The project will comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for the State of California Department of Transportation, Order No. 2012-0011-DWQ, NPDES No. CAS000003 and any subsequent permits in effect at the time of construction.

  - **Caltrans Standard Specification 13-3.01D (2)-Regulatory Requirements:**

PF-WQ-2: The project will comply 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, NPDES General Permit No. CAS000002 and any subsequent permits in effect at the time of construction.

- **Caltrans Standard Specification 13-3 Storm Water Pollution Prevention Plan:**

  PF-WQ-3: The project will comply with the Construction General Permit by preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate Risk Level. The SWPPP will identify the sources of pollutants that may affect the quality of Storm water and include BMPs to control the pollutants, such as: sediment control, catch basin inlet protection, construction materials management, and non-storm water BMPs. All work must conform to the Construction Site BMP requirements specified in the latest edition of the Storm Water Quality Handbooks: Construction Site Best Management Practices Manual to control and minimize the impacts of construction and construction related activities, material and pollutants on the watershed. These include, but are not limited to temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-storm water BMPs

- **PF-WQ-4:**

  Design Pollution Prevention BMPs will be implemented such as preservation of existing vegetation, slow/surface protection systems (permanent soil stabilization), concentrated flow conveyance systems such as ditches, berms, dikes and swales, overside drains, flared end sections, and outlet protect/velocity dissipation devices.

- **PF-WQ-5:**

  Caltrans approved treatment BMPs will be implemented consistent with the requirements of NPDES permit and Waste Discharge Requirements for the State of California, Department of Transportation, Order No. 2012-001-DWQ, NPDES No. CA200003 and any subsequent permits in effect at the time of construction.

Noise

- **Caltrans Standard Specifications Section 14.8-02 Noise Control**

  PF-N-1: Do not exceed 86 A-weighted decibel instantaneous noise level dBA L_{max} at 50 feet from the job site from 9 p.m. to 6 a.m.

Traffic

- **Caltrans Standard Specifications Section 12-4 Maintaining Traffic**

  PF-TRA-1: The project will include preparation of a Transportation Management Plan (TMP) during the Design (Plans, Specifications, and Estimates (PS&E)) phase. The TMP is an approach for alleviating or minimizing traffic delays by the

effective application of traditional traffic handling practices and an innovative combination of various strategies. These strategies include public awareness campaigns, motorist information, incident management, construction methods, demand management, and alternate route planning. The TMP will detail a plan for the umbrella standard specification of 12-4 Maintaining Traffic and any applicable sections (i.e. 12-4.01 General, 12-4.02 Traffic Control Systems, 12-4.03 Falsework Openings 12-4.04 Pedestrian Facilities, etc.).

1.4.1.1 Project Costs

The Build Alternative is programmed in State Highway Operation and Protection Program, Storm Water Mitigation Program (201.335) for fiscal year 2021/2022. The project is eligible for Federal-aid funding.

The current cost estimate for the construction of the Build Alternative is $6,797,000 There is no structure or Right-of-Way costs required for this project.

1.4.2 Project and Construction Schedule and Staging

Construction of the Build Alternative is anticipated to be completed in 2024. Construction is anticipated to take 1 year

The Build Alternative will be constructed completely within the off-ramp loop. The northbound SR-57 Tonner Canyon off-ramp loop is a one-lane ramp. First, to install the MGS on the right-side edge of the off-ramp, the off-ramp loop will be closed. Once the MGS is installed, the remainder of the construction activities will be done behind the newly installed MGS within the off-ramp loop. During construction, one lane of the off-ramp will be closed and be used for construction vehicle access, thus leaving one lane open for the traveling public. This maintains access for the public to use the off-ramp. The proposed project will utilize the following traffic management strategy when necessary. However, traffic volumes and appropriate ramp closures will be further evaluated as the project proceeds.

- **Ramp shoulder/One lane closure (SR-57/NB)** -- ramp shoulder/one lane closure at northbound SR-57 Tonner Canyon off-ramp loop will keep one lane open throughout the construction period from 6:00 AM to 6:00 PM.

However, if during the design phase, the safety review committee determines that maintaining off-ramp access for the public is a safety hazard, a complete full night-time ramp closure may be used for the ingress/egress of large construction vehicles or equipment. In addition, due to the night-time full ramp closure, there will be two detours utilized below. If the following traffic managing strategy will need to be implemented, the closures will be temporary and not occur over a long period of time This option will utilize the following lane closure chart and detours below.

- **Night-time full ramp closure (SR-57/NB)** –complete full night-time ramp and shoulder closure at northbound Tonner Canyon off-ramp loop from 8:00 PM to 6:00 AM.

- **Detour #1: South of closure** – northbound SR-57 exit to Lambert Road (left), State College Blvd (right), Brea Blvd (right) to Tonner Canyon Rd.

- **Detour #2: North of closure** – northbound SR-57 exit to Diamond Bar Blvd (left), back to southbound SR-57, exit to Brea Canyon Rd (right) to Tonner Canyon.

Installation of the MGS, which typically only require two or three nights of work will require the full-time ramp closure. After installation of MGS, a complete ramp closure may not be necessary for the remainder of the work for the Build Alternative.

During the design phase, there will be coordination with the City of Brea for their comments on traffic handling, detours, and lane closure charts.

Lane closure charts and detour information will be further developed in the design phase.

1.4.3 No Build Alternative

The No Build Alternative proposes no action, where no construction would be made within the Tonner Canyon off-ramp loop. With the No Build Alternative, existing conditions and contributions of metals and selenium to the San Gabriel River-Coyote Creek Watershed would continue. Under this alternative, pollutant contribution to the watershed for metals and selenium will not be reduced from the highway facility within the project limits. Caltrans will not receive any compliance units towards achieving the annual compliance units required by Statewide NPDES Permit (Order No. 2012-2011-DWQ). This alternative provides a baseline for comparison of environmental impacts under the Build Alternative.

The No Build Alternative would not address the water quality being discharged from the project limits. Therefore, this alternative would not meet the proposed project's Purpose and Need.

1.5 Permits and Approvals Needed

The following permits, licenses, agreements, and/or certifications are required for construction of the Build Alternative and are described below in Table 1.1

Table 1-1 Permits and Approvals Needed

Agency	Permit/Approval	Status
California Transportation Commission (CTC)	CTC will vote to approve funds	Approval will be obtained after FED.
State Water Resources Control Board (SWRCB)	Section 402 NPDES/NPDES General Permit for Stormwater Discharges of Stormwater Runoff Associated with Construction Activities (Order No. 2009-0009-DWQ, as amended by 2012-0006- DWQ)	Caltrans District 12, as the applicant for the NOI, to obtain permit prior to construction
State Water Resources Control Board (SWRCB)	Caltrans NPDES Statewide Stormwater Permit (Order No. 2012-0011-DWQ, as amended by Order WQ 2014-0006-EXEC, Order WQ 2014- 0077-DWQ, and Order WQ 2015-0036-EXEC, NPDES No. CAS000003)	Amended permit issued to Caltrans on May 20, 2014, for discharges from state right-of-way.

Caltrans = California Department of Transportation
NPDES = National Pollutant Discharge Elimination System
FED = Final Environmental Document
FHWA = Federal Highway Administration

This page intentionally left blank

Chapter 2 – CEQA Checklist

The environmental factors checked below would be potentially affected by this project. Please see the checklist beginning on page 3 for additional information.

☐	Aesthetics	☐	Agriculture and Forestry	☐	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Energy
☒	Geology/Soils	☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials
☐	Hydrology/Water Quality	☐	Land Use/Planning	☐	Mineral Resources
☐	Noise	☐	Population/Housing	☐	Public Services
☐	Recreation	☐	Transportation	☐	Tribal Cultural Resources
☐	Utilities/Service Systems	☐	Wildfire	☒	Mandatory Findings of Significance

DETERMINATION:

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: Smita Deshpande	**Date:** 12/9/19
Printed Name: Smita Deshpande	**For:**

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.

2.1 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?	☐	☐	☐	☒

The potential for the Build Alternative to result in adverse impacts related to aesthetics was analyzed by Caltrans District 12 Landscape Architect April 2019 and the following discussion is based on that analysis.

2.1.1 CEQA Significance Determinations for Aesthetics

a) No Impact. The City of Brea General Plan Scenic Resources Element (2003)[1] identifies view corridors and scenic viewpoints throughout the City. There are no scenic viewpoints identified near the project location along SR-57. There is an identified view corridor just south of the project location. However, the project is not within the direction or view of this

[1] City of Brea General Plan, Scenic Resources Element (2003). https://www.ci.brea.ca.us/179/General-Plan (accessed March 13, 2019)

view corridor. No scenic viewpoints are identified within or near the project location and the project does not interfere with existing view corridors. Thus, there are no impacts to scenic vistas and no mitigation would be required.

b) No Impact. According to the California Department of Transportation's Officially Designated Scenic Highway map[1], the stretch of SR-57 in Orange County is not an officially designated scenic highway. However, this segment of SR-57 is eligible to be designated as a State Scenic Highway. Implementation of the Build Alternative will not affect the status of the SR-57 as an eligible State Scenic Highway. In addition, the proposed scope of work will take place within the northbound SR-57 off-ramp to Tonner Canyon Road where there are no existing scenic resources. The existing off-ramp area does not contain any trees, rock outcroppings, or historic buildings. Therefore, there are no impacts to scenic resources within the SR-57 eligible State Scenic Highway. No mitigation would be required

c) No Impact. As mentioned above, there is a view of the corridor just south of the project location. This view of the corridor will not be impacted by the implementation of the Build Alternative. According to the Resource Element in the General Plan of the City of Brea, there are no scenic viewpoints within or near the project location. The implementation of the build alternative does not involve construction of a structure that will impede on views of the corridor or from the SR-57 eligible State Scenic Highway. The project does not conflict with any applicable zoning or regulations governing scenic quality. There will be no impact to the visual character or quality of public views of the site and its surroundings nor any conflict with zoning and regulations governing scenic quality. No mitigation would be required.

d) No Impact. The Build Alternative proposes to construct a treatment Best Management Practice (BMP) in the form of a new detention basin. Included in the scope of work within the vicinity of the off-ramp is the upgrade of existing light posts and installation of additional light posts to fill the gaps of the existing lighting. The location of the light posts is within the vicinity of existing light posts that illuminate the off-ramp and is not a substantial source of light. In addition, the light posts are situated at a lower elevation from the highway. Thus, the light posts would not adversely affect any daytime or nighttime views of the area. No mitigation would be required.

2.2 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

[1] California Scenic Highway Mapping System (2018). http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm (accessed March 13, 2019)

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?	☐	☐	☐	☒

2.2.1 CEQA Significance Determinations for Agriculture and Forest Resources

The potential for the Build Alternative to result in adverse impacts related to Agriculture and Forest Resources is assessed in the following discussion.

a) No Impact. According to the California Department of Conservation, Division of Land Resources Protection (DLRP), Farmland Mapping and Monitoring Program data, no Prime Farmland, Unique Farmland, nor Farmland of Statewide Importance is present within the project rea. Therefore, there would be no conversion of such farmland to non-agricultural uses with implementation of the Build Alternative and no mitigation is required.

b) No Impact. The Build Alternative would not involve the permanent or temporary conversion of land zoned for agricultural use by the local jurisdictions' General Plans (i.e, the City of Brea[1] or the County of Orange). Additionally, based on a review of the Williamson

[1] City of Brea, General Plan. Adopted August 10, 2003. https://www.ci.brea.ca.us/179/General-Plan (accessed March 12, 2019)

Act Parcels map for Orange County[1], no land under Williamson Act contract is within the project limits and, therefore, no land under contract would be impacted. Furthermore, the Build Alternative would not conflict with existing zoning for agricultural use or a Williamson Act contract; therefore, no mitigation is required.

c), d) No Impact. In accordance to the General Plan of the City of Brea and the County of Orange[2], the Study Area is not within any timberlands or forest lands. The land use designation for the Study Area is limited to residential development and natural open space. The Build Alternative would not conflict with any zoning or re-zoning of timberlands or forest lands due to the lack of these environmental resources in the Study Area. No timberland or timberland-zoned timberland production areas are within the Study Area. Therefore, the Build Alternatives would not impact or result in the conversion of timberlands or forest lands.

e) No Impact. The Build Alternative does not involve any forest lands or farmlands and is within a residential and natural open space area. Changes to the existing environment would not result in conversion of farmlands or forest lands to non-agricultural or non-forest uses due to the lack of such land and resources in the Study Area. Therefore, the Build Alternative would have no impact on farmlands or forest lands and no mitigation is required.

2.3 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?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

2.3.1 CEQA Determinations for Air Quality

An Air Quality technical memorandum was prepared on February 2019 by Caltrans District 12 Air Quality Specialist. The following discussion on the potential for the Build Alternative to result in adverse impacts related to Air Quality is based on the technical memo.

[1] State of California DOC. Division of Land Resource Protection. Agricultural Preserves 2004. Williamson Act Parcels, Orange County, California. ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Orange_WA_03_04.pdf (accessed March 12, 2019).

[2] County of Orange, General Plan, Land Use Element Map 2015. https://www.ocgov.com/civicax/filebank/blobdload.aspx?blobid=58442 (Accessed March 12, 2019)

a, b, c, d) Less Than Significant Impact

The proposed project is located in the South Coast Air Basin and is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB). The SCAQMD is the primary agency responsible for writing the Air Quality Management Plan (AQMP) in cooperation with SCAG, local governments, and the private sector. In addition, there are no sensitive receptors in the project vicinity. The AQMP provides the blueprint for meeting state and federal ambient air quality standards. This project is not a capacity-increasing transportation project. It will have no impact on traffic volumes and would generate a less than significant amount of pollutants during construction due to the very short duration of project construction. The proposed project in included in SCAG's most recent RTP and RTIP both of which were found to be conforming. Therefore, the proposed project will not conflict with the AQMP, violate any air quality standard, result in a net increase of any criteria pollutant, or expose sensitive receptors to substantial pollutant concentrations. Impacts will be less than significant. No mitigation is required.

In addition, implementation of Project Feature PF-AQ-1 will further ensure that the impacts to air quality are less than significant.

- **Caltrans Standard Specifications in Section 14-9 Air Quality**
  - **PF-AQ-1**: To minimize impacts to air quality, the contractor is required to comply with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

2.4 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 or 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?	☐	☐	☐	☒

2.4.1 CEQA Significance Determinations for Biological Resources

The potential for the Build Alternative to result in adverse impacts to biological resources was assessed in the *Natural Environment Study-Minimal* Impact (NES-MI) (July 2019) in this Initial Study. The following discussions are based on these analyses.

a) No impact. The approved NES-MI (July 2019) identifies several species on the IPaC list that can be found in the project vicinity and surrounding areas. However, all species on the IPaC have a very low potential of occurring within the project areas. Therefore, a no effect determination has been made for the Coastal California Gnatcatcher, Least Bell's Vireo, Santa Ana Sucker, and Southern California Steelhead.

In addition, the NES-MI (July 2019) identifies presence of a critical habitat within and adjacent to the project area. However, the NES-MI further describes results from field surveys and literature review that describe the degraded and unsuitable condition of the habitat for Coastal California Gnatcatcher. Therefore, a no effect determination was made for the Coastal California Gnatcatcher designated critical habitat. No mitigation required.

Although no mitigation is required for this project regarding impacts on any species identified as a candidate, sensitive, or special status species, the following project features and avoidance measures will be implemented.

- **PF-BIO-1 Caltrans Standard Specification 14-6.03B Bird Protection. Nesting Bird Season**: To avoid impacts to any nesting birds, ground disturbance that occurs during the nesting bird season (February 1 – September 30) will require nesting bird surveys by a Caltrans Biologist within 72 hours prior to the start of work. The Caltrans Biologist will be contacted at least one week ahead of time to schedule a survey.

- **BIO-1 Monitoring**: If any work requires biological monitoring, a qualified biologist will be on site to monitor work as needed. The contractor will contact the resident

engineer, who will contact the Caltrans Biologist, to ensure a biological monitor is on site as needed.

- **BIO-2 Comply with Executive Order Number 13112**: Invasive Species. Vegetation species known to be invasive in the state of California will not be installed (e.g. Mexican fan palm, pampas grass, tree of heaven, etc.). An invasive plant species list can be found at the California Invasive Plant Inventory Council (Cal-IPC) website http://www.cal-ipc.org/paf/. The Landscape Architect will coordinate with the Caltrans Biologist to ensure an appropriate plant palette is created for this project.

- **BIO-3 Light Shields**: To avoid light spillage into the nearby habitat, Caltrans will add shields to the lights that are in accordance with Caltrans 2018 Standard Specifications.

- **BIO-4 Low Temperature Bulb**: To avoid illuminating a broader area, Caltrans will use the lowest colored temperature bulb (2700 Kelvin), which will emit a warmer colored light than the standard LED bulb.

b) No Impact. There is no riparian or sensitive natural community present in the project vicinity. Therefore, the Build Alternative would not affect riparian habitat or other sensitive natural communities. No mitigation is required.

c) No Impact. No wetlands are present within the project vicinity. Therefore, the Build Alternative would not affect wetlands as defined by Section 404 of the Clean Water Act. No mitigation is required.

d) No Impact. There are no habitats present that support fish. Therefore, the Build Alternative would not affect any migratory wildlife corridors or the movement of any native resident or migratory fish or wildlife species. The Build Alternative would not impede the use of native wildlife nursery sites. No mitigation is required.

e) No Impact. The Build Alternative would not conflict with any local policies or ordinances protecting biological resources. No mitigation is required.

f) No Impact. The Build Alternative would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No mitigation is required.

2.5 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 in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒

c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

2.5.1 CEQA Significance Determination for Cultural Resources

The potential for the Build Alternative to result in adverse impacts related to Cultural Resources is discussed in the Historic Property Survey Report (July 2019) and the Archaeological Survey Report (July 2019). The discussion below is based on these technical studies.

a) and b) No impact. The approved Historic Property Survey Report (July 2019) identified that no cultural resources are present within the Area of Potential Effects (APE) and a Finding of No Historic Properties Affected was determined pursuant to Section 106 PA Stipulation IX.A and as applicable PRC 5024 MOU Stipulation IX.A.2. In addition, it was determined that there are No Historical Resources present, as outlined in CEQA Guidelines 15064.5(a).

The approved Archaeological Survey Report (July 2019) concluded that no archaeological resources were identified in the APE through archival research, Native American Consultation, or field surveys.

While unlikely and not anticipated, if cultural resources are encountered during construction activities, implementation of PF-CUL-1 would minimize any impacts. No mitigation required.

- **PF-CUL-1 Caltrans Standard Specification Section 14-2.03A: Discovery of Cultural Materials**. If cultural materials are discovered during construction activities, the construction Contractor will divert all earthmoving activity within and around the immediate discovery area until a qualified archaeologist can assess the nature and significance of the find. At that time, coordination will be maintained with the California Department of Transportation District 12 Environmental Branch Chief or the District 12 Native American Coordinator to determine an appropriate course of action.

c) No impact. No known human remains are interred in the Study Area. While unlikely and not anticipated, if human remains are encountered during construction activities, implementation of PF-CUL-2 would minimize any impacts. No mitigation required.

- **PF-CUL-2 Caltrans Standard Specification Section 14-2.03A: Discovery of Human Remains**. If human remains are discovered during construction activities, California State Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the Orange County Coroner shall be contacted. If the remains are thought to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC), who pursuant to California Public Resources Code (PRC) Section 5097.98, will then notify the Most Likely Descendant (MLD). At that time, the persons who discovered the remains will contact the Caltrans District 12 Environmental Branch Chief or the District 12 Native American Coordinator so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of California PRC 5097.98 are to be followed as applicable.

2.6 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?	☐	☐	☐	☒

2.6.1 CEQA Significance Determination for Energy

The potential for the Build Alternative to result in adverse impacts related to Energy is discussed below.

a) Less than significant impact. The construction of the proposed project will 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 increase the short-term energy demand through related construction activities. This short-term energy demand would cease once the construction of the project is complete. Regarding operational and long-term energy use, occasional maintenance of the detention basin and operation of six additional light poles along the off-ramp will increase the energy demand but only marginally. Therefore, the project will not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. No mitigation required.

b) No impact. The project would be consistent with regional and State energy conservation plans. The Southern California Association of Governments' (SCAG) 2016/2035 Regional Transportation Plan / Sustainable Communities Strategy[1], or Plan, includes information about efforts to encourage energy efficiency and renewable energy use. Regional plans for renewable energy and energy efficiency would not be impacted from the construction and operation of the project. Energy efficient building development is not applicable to this project and renewable energy policies are encouraged for all Caltrans projects where applicable and feasible. The result of this project will not conflict with or obstruct regional plans for renewable energy or energy efficiency.

In addition, the project would also be consistent with local renewable and energy efficient plans. Appendix A in the City of Brea's General Plan includes an Implementation Guide for Community Resources[3]. The Implementation Guide provides a guide to implement the adopted policies and plans for the City of Brea, including those relating to renewable energy and energy efficiency. The project would not interfere or obstruct with these plans or the implementation of them.

[1] 2016/2030 RTP/SCS, Southern California Association of Governments. Accessed July 15, 2019. Website http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf

Furthermore, Chapter VI Resources Element of the County of Orange's General Plan[1] identifies energy related programs and plans such as: Energy Management, Energy Shortage, Management Plan, and Energy Education. These plans and programs will not be affected by the proposed construction of the detention basin. The result of this project will not conflict with or obstruct local plans for renewable energy or energy efficiency.

2.7 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.	☐	☐	☒	☐
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 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?	☐	☒	☐	☐

[1] County of Orange, General Plan. Chapter VI Resources Element (2013). Accessed July 16, 2019. Website https://www.ocgov.com/civicax/filebank/blobdload.aspx?blobid=40235

2.7.1 CEQA Significance Determination for Geology and Soils

The potential for the Build Alternative to result in impacts related to geology and soils was assessed from the County of Orange General Plan (2013), California Department of Conservation Geologic Hazards Map (2015), and a Geotechnical Design Report (April 2019) prepared by Caltrans District 12's Office of Geotechnical Design South.

a) i) Less than significant impact. According to the Alquist-Priolo Earthquake Fault Zone map[1], the proposed site is within a zone of required investigation as established by the Alquist-Priolo Earthquake Fault Zoning Act. The "Evaluation of Fault Rupture Potential for Brea Canyon Culvert, Bridge 55-0602K in Orange County" report, dated July 10, 2015 gives a value of 2.5 feet of right-lateral offset in the worst-case scenario of a rupture along the Whittier Fault in this area. The proposed project will not be constructing any residential, offices, or buildings that will be occupied by personnel. Given the project's scope and facilities to be constructed, the impact will be less than significant, therefore no mitigation will be required.

a) ii, iii, iv) Less than significant impact. According to the Earthquake Shaking Potential for California Map (2016), the southern portion of Orange County is within a regional classification that experiences lower levels of shaking less frequently and the northern portion experiences increased intensity in shaking and frequency. The project limits are within the Elsinore Fault Zone and fault system. The project limits are located near the Whittier Fault, which is within the La Habra and Yorba Linda quadrangle. Liquefaction and Landslide zones identified in the Earthquake Zones of Required Investigation, Yorba Linda Quadrangle[2] are not included within the project limits. However, these zones are adjacent and within close proximity to the project. Given the project's scope and facilities to be constructed, the impact will be less than significant. The proposed project will not increase the exposure of people to substantial adverse effects resulting in risk of loss, injury, or death that involves strong seismic ground shaking, liquefaction, or ground failure. No mitigation is required.

In addition, with implementation of Project Feature PF-GEO-1 any impacts would be minimized to less than significant impact.

- **PF-GEO-1 Caltrans Standard Specifications 48-2.02. B and Section 19 Earthwork General**: The project will comply with the most current Caltrans procedures and design criteria regarding seismic design to mitigate any adverse effects related to seismic ground shaking. Earthwork will be performed in accordance with Caltrans Standard Specifications, Section 19, which require standardized measures related to compacted fill, over-excavation, and re-compaction, among other requirements. Moreover, Caltrans Highway Design Manual (HDM) Topic 113, requires the project engineer to review a Geotechnical

[1] California Geological Survey. 2018, Official Maps of Earthquake Fault Zones: Web Service of Official Maps of Alquist-Priolo Earthquake Fault Zones, Sacramento, CA. Department of Conservation, California Geological Survey. http://maps.conservation.ca.gov/cgs/informationwarehouse/ (accessed July 2, 2019)

[2] California Geological Survey (2015). Earthquake Zones of Required Investigation, Yorba Linda Quadrangle. Accessed July 2, 2019. Website http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/YORBA_LINDA_EZRIM.pdf

Design Report, if any, to ascertain the scope of geotechnical involvement for a project.

b) Less than significant impact.

Construction of the proposed project will require soil excavation and removal of topsoil. The existing topsoil at the project site is underlain by artificial fill to depths ranging from 5 to 9 feet. This artificial fill is logged as stiff to hard sandy silt with clay and gravel[1]. In addition, this soil is classified as CL under the Unified Soil Classification System, which is depicted as inorganic clays of low to medium plasticity. Thus, the opportunity for rich organic matter in this topsoil is very limited. Excavated soil in construction areas would be exposed resulting in increased potential for soil erosion during construction compared to existing conditions. During a storm event, erosion could occur at an accelerated rate due to the exposure of soils during grading activities. During all construction activities for the Build Alternative, the construction contractor would be required to adhere to the requirements of the General Construction Permit and to implement erosion and sediment control BMPs specifically identified in the project Storm Water Pollution Prevention Plan to keep sediment from moving off site into receiving waters and impacting water quality in those waters during construction. During operation, an increase in impervious surface can increase stormwater runoff volume and velocity and lead to downstream erosion. With implementation of Best Management Practices during construction and operation of the Build Alternative, potential soil erosion or topsoil loss impacts would be less than significant. Implementing Best Management Practices (BMPs) are standard for all Caltrans projects and required for the General Construction Permit. No mitigation is required.

c, d) No impact. The project limits are not located on a geologic unit or soil that is unstable or that would become unstable as a result of the project. The Caltrans Geotechnical Design Report[8] suggests that the proposed 15 to 20-foot deep cuts with 4:1 (H:V) and 2:1 (H:V) slope ratios are expected to be grossly stable under static, sudden drawdown and seismic conditions. No remedial grading is required. In addition, percolation tests were not conducted since the bedrock encountered in the boring investigation is expected to have relatively low permeability due to presence of siltstone and claystone layers. After construction of the project, there will be no creation of substantial risks to life or property other than the detention basin itself. Therefore, there will be no impact regarding unstable geologic unit or soils nor expansive soils. No mitigation is required.

e) No impact. There is no formal use of the project site as it currently exists. The project limits are within the property of the State of California. There are no developments, no buildings, and no designated use of the project site as it is now. The existing subsurface soil consists of bedrock and siltstone and claystone layers. As identified in the above-mentioned geotechnical design report, there is low permeability in the project location. Due to the lack of septic tanks, or alternative waste water disposal systems there will be no impact to these resources. No mitigation is required.

f) Less than significant with mitigation incorporated. From the Paleontological Identification and Evaluation Report (PIR/PER) (July 2019), the geologic mapping, see Figure 2.7-1, shows that the project area contains Young Alluvial Fan Deposits, Unit 3 and the Puente Formation, Yorba Member below a depth of 10 feet, which are considered to be

[1] Geotechnical Design Report (GDR), Caltrans Office of Geotechnical Design South (OGDS), Branch C. April 22, 2019.

geological units with high paleontological sensitivity. The Geotechnical Design Report (April 2019) indicated that between that artificial fill range from depths 5 to 9 feet. The Build Alternative to construct the detention basin calls for excavation and soil disturbance to depths of up to 20 feet. Table 2.7-1 shows the depths and the level of paleontological sensitivity for the resource involved. Thus, with excavation to depths of 20 feet, the potential to impact the Young Alluvial Fan Deposits, Unit 3 and the Puente Formation, Yorba Member is likely. Therefore, the Build Alternative has the potential to impact scientifically significant, nonrenewable paleontological resources

Table 2-1 Paleontological Sensitivity

	Depth Range	Paleontological Sensitivity
Artificial Fill	5 to 9 feet	None
Young Alluvial Fan Deposits, Unit 3	Between surface and 10 feet	Low
Puente Formation, Yorba Member	Below 10 feet	High

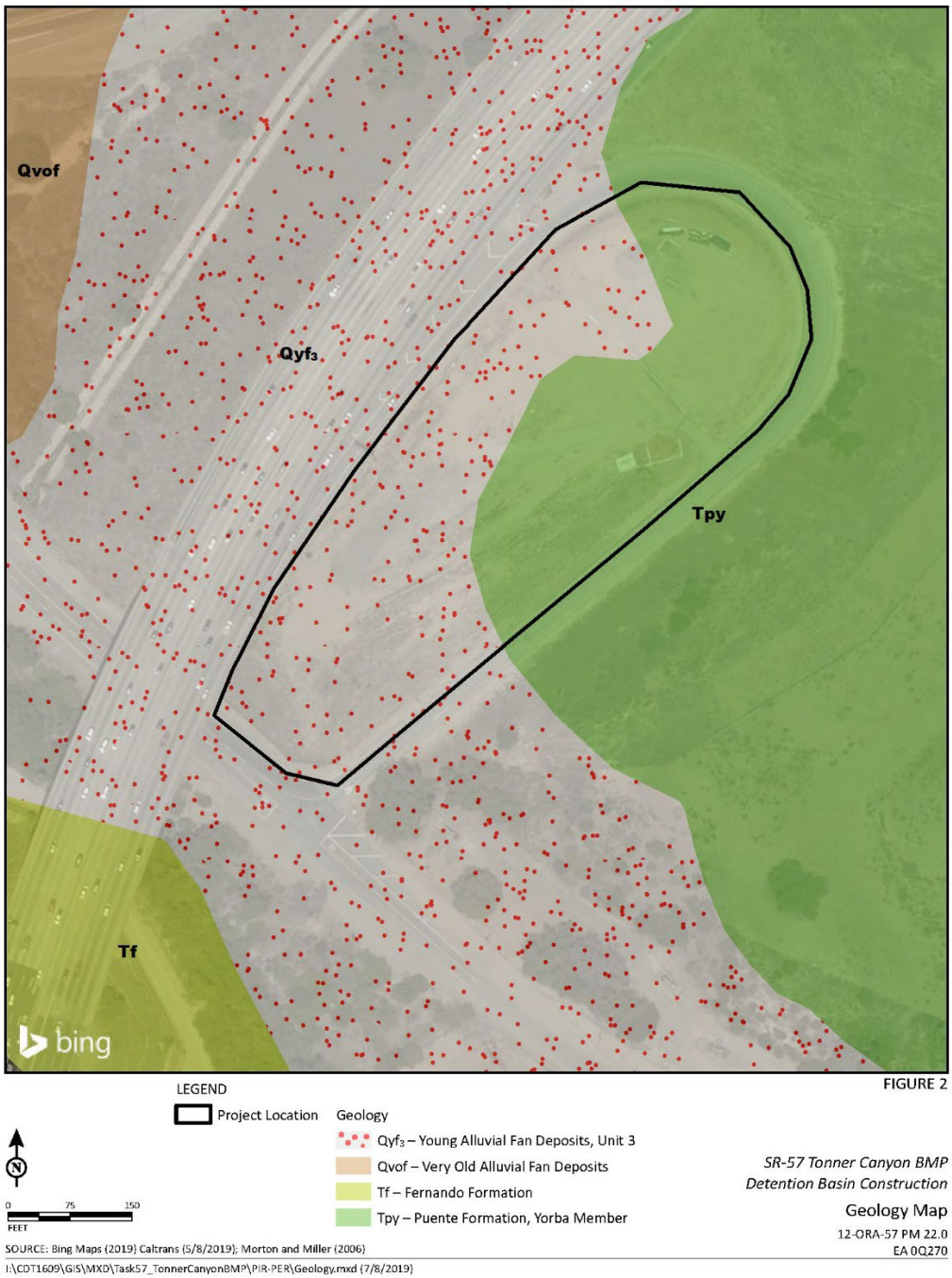
With the implementation of measure PAL-1 that would require the preparation and implementation of a Paleontological Mitigation Plan and Report (PMP/PMR), any impacts would be mitigated to less than significant. The PMP/PMR will follow the guidelines contained in the Caltrans Standard Environmental Reference, Environmental Handbook, Volume 1, Chapter 8 – Paleontology.

- **PAL-1 Caltrans Standard Special Provision Section 14-7.04: Paleontological Mitigation Plan.** Prior to construction activities, the California Department of Transportation (Caltrans) would ensure that a Paleontological Mitigation Plan (PMP) is prepared and adhered to during construction of the project. The PMP would include, but not be limited to, the following:
    - A preconstruction field survey in areas identified as having a high paleontological sensitivity after vegetation and any paving is removed, followed by salvage of any observed surface paleontological resources prior to the beginning of additional grading.
    - Attendance at the pregrade meeting by a qualified paleontologist or representative. At this meeting, the paleontologist would explain the likelihood for encountering paleontological resources, what resources may be discovered, and the methods of recovery that would be employed.
    - During construction excavation, a qualified vertebrate paleontological monitor would initially be present on a full-time basis whenever excavation would occur within the sediments that have a high paleontological sensitivity rating and on a spot-check basis for sediments that have a low sensitivity rating. Monitoring may be reduced to a part-time basis if no resources are being discovered in sediments with a high

sensitivity rating (monitoring reductions, when they occur, would be determined by the qualified Principal Paleontologist). The monitor would inspect fresh cuts and/or spoils piles to recover paleontological resources. The monitor would be empowered to temporarily divert construction equipment away from the immediate area of the discovery. The monitor would be equipped to rapidly stabilize and remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, the grading contractor would consider using heavy equipment on site to assist in the removal and collection of large materials.

- Localized concentrations of small (or micro-) vertebrates may be found in all native sediments. Therefore, it is recommended that these native sediments occasionally be spot-screened on site through one-eighth to one-twentieth-inch mesh screens to determine whether microfossils are present. If microfossils are encountered, sediment samples (up to 3 cubic yards, or 6,000 pounds) would be collected and processed through one-twentieth-inch mesh screens to recover additional fossils.
- Recovered specimens would be prepared to the point of identification and permanent preservation. This includes the sorting of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume and cost of storage for the repository, and the addition of approved chemical hardeners/stabilizers to fragile specimens.
- Specimens would be identified to the lowest taxonomic level possible and curated into an institutional repository with retrievable storage. The repository institutions usually charge a one-time fee based on volume, so removing surplus sediment is important. The repository institution may be a local museum or university that has a curator who can retrieve the specimens upon request. A draft curation agreement would be established with an approved curation facility prior to the initiation of any paleontological monitoring.
- Preparation and submittal of the Paleontological Mitigation Report (PMR) documenting completion of the PMP.

Figure 2-1 Project Area Geology Map



Source: PIR/PER, LSA Associations, Inc. (July 2019)

In addition to mitigation measure **PAL-1**, Project Feature PF-PAL-1 would also be implemented as part of this project to further minimize impacts, if any.

- **PF-PAL-1 Caltrans Standard Specification 14-7.03:** If unanticipated paleontological resources are discovered all work within 60 feet of the discovery must cease and the construction resident engineer must be notified. Work cannot continue near the discovery until authorized.

2.8 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?	☐	☐	☒	☐

2.8.1 CEQA Significance Determinations for Greenhouse Gas Emissions

The potential for the Build Alternative to result in adverse impacts related to Greenhouse Gas Emissions is assessed in the following discussion.

a) Less than significant impact.

Science[1] indicates an aggressive future 2050 target is needed to lessen the potential impacts of global temperature rise. To date, however, there is no general state, federal, or international definition that describes what level of GHG emissions from an individual project would be considered an effect related to a physical change as defined by the CEQA Guidelines Section 15358 (b). In other words, analysis of an individual project's emissions will not result in determination of specific changes to wildfire cycles, changes in precipitation, number of extreme heat days, or other climate effects that can be directly attributed to the proposed project. Because CO2 emissions represent the greatest percentage of GHG emissions, it has been selected as a proxy for potential climate change impacts generally expected to occur

CEQA Guidelines Section 15064.4 states that when assessing the significance of impacts from GHG emissions on the environment, a lead agency should consider, among other factors, the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting. While comparing future build to future no-build conditions may be useful in determining significance and in establishing the extent of project-level measures to reduce GHG emissions from the project, CEQA and the CEQA Guidelines remain focused on the comparison of future conditions with the project compared to existing conditions.

EO B-30-15 (April 2015) established an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure that California meets its

[1] The Intergovernmental Panel on Climate Change (Climate Change 2014 Synthesis Report Summary for Policymakers) has identified limiting global warming to 2 degrees Celsius (35.6 degrees Fahrenheit) or less by 2050 as necessary to avoid potentially catastrophic climate change impacts, and remaining below this threshold requires accelerated reductions of GHG emissions.

target of reducing GHG emissions to 80 percent below 1990 levels by 2050. As a state agency, Caltrans is subject to this EO and supporting legislation. While individual projects are not required to meet the aggressive 2050 reduction targets, current professional CEQA practice and important court cases[1] in 2014 and 2015 advocate for demonstrating substantial progress toward assisting the state achieve these goals. Caltrans will use direction outlined in California legislation and EOs to inform its decision making for project-level CEQA significance determinations for projects on the SHS.

Construction of the treatment BMP does not increase the capacity of the facility nor the capacity and intensity of use of SR-57. The project in itself will not directly or indirectly generate greenhouse gas emissions that will significantly impact the environment. However, during the construction of the project there will be temporary greenhouse gas emissions generated. After construction, the detention basin in itself will not generate any greenhouse gas emissions. See Chapter 3 and Appendix F for the discussion on temporary construction greenhouse gas emissions and the results of the greenhouse gas emissions modeling. No mitigation required.

b) Less than significant impact.

The proposed project in itself does not conflict with any known applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gasses. The detention basin is not a facility that will directly generate emissions, nor will it provide means for increased capacity, thus it will not impede on any plan, policy, or regulations that seek to reduce greenhouse gas emissions. The temporary generation of construction greenhouse gas emissions does not conflict with an applicable plan, policy, or regulation for the purpose of reducing greenhouse gas emissions. No mitigation required.

With implementation of the minimization measures below, when feasible, any impacts would be minimized to less than significant impact.

- **GHG-1** Alternative Fuels such as renewable diesel should be used for construction equipment
- **GHG-2** Limit Idling to 5 minutes for delivery and dump trucks and other diesel-powered equipment
- **GHG-3** Schedule truck trips outside of peak morning and evening commute hours
- **GHG-4** Reduce construction waste and maximize the use of recycled materials (reduces consumption of raw materials, reduces landfill waste, and encourage cost savings

[1] Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farming (2015) 224 Cal.App.4th 1105 (CBD vs. CDFW; also known as the “Newhall Ranch” case; Cleveland National Forest Foundation v. San Diego Association of Governments, 180 Cal.Rptr.3d 548 (Cal. Ct. App. 2014)

- **GHG-5:** Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.

2.9 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?	☐	☐	☐	☒

2.9.1 CEQA Significance Determinations for Hazards and Hazardous Materials

The potential for the Build Alternative to result in adverse impacts related to Hazards and Hazardous Materials is assessed in the following discussion.

a) No impact. The construction of the detention basin will require large amounts of excavation and for certain amounts of soil to be hauled off-site. The subsurface Site Investigation (SI) indicated that the soil contains low levels of Total Petroleum Hydrocarbon (TPH) and non-hazardous levels of Aerially Deposited Lead (ADL)[1]. Since the soil from

[1] Site Investigation Report. Geocon Consultants, Inc. Geocon Project No.: E8991-02-34. April 9, 2019

excavation will be hauled off-site during construction, there will be no routine transport, use, or disposal of hazardous materials. Once construction is completed, there are no plans to routinely transport, use, or dispose of hazardous materials. During the operation of the detention basin, occasionally the basin will need to be cleaned as sediment and runoff materials may collect and accumulate reducing the capacity of the detention basin. This cleaning activity may involve transportation of contaminated and/or non-contaminated sediment and runoff materials. However, if there are contaminated hazardous materials that accumulated in the basin sediment, the materials were not created, but rather an accumulation of the existing conditions. Thus, no new permanent hazardous waste/material impacts (direct or indirect) beyond existing conditions related to hazardous materials are anticipated.

Therefore, impacts to the public or environment through the routine transport, use, or disposal of hazardous materials during construction of the Build Alternative would be considered as no impact. No mitigation required.

b) Less than significant impact. The existing materials are of non-hazardous levels as indicated in the subsurface Site Investigation (April 2019). The design and operation of the detention basin is to capture stormwater runoff and treat the water to be discharged. Therefore, the detention basin will have no impact and will not create a significant hazard by involving the release of hazardous materials in the environment. No mitigation required.

The conducted subsurface Site Investigation (SI) report dated April 9, 2019, prepared by Geocon Consultants, Inc., soil at the project site might be impacted by low level of Total Petroleum Hydrocarbons (TPH). An appropriate non-standard Special Provisions (nSSP) will be prepared by the Environmental Engineering branch during the PS & E stage in order to address the Health & Safety and proper handling of the potential discovered TPH impacted soil during the construction work. As a result, minimization measure HAZ-1 will be considered for this project.

Implementation of HAZ-1 will minimize impacts associated with unknown hazardous materials.

- **HAZ-1:** During construction, the construction contractor will monitor soil excavation for visible soil staining, odor, and the possible presence of TPH impacted soil. If the potential contaminated soil is identified during project construction activities, the construction contractor will be required to stockpile the soil separately and have it sampled and tested by an environmental professional. If the test results indicated that the soil contains TPH, then, the impacted soil will be disposed of to an appropriate disposal facility.

c) No impact. There are no schools or education institutions with 0.25 miles of the project location. The closest school, Brea Olinda High School, is approximately 0.37 miles (2,000 feet) south of the project location. Therefore, the project will have no impact and will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school. No mitigation required.

d) No impact. According to the Department of Toxic Substances Control (DTSC) EnviroStor[1] database there is one active hazardous waste sites within 3 miles of the project. The various other sites and facilities are non-active as shown on the EnviroStor database. The project is not located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and will not create a significant hazard to the public or the environment. No mitigation required.

e) No impact. The proposed project is not within 2 miles of a public airport or a private air strip, nor on any designated airport land use plan area. Therefore, the project will not result in a safety hazard or excessive noise for people residing or working in the project area. No mitigation required.

f) Less than significant impact. The project location is within an off-ramp loop where vehicles and pedestrians are not permitted to travel. This location is not on any roadways, travel throughways, or any designated emergency refuge areas. There are no known emergency evacuation or emergency response plans that this project will impair the implementation of or physically interfere with. In addition, because the project is not on any travel throughways there is no potential to interfere with any future emergency response or emergency evacuation plan. However, during construction temporary and intermittent closure of the off-ramp may be necessary. Project feature PF-TRA-1 will include developing a Transportation Management Plan (TMP) that would reduce effects consisting of alternate routes and detours for emergency vehicles during construction activities. Therefore, impacts from temporary closures and construction would be considered less than significant. No mitigation required.

g) No impact. Identified in the County of Orange and City of Brea's general plans, the project location is identified as a Very High Fire Hazard Area. During construction of the project, construction will not involve activities that directly generate sparks, sources of intense heat, smoke, explosions, or fire. In addition, the vehicles used for construction will pose no increased risk to fire in the area compared to the usual traveling public using the off-ramp and highway. Thus, this project will have no impacts to expose people or structures to significant risk of loss, injury or death involving wildland fires. No mitigation required.

2.10 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 the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒

[1] EnviroStor, Department of Toxic Substances Control. 2019. Website https://www.envirostor.dtsc.ca.gov/public/

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
(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?	☐	☐	☐	☒

2.10.1 CEQA Significance Determination for Hydrology and Water Quality

The potential for the Build Alternative to adversely impact hydrology and water quality was assessed in the Water Quality Technical Memorandum (2019), *Local Hydraulic Study (LHS) Memo (2019)*, and in the Floodplain Encroachment Report Summary (FER) (2019). The following discussion is based on these reports. The proposed project is located within the jurisdiction of the Santa Ana Regional Water Quality Control Board in Orange County. Facility runoff discharges to Brea Creek, a tributary to Coyote Creek, and ultimately to the Lower San Gabriel River watershed of the Los Angeles Regional Water Quality Control Board.

a) Less Than Significant Impact.

Construction

The proposed project will construct a treatment Best Management Practice (BMP)in the form of a Detention Basin within the northbound SR 57 offramp to Tonner Canyon road in unincorporated Orange County. The proposed project is anticipated to have a Disturbed Soil Area (DSA) of 5.18 acres. This accounts for the detention basin footprint, maintenance road and landscaping.

Potential temporary impacts to water quality anticipated during construction include possible sediment transport caused by disturbed soil areas created by construction activities such as clearing, grubbing, excavation, and grading to construct the detention basin, temporary roadways to access the project site, and trenching for the proposed drainage connections. The project can also have temporary water quality impacts from minor concrete waste, trash from workers and construction waste, petroleum products from construction equipment

and/or vehicles, sanitary wastes from portable toilets and any other chemicals used for construction such as coolants used for equipment and/or concrete curing compounds. The area surrounding the proposed project location has historically been used for oil production (oil fields). A preliminary investigation was conducted to evaluate the soils at the project site for Total Petroleum Hydrocarbons (TPH), Volatile Organic Compounds (VOCs), Metals and Aerially Deposited Lead (ADL). The investigation results will be used to select the proper disposal site of the excavated soils for the detention basin.

The Build Alternative will be required to comply with the State Water Resource Control Board (SWRCB) NPDES Construction General Permit and prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) and determine a Risk Level based on potential erosion and transport to receiving waters. The SWPPP will identify temporary Best Management Practices (BMPs) to address the potential temporary impacts to water quality (PF-WQ-3). The BMPs identified in the project's SWPPP will include measures such as temporary soil stabilization measures, linear sediment barriers (i.e. silt fence, gravel bag berms, fiber rolls), and construction site waste management (i.e. concrete washout, construction materials storage, litter/ waste management).

Operation

The proposed project will construct a post construction treatment Best Management Practice (BMP)in the form of a Detention Basin within the northbound SR 57 offramp to Tonner Canyon road. The construction of the detention basin will provide long-term water quality benefits to address previously untreated highway runoff as well as addressing the San Gabriel River-Coyote Creek Watershed metals (Cu, Pb, Z) and selenium TMDL as identified in Attachment IV of the Caltrans Statewide NPDES Permit (Order No. 2012-0011-DWQ as amended in Order WQ 2014-0077-DWQ). The construction of this detention basin will be claimed as a Compliance Unit (CU) credit to meet Caltrans NPDES permit requirements for achieving the TMDL compliance strategy

With the implementation of the Caltrans NPDES Permit, the General NPDES Permit for Construction Activities, a Storm Water Pollution Prevention Plan (SWPPP), temporary and permanent BMPs, and Caltrans' Standard Project Features, the project will not substantially degrade water quality resulting in a less than significant impact on water quality (PF-WQ1, PF-WQ-2, PF-WQ-3, PF-WQ-4, PF-WQ-5). No mitigation required.

b) No impact. It is anticipated that the build alternative will not encounter groundwater during construction. The project will not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Therefore, there will be no impact to groundwater supplies, groundwater recharge, or groundwater management. No mitigation required.

c) The project will not substantially alter the drainage pattern of the site or area nor will there be an alteration of a stream or river.

> **c) i) Less than significant impact.** Potential temporary impacts to water quality anticipated during construction for the Build Alternative include possible sediment transport caused by disturbed soil areas created by construction activities such as excavation and trenching, soil compaction, cut and fill activities, grading, demolition,

and bridge construction. Any erosion and siltation that can occur during construction will be from Disturbed Soil Areas (DSA) created by the project's excavation/grading. The potential erosion/siltation will be addressed by the installation and implementation of temporary Best Management Practices (BMPs) identified in the project's Storm Water Pollution Prevention Plan (SWPPP) (PF-WQ-3). Post construction erosion/ siltation is addressed by the installation of permanent soil stabilization BMPs (PF-WQ-4). Implementation of the above mentioned BMPs will have a less than significant impact on erosion or siltation. No mitigation required.

c) ii) Less than significant impact. The project will not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. The project does not increase the impervious surface. Thus, the Build Alternative will have a less than significant impact on surface runoff which would result in flooding. No mitigation required.

c) iii) Less than significant impact. The proposed project will not exceed the capacity of the existing or planned storm water drainage systems. As indicated previously, the project may contribute additional sources of pollutants during construction. Potential temporary impacts to water quality that can be anticipated during construction include sediments from grading and excavation operations, trash from workers and construction waste, petroleum products from construction equipment and/or vehicles, concrete waste, sanitary wastes from portable toilets and any other chemicals used for construction such as coolants used for equipment and/or concrete curing compounds.

The project may contribute additional sources of pollutants upon completion of construction. Pollutants typically generated during the operation of a transportation facility include sediment/ turbidity, nutrients, trash and debris, bacteria and viruses, oxygen demanding substances, organic compounds, oil and grease, pesticides and metals. With the construction of the detention basin as the post construction Treatment BMP, the project will not provide additional sources of polluted runoff. The project will incorporate Design Pollution Prevention (source control) BMPs and evaluate post construction treatment BMPs as required by the Caltrans NPDES permit to ensure that adequate measures are included to minimize any potential long-term impacts.

With the implementation of a SWPPP and selected temporary BMPs during construction (PF-WQ-3) as well as evaluating and implementing post construction BMP strategies (PF-WQ-4 and PF-WQ-5), the project will not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide additional sources of polluted runoff. With implementation of the above mentioned BMPs and project features the Build Alternative will have a less than significant impact on creating or contributing runoff water that would exceed existing capacity of planned stormwater drainage systems. No mitigation required.

c) iv) No Impact. All flood flows, if any, would be directed to the same downstream storm drain systems through the detention basin. The Build Alternative falls outside of any floodplain hazard per Federal Emergency Management Agency (FEMA) number 06059C0034J and 06059C0055J. This indicates that the Build Alternative is

in an Area of Minimal Flood Hazard, identified as Zone X. Therefore, there is no impacts to impede or redirect flood flows. No mitigation required.

d) No Impact. The Build Alternative lies within Zone X of the floodplain, which indicates that the area is determined to be outside the 0.2% annual change floodplain. Zone X is also noted as the Area of minimal Flood Hazard. As indicated in the LHS/FER, the project limits are not within a regulatory floodway, not within the 100-year flood event area, and has been given an assessment of Level of Risk as Low. Therefore, there are no impacts related to project inundation. No mitigation required.

e) No impact. The project will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The project will comply with the Statewide Construction General Permit for temporary impacts to water quality (PF-WQ-2) and the Caltrans Statewide NPDES Storm Water Permit (PF-WQ-1). Thus, there are no impacts to conflict or obstruct with water quality control plans or sustainable groundwater management plans. No mitigation required.

Water quality project features discussed above are part of Caltrans' Standard Specifications for all projects. These mentioned project features are listed below and are part of the Environmental Commitment Records.

PF-WQ-1 Caltrans Standard Specification 13-1.01D (2)-Regulatory Requirements:

The project will comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for the State of California Department of Transportation, Order No. 2012-0011-DWQ, NPDES No. CAS000003 and any subsequent permits in effect at the time of construction.

PF-WQ-2 Caltrans Standard Specification 13-3.01D (2)-Regulatory Requirements:

The project will comply 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, NPDES General Permit No. CAS000002 and any subsequent permits in effect at the time of construction.

PF-WQ-3 Caltrans Standard Specification 13-3 Storm Water Pollution Prevention Plan:

The project will comply with the Construction General Permit by preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate Risk Level. The SWPPP will identify the sources of pollutants that may affect the quality of Storm water and include BMPs to control the pollutants, such as: sediment control, catch basin inlet protection, construction materials management, and non-storm water BMPs. All work must conform to the Construction Site BMP requirements specified in the latest edition of the Storm Water Quality Handbooks: Construction Site Best Management Practices Manual to control and minimize the impacts of construction and construction related activities, material and pollutants on the watershed. These include, but are not limited to temporary sediment control, temporary soil

stabilization, scheduling, waste management, materials handling, and other non-storm water BMPs

PF-WQ-4

Design Pollution Prevention BMPs will be implemented such as preservation of existing vegetation, slow/surface protection systems (permanent soil stabilization), concentrated flow conveyance systems such as ditches, berms, dikes and swales, overside drains, flared end sections, and outlet protect/velocity dissipation devices.

PF-WQ-5

Caltrans approved treatment BMPs will be implemented consistent with the requirements of NPDES permit and Waste Discharge Requirements for the State of California, Department of Transportation, Order No. 2012-001-DWQ, NPDES No. CA200003 and any subsequent permits in effect at the time of construction.

2.11 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?	☐	☐	☐	☒

2.11.1 CEQA Significance Determinations for Land Use and Planning

The potential for the Build Alternative to result in adverse impacts related to land use and planning is assessed in the following discussions.

a) No Impact. The project limits consist of an existing highway and corresponding off-ramp. The project will be constructed within the existing State Right-of-Way. Under the City of Brea's General Plan, the areas adjacent to the project are designated as hillside residential and natural open space land uses. Under the Orange County General Plan, the hillside residential area is designated as suburban residential land use. However, implementation of the Build Alternative will not physically divide an established community because the project is within existing State Right-of-Way. In addition, there is no existing established community in the immediate vicinity of the project. Therefore, there will be no impact that will physically divide an established community. No mitigation would be required.

b) No Impact. The implementation of the Build Alternative will not change the adjacent or surrounding land use from its designation in the general plans of the City of Brea and Orange County. The detention basin serves the purpose to treat storm water runoff from the highway. The project location is in close proximity to gnatcatcher habitat, but the constructed project of a detention basin will not convert any lands for other purposes, remove any trees,

construct any urban development, restrict or block access to the open space and adjacent roads and communities, degrade or restrict any recreational activity, or independently decrease air quality or noise levels from the detention basin. Thus, there will be no significant environmental impact caused by a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

2.12 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?	☐	☐	☐	☒

2.12.1 CEQA Significance Determinations for Mineral Resources

The potential for the Build Alternative to result in adverse impacts related to mineral resources was assessed based on information from the Orange County General Plan Resources Element (2013).

a) and b) No Impact. The Resources Element of the Orange County General Plan[1] identifies significant construction aggregate resources are available in undisclosed portions of San Juan Creek, Trabuco Canyon, and the Santa Ana River. A review of the Surface Mining and Reclamation Act of 1975 maps[2] indicates that there are no aggregate production areas in the Study Area. In addition, Figure VI-3 in the Resources Element of the Orange County General Plan does not display any mineral resource areas near the project limits. The Build Alternative is confined within the off-ramp loop where no mineral resources exist. Therefore, there would be no impact to mineral resources from the Build Alternative. No mitigation would be required.

1 County of Orange General Plan. 2013. Chapter VI. Resources Element. Website: https://www.ocgov.com/civicax/filebank/blobdload.aspx?blobid=40235 (accessed March 14, 2019)

2 California Geological Survey. 2012. Aggregate Sustainability in California. Website: https://www.conservation.ca.gov/cgs/Documents/Publications/MS_52_California_Aggregates_Map_201807.pdf (accessed March 14, 2019).

2.13 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?	☐	☐	☐	☒

2.13.1 CEQA Significance Determinations for Noise

The potential for the Build Alternative to result in significant noise impacts is discussed below:

a) No impact. Construction of the detention basin will generate temporary construction-related noise. However, construction of the detention basin will be in compliance with Caltrans Standard Specifications Section 14-8.02, as outlined in Project Feature PF-N-1. Therefore, there will be no impact as the noise levels will not be in excess of standards established. No mitigation required.

- **PF-N-1: Caltrans Standard Specification Section 14-8:** Do not exceed 86 dBA L_{max} at 50ft from the job site from 9:00 p.m. to 6:00 a.m.

b) No impact. Construction of the detention basin will involve activities that generate ground borne vibration and noise. Vibration levels from jackhammers, vibratory rollers, bulldozers, and other construction equipment that may produce vibration levels would potentially be perceptible by adjacent residents and would result in a temporary annoyance**.** However, the location of the project is not within a vicinity with residential or commercial businesses and the temporary impact will not be long-term. Therefore, there is no impact from vibration sensitive receptors. No mitigation required.

c) No impact. The project is not located within the vicinity of a private airstrip, airport land use plan, nor within two miles of a public airport or public use airport. No impact would occur. No mitigation required.

2.14 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?	☐	☐	☐	☒

2.14.1 CEQA Significance Determinations for Population and Housing

The potential for the Build Alternative to result in adverse impacts related to population and housing is assessed the following discussion.

a) No Impact. The proposed project will construct a detention basin to treat stormwater runoff from State Route 57. No buildings, businesses, or homes will be constructed nor, will there be any extension of roads or infrastructure for public use. Therefore, the project will not induce substantial unplanned population growth in an area, either directly or indirectly. No mitigation required.

b) No Impact. The proposed project will not require right-of-way acquisitions. The surrounding adjacent area of the project location is zoned for Suburban Residential[1]. However, no residential properties exist within the immediate vicinity. Therefore, there will be no impact to displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. No mitigation required.

2.15 Public Services

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i. Fire protection?	☐	☐	☒	☐
ii. Police protection?	☐	☐	☒	☐

[1] Land Use Element Map, Orange County General Plan. March 10, 2015. Accessed July 3, 2019. Website https://www.ocgov.com/civicax/filebank/blobdload.aspx?blobid=58442

iii.	Schools?	☐	☐	☐	☒
iv.	Parks?	☐	☐	☐	☒
v.	Other public facilities?	☐	☐	☐	☒

2.15.1 CEQA Significance Determinations for Public Services

The potential for the Build Alternative to result in adverse impacts related to Public Services is assessed in the following discussions.

a) i) Fire Protection—Less than significant impact.

The proposed project will not permanently impact acceptable service ratios, response times or other performance objectives for fire protection. Due to the nature of construction activities shoulders and off-ramp of the highway facility may be temporarily closed for construction. Thus, fire protection services may be temporarily impacted. However, a Transportation Management Plan (TMP) will be prepared to minimize construction activity-related delays by the effective application of traditional traffic handling practices. As part of the TMP, Caltrans District 12 Orange County office would coordinate with emergency response providers to ensure the project does not interfere with emergency response times. Therefore, no mitigation is required.

a) ii) Police Protection—Less than significant impact.

The proposed project will not permanently impact acceptable service ratios, response times or other performance objectives for police protection Due to the nature of construction activities shoulders and off-ramp of the highway facility may be temporarily closed for construction. However, a Transportation Management Plan (TMP) will be prepared to minimize construction activity-related delays by the effective application of traditional traffic handling practices. As part of the TMP, Caltrans District 12 Orange County office would coordinate with emergency response providers to ensure the project does not interfere with emergency response times. Therefore, no mitigation is required.

a) iii) Schools—No Impact

There are no schools in the project area. Therefore, no schools will be impacted. No mitigation is required.

a) iv) Parks—No impact

There are no parks in the project area. Therefore, no parks will be impacted. No mitigation is required.

a) v) Other Public Facilities—No impact

There are no other public facilities in the project area. Therefore, no other public facilities will be impacted. No mitigation is required.

Additionally, with the implementation of Project Feature PF-TRA-1 from the Transportation/Traffic section, any impacts will be avoided or minimized to less than significant.

2.16 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?	☐	☐	☐	☒

2.16.1 CEQA Significance Determinations for Recreation

The potential for the Build Alternative to result in adverse impacts related to Recreation is assessed in the following discussions.

a) No impact. The Build Alternative would not result in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur. All the construction activities will take place within the Tonner Canyon off-ramp loop where no recreational facilities exist. Therefore, there will be no impact to increased use to existing recreational facilities. No mitigation required.

b) No impact. The proposed detention basin area does not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. No mitigation required.

2.17 Transportation/Traffic

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)? NOTE: While public agencies may immediately apply Section 15064.3 of the updated Guidelines, statewide application is not required until July 1, 2020. In addition, uniform statewide guidance for Caltrans projects is still under development. The PDT may determine the appropriate metric to use to analyze traffic impacts pursuant to section 15064.3(b). Projects for which an NOP will be issued any time after December 28th, 2018 should consider including an analysis of VMT/induced demand if the project has the potential to increase VMT (see page 20 of OPR's updated SB 743 Technical Advisory), particularly if the project will be approved after July 2020.	☐	☐	☐	☒
c) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☒	☐

2.17.1 CEQA Significance Determinations for Transportation/Traffic

The potential for the Build Alternative to result in adverse impacts related to Transportation/Traffic is assessed in the following discussions.

a) No impact. The Build Alternative proposes to construct a treatment BMP in a form of a detention basin within the off-ramp loop. Once construction of the detention basin is complete, there will be no obstruction or conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Therefore, there will be no impact to the above-mentioned resources. No mitigation required.

b) No impact. Under CEQA Guidelines Section 15064.3, subdivision (b), the criteria for analyzing transportation projects are described. However, the Build Alternative proposes to construct a detention basin that is within the off-ramp loop and proposes no improvements or modifications to increase/reduce vehicle miles traveled. Therefore, there would be no impact and no conflict or inconsistency with CEQA Guidelines Section 15064.3, subdivision (b). No mitigation required.

A uniform statewide guidance to evaluate VMT/induced demand for Caltrans projects is currently under development. Section 15064.3 of the updated Guidelines, statewide application is not required until July 1, 2020.

c) No impact. The project proposes to construct a detention basin within the off-ramp loop. There will be no traffic modifications to the mainline or off-ramp that will result in increases to hazards due to a geometric design feature or incompatible uses. During construction, shoulder and one lane closure will be used for dirt removal and other related work activities as all other work will be behind k-rail. If determined during the design phase that a night full-ramp closure is required, detours will be provided before and after the closure. Assuming

the worse-case scenario, there are two anticipated strategies for managing traffic for this project:

- **Ramp shoulder/One lane closure (SR-57/NB)** -- ramp shoulder/one lane closure at northbound SR-57 Tonner Canyon off-ramp loop will keep one lane open throughout the construction period from 6:00 AM to 6:00 PM.

- **Night-time full ramp closure (SR-57/NB)** –complete full night-time ramp and shoulder closure at northbound Tonner Canyon off-ramp loop from 8:00 PM to 6:00 AM

With the potential for the above closures being implemented, implementation of Project Feature PF-TRA-1 to include a Transportation Management Plan (TMP) will provide notifications, detours, and timely closures so that there will be no impact. No mitigation required.

- **PF-TRA-1 Caltrans Standard Specifications Section 12-4 Maintaining Traffic:** The project will include preparation of a Transportation Management Plan (TMP) during the Design (Plans, Specifications, and Estimates (PS&E)) phase. The TMP is an approach for alleviating or minimizing traffic delays by the effective application of traditional traffic handling practices and an innovative combination of various strategies. These strategies include public awareness campaigns, motorist information, incident management, construction methods, demand management, and alternate route planning. The TMP will detail a plan for the umbrella standard specification of 12-4 Maintaining Traffic and any applicable sections (i.e. 12-4.01 General, 12-4.02 Traffic Control Systems, 12-4.03 Falsework Openings 12-4.04 Pedestrian Facilities, etc.).

d) Less than significant impact. As described in the above checklist questions for Public Services, construction of the Build Alternative would result in temporary impacts to traffic circulation that includes emergency services. These impacts would be avoided and/or minimized based on the implementation of the TMP during construction as required in Project Feature PF-TRA-1. The TMP would address requirements for coordination with emergency service providers and accommodation of emergency travel routes and access to, through, and around active construction areas. Once construction is completed, the detention basin will not interfere with the daily traffic operations nor impact circulation for motorists including emergency services. Therefore, impacts are considered less than significant on the access of emergency services. No mitigation required.

2.18 Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

2.18.1 CEQA Significance Determinations for Tribal Cultural Resources

The potential for the Build Alternative to result in adverse impacts related to Tribal Cultural Resource was assessed in the Historic Property Survey Report (July 2019). The discussion below is based on this technical report.

a) and b) No impact. The potential for the Build Alternative to result in impacts to Tribal Cultural Resources was assessed through Native American consultation per Assembly Bill 52 during research for the *Historic Property Survey Report* (July 2019) and accompanying studies. No tribal cultural resources were identified during the consultation process. No tribal cultural resources are listed or eligible for listing in the California Register of Historical Resources that would be impacted by the project. No tribal cultural resources determined significant by the lead agency would be impacted by the project. Therefore, the project will have no impact on tribal cultural resources. No mitigation is required.

2.19 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 relocation or 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) (originally (e)) 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) (originally (g)) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

2.19.1 CEQA Significance Determinations for Utilities and Service Systems

The potential for the Build Alternative to result in adverse impacts related to Utilities and Service Systems is assessed in the following discussions.

a) No impact. The Build Alternative proposes to construct a treatment BMP, in the form of a detention basin, within the NB SR-57 Tonner Canyon off-ramp loop. The detention basin will connect to the existing drainage system. Work on the existing drainage system will involve cutting drainage pipes to insert the detention basin inlet and outlet. The construction of the detention basin does not result in impacting other utility facilities and will not cause any significant environmental effects as mentioned in previous CEQA Checklist questions. The purpose of the detention basin is to treat the stormwater runoff from the highway facility and as a result the discharged water quality is improved and better for the environment. No impacts and no mitigation required.

b) No impact. Use of water during construction of the Build Alternative would be limited to water trucked in for dust control and concrete mixing (if necessary). After construction, water may be trucked in periodically to water the landscape vegetation until the plant material becomes established. Based on the minimal requirements for water for this project, water districts serving the project limits would not necessitate providing new levels or expanded entitlements of sufficient water supply available to serve the Build Alternative and reasonably foreseeable future development during normal, dry, and multiple dry years. Therefore, no impact would occur. No mitigation required.

c) No impact. The Build Alternative would not result in the need for a determination by a wastewater treatment provider that it has adequate capacity to serve the Build Alternative. The construction of the Build Alternative will not increase discharge from the facility, rather it is designed to treat the existing discharge for water quality purposes. Therefore, no impact would occur. No mitigation required.

d) Less than significant impact. During construction of the Build Alternative, waste materials would be collected including vegetation, plant material, and excess soil. The collected waste during construction would be properly disposed of at an existing landfill or be recycled. After construction of the Build Alternative, the detention basin will not generate solid waste, but it will collect the runoff from the highway facilities. From this activity, there may be an accumulation of solid waste that would have been discharged. This solid waste is nominal compared to the total waste disposed of or recycled at recycling facilities and landfills. However, during construction the solid waste generated will primarily consist of soil from excavation. Impacts to the local capacity will be less than significant. No mitigation required.

e) No impact. Waste materials generated during construction and operation of the Build Alternative would be disposed of in accordance with federal, State, and local regulations related to recycling, which would minimize the amount of waste material entering local landfills. There would be no impacts to federal, state, and local management and reduction statutes and regulations related to solid waste No mitigation required.

With implementation of Project Feature PF-TRA-1 from the Transportation/Traffic section, impacts to Utilities and Service Systems will be minimized.

2.20 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 structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

2.20.1 CEQA Significance Determinations for Wildfire

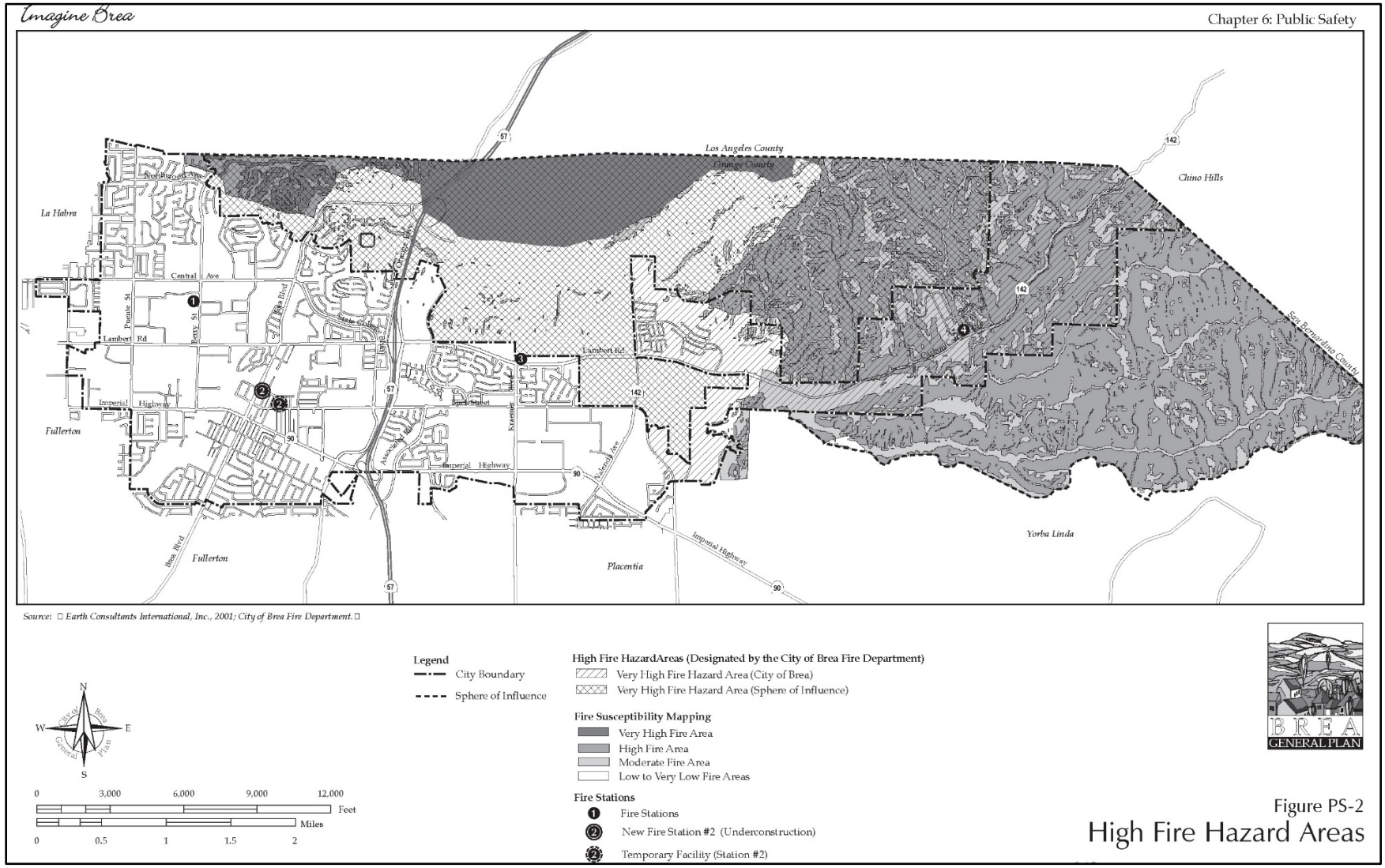
The potential for the Build Alternative to result in adverse impacts related to Wildfire is assessed in the following discussions.

a) No impact. The City of Brea's General Plan (Figure PS-2) incorporates High Fire Hazard Areas designated by the City of Brea Fire Department. Of these High Fire Hazard Areas[1], see Figure 2.20-1 below, the project vicinity can be described as having a Very High Fire Hazard Area. Because the project location is within the unincorporated area of the City of Brea's Sphere of Influence, fire service in this State Responsibility area falls under the Orange County Fire Authority[2]. Given the sensitive area susceptible to fire hazard, the proposed Build Alternative will not impact any emergency response plan or emergency evacuation plan since the detention basin is completely within the off-ramp loop. During construction, the off-ramp loop may include full-time shoulder and right-lane closures with one lane open and/or possibly full nighttime ramp closures. The off-ramp loop will be open to motorists without restrictions during the daytime hours. However, due to the location and nature of the project, there will be no impacts to adopted emergency response plans or emergency evacuation plans. No mitigation required.

[1] General Plan. City of Brea. Adopted August 10, 2003. https://www.ci.brea.ca.us/179/General-Plan (accessed March 12, 2019)

[2] Fire Hazard Severity Zone Maps. Orange County Fire Authority. Website https://www.ocfa.org/AboutUs/Departments/CommunityRiskReductionDirectory/PreFireManagement.aspx#fhszm (accessed August 13, 2019)

Figure 2-2 High Fire Hazard Areas



Source: Figure PS-2, Chapter 6 Public Safety, General Plan (2003), City of Brea. Accessed August 15, 2019

This page intentionally left blank

b) No impact. The Build Alternative proposes to construct a detention basin within the NB SR-57 Tonner Canyon off-ramp loop. The project location consists of dry weeds and vegetation, which may be considered a wildfire fuel source. After completion of construction, the adjacent area will be landscaped with native vegetation, thus replacing portions of the project area consisting of dry weeds with native vegetation. The detention basin does not provide facilities to house occupants. Therefore, there is no impact to project occupants as no occupants will exist. No mitigation required.

c) No impact. The Build Alternative to construct a detention basin will require installation of a maintenance road to service the detention basin. Currently, the land within the off-ramp loop is used as a storage site for Caltrans maintenance crews, see Figure 2.20-2 below. There are no designated maintenance access roads, however the land is currently being used by Caltrans maintenance crews and is previously disturbed. Based on the existing use and access to the off-ramp loop, construction of a maintenance access road will not exacerbate fire risk or result in temporary or ongoing impacts to the environment. No mitigation required.

Figure 2-3 Tonner Canyon off-ramp photo

Source: Google Earth Pro 2019

d) Less than significant impact. The purpose of the treatment detention basin is to allow the facility to treat stormwater runoff from the adjacent highway facility before discharging the water into the existing drainage system. The detention basin will not expose people to downslope or downstream flooding or landslides due to post-fire slope instability or drainage changes. However, the construction of a detention basin is a structure that will now be within an area with very high susceptibility to wildland fires. However, given that a detention basin consists of a concrete structure that is primarily underground the impact to the detention basin would be less than significant. No mitigation required.

2.21 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?	☐	☐	☐	☒

The California Environmental Quality Act (CEQA) requires the analysis of a project's mandatory findings of significance. The analysis of the mandatory findings of significance of the project is based on the findings of the project's impacts on all the required issue areas.

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the 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 to 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 types of 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, and disruption of migration corridors, changes in water quality, and introduction or promotion of predators. This can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act (CEQA) Guidelines, Section 15130 describes when a cumulative impact analysis is warranted 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. Additionally, regarding the project area, see Table 2.21-1 for a list of current and proposed projects in the vicinity.

Table 2-2 Future and Current Projects in Project Area

Rte	Postmile	Description	Improvement	EA	Status	Begin Const.	Completion Date
SR-57	16.2 / 21.1	Highway Replacement Planting	Replacement planting	0F03U	In const.	Mar 2018	Feb 2022
SR-57	19.8 / 22.0	Part of 0R610, 0R630	Median barrier safety lighting	0R620	In project delivery	Nov 2022	May 2024
SR-57	20.3 / 21.6	Lambert Interchange	Reconfigure NB ramps, const of loop	0C110	In const.	May 2019	Jul 2022
SR-57	21.2 / 22.6	Truck climbing lane	Truck climbing lane, realign Tonner Canyon off-ramp	0C120	Preliminary project scoping	May 2026	May 2028

Source: Caltrans 2019, OCTA 2019,

2.21.1 CEQA Significance Determinations for Mandatory Findings of Significance

a) No impact. As discussed throughout the CEQA checklist and under Section 2.4 regarding Biological Resources, there will be no impact on biological resources. The Build Alternative will not degrade the quality of the environment or permanently impact any animal or plant species or associated habitat. No mitigation is required.

b) Less than significant with mitigation. Discussed in Section 2.7 Geology and Soils, the potential to impact a unique paleontological resource or site or unique geologic feature is possible. The Build Alternative location sits on Young Alluvial Fan Deposits and the Puente Formation, Yorba Member, both of which are considered to be geological units with high paleontological sensitivity. The proposed project will undergo excavation activities to depths of up to 20 feet, thus having the potential to significantly impact the paleontological resource. However, implementation of measure PAL-1 will require a PMP/PMR to be prepared to ensure that impacts, if they occur, would be less than significant with mitigation.

c) No impact. As discussed throughout Chapter 2 of this Initial Study, the Build Alternative would not result in environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

This page intentionally left blank

Chapter 3 – Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including 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 component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing GHG emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

3.1 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.

Various efforts have been promulgated at the federal level 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) and Corporate Average Fuel Economy (CAFE) Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the CAFE program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Energy Policy Act of 2005, 109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) the establishment of the Office of Indian Energy Policy and Programs within the Department of Energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

The U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) is responsible for setting GHG emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. Fuel efficiency standards directly influence GHG emissions.

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.

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 ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

EO S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the governor's 2030 and 2050 GHG reduction goals.

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.

SB 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under AB 32.

EO B-16-12 (March 2012) orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

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 ($MMTCO_2e$).[1] 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."

AB 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

Senate Bill 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 travelled, 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.

[1] GHGs differ in how much heat each trap in the atmosphere (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" (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.

Senate Bill 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.

Executive Order 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.

3.2 ENVIRONMENTAL SETTING

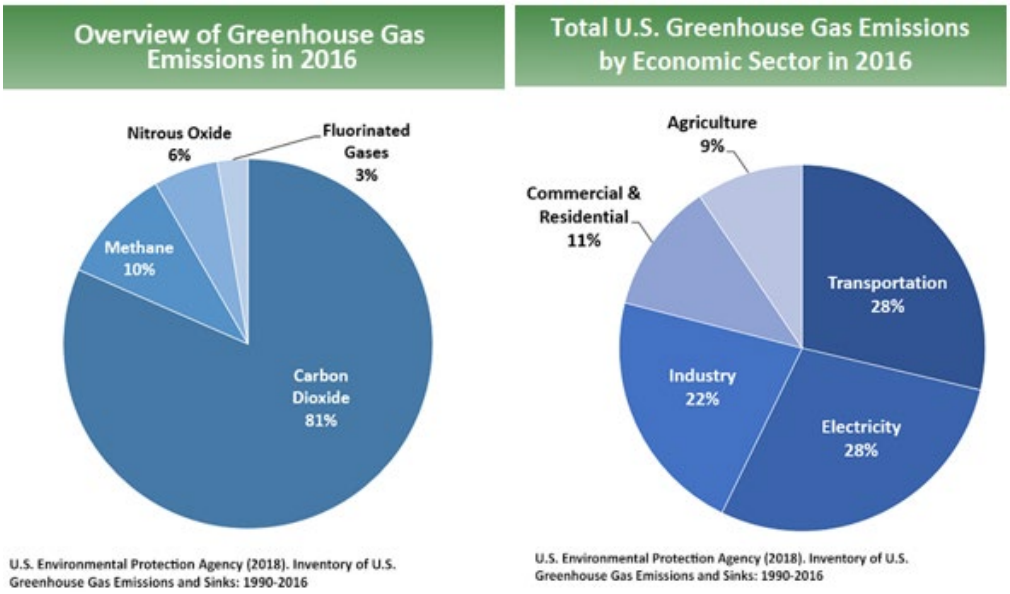
The proposed project is located on SR-57 where the urban area of the City Brea transitions to a less-developed unincorporated area of Orange County up to the Los Angeles County line. Land uses in the project area are designated hillside residential and natural open space. Traffic congestion during peak hours is not uncommon in the project area. The SCAG RTP/SCS guides transportation development in the project area. The Orange County Sustainable Communities Strategy integrates with the SCAG RTP/SCS to address 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.

National GHG Inventory

The U.S. EPA prepares a national GHG inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO_2, CH_4, N_2O, HFCs, perfluorocarbons, SF_6, and nitrogen trifluoride. It also accounts for emissions of CO_2 that are removed from the atmosphere by "sinks" such as forests, vegetation, and soils that uptake and store CO_2 (carbon sequestration). The 1990–2016 inventory found that of 6,511 $MMTCO_2e$ GHG emissions in 2016, 81% consist of CO_2, 10% are CH_4, and 6% are N_2O; the balance consists of fluorinated gases (EPA 2018a). In 2016, GHG emissions from the transportation sector accounted for nearly 28.5% of U.S. GHG emissions.

Figure 3-1 U.S. 2016 Greenhouse Gas Emissions



State GHG Inventory

ARB 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 2019 edition of the GHG emissions inventory found total California emissions of 424.1 $MMTCO_2e$ for 2017, with the transportation sector responsible for 41% of total GHGs. It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (ARB 2019a).

Figure 3-2 California 2017 Greenhouse Gas Emissions

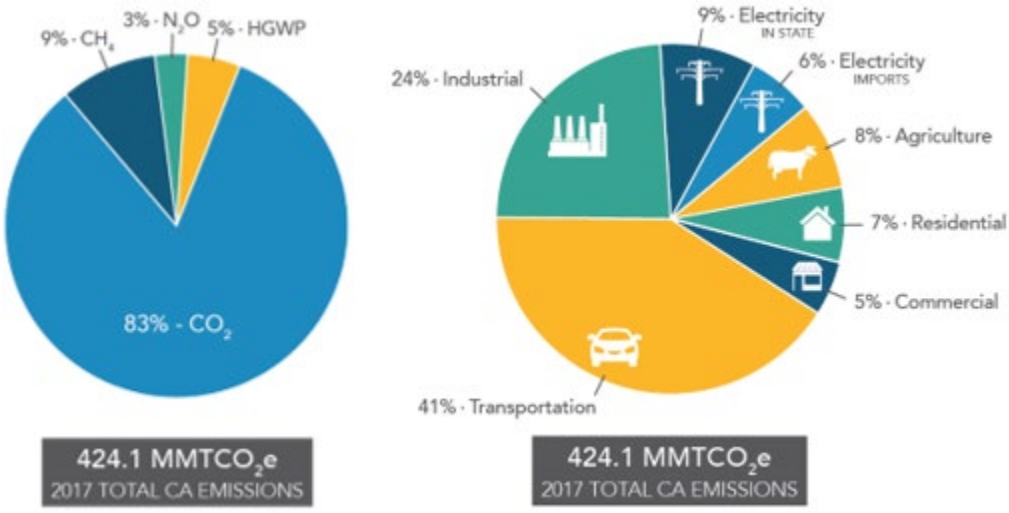
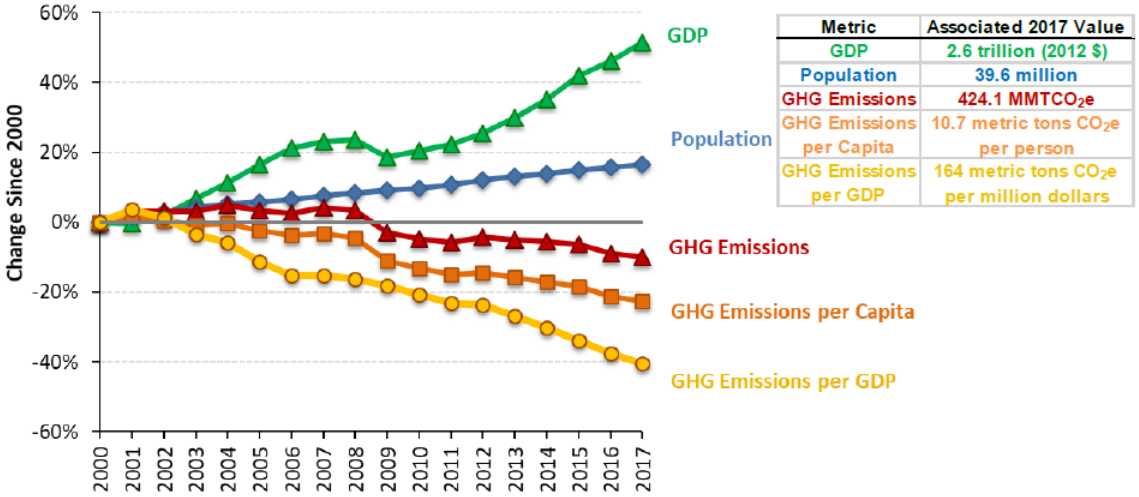


Figure 3-3 Change in California GDP, Population, and GHG Emissions since 2000



Source: ARB 2019b

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

ARB sets regional targets for California's 18 MPOs to use in their RTP/SCSs to plan future projects that will cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The proposed project is included in the SCAG 2016–2040 RTP/SCS. The regional reduction target for SCAG is 8 percent by 2020 and 19 percent by 2035 (ARB 2019c). The proposed project is not a road project that would influence long-term GHG emissions; it is, however, consistent with the 2016–2040 RTP/SCS plan in minimizing pollutants from roadway runoff through the incorporation of water treatment and control features such as detention basins (see Section 1.1.4, Regional Plans).

3.3 PROJECT ANALYSIS

GHG emissions from transportation projects can be divided into those produced during operation of the SHS 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 the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH_4 and N_2O are emitted during fuel combustion. In addition, a small amount of HFC emissions are 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.

Operational Emissions

The purpose of the proposed project is to comply with the Statewide NPDES Permit by by constructing a detention basin and modifying drainage facilities to treat highway runoff prior to release downstream. Building the detention basin will not increase the vehicle capacity of the roadway. Because the project would not increase the number of travel lanes on SR-57, no increase in vehicle miles traveled (VMT) would occur as result of project implementation. While some GHG emissions during the construction period would be unavoidable, no increase in operational GHG emissions is expected.

Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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.

An estimate of the construction emissions was conducted using the Road Construction Emissions Model that was developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD). Results from the model are presented in Table 3.3.1-1.The SMAQMD Road Construction Emission Model Version 8.1.0 is included in the models recommended by SCAQMD for roadway projects.[1] GHG emissions related to the Build Alternative would be mainly from CO_2, nitrous oxide (N_2O), and methane (CH_4) (reported together as carbon dioxide equivalent, CO_2e) contained in exhaust from off-road diesel construction equipment/vehicles (e.g., idling and operation of backhoes, cranes, and drilling rigs), from on-road trucks used by vendors (to deliver materials to the site) and on-site workers, and from use of portable equipment (e.g., generators). Construction is expected to start in 2022 and would continue for approximately 24 months. Total GHG emissions from

[1] Sacramento Metropolitan Air Quality Management District. *Air Quality Modeling.* Website: http://www.aqmd.gov/home/regulations/ceqa/air-quality-modeling (accessed February 20, 2017).

construction would be 893.19 metric tonnes (MT) CO_2e per year. The Roadway Construction Emissions Model results are included in Appendix G.

Table 3-1 Construction Greenhouse Gas Emissions for the Build Alternative

Construction Phase	CO_2 (tons/phase)	CH_4 (tons/phase)	N_2O (tons/phase)	CO_2e (MT/phase)
Grubbing/Land Clearing	48.02	0.01	0.00	43.95
Grading/Excavation	418.35	0.03	0.01	383.04
Drainage/Utilities/Sub-Grade	372.29	0.08	0.00	340.66
Paving	137.08	0.03	0.00	125.53
Maximum	418.35	0.08	0.01	383.04
Total (tons/construction project)	**975.74**	**0.15**	**0.02**	**893.19**

Source: Compiled by Caltrans Division of Environmental Analysis using the Sacramento Metropolitan Air Quality Management District's Road Construction Emission Model, version 8.1.0 (2019)

CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/phase = metric tons per phase
N_20 = nitrous oxide
tons/phase = tons per phase

CO_2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential, 1, 25, and 298 for CO_2, CH_4 and N_2O respectively. Total CO_2e is estimated by summing CO_2e estimates over all GHGs

Implementation of the following measures, some of which may also be required for other purposes, such as stormwater pollution control, will reduce climate change impacts resulting from construction activities.

- **Caltrans Standard Specifications in Section 14-9 Air Quality**
  - **PF-AQ-1**: To minimize impacts to air quality. Contractor is required to comply with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require 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. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions. In addition, the project will implement the following measures, when feasible, to reduce construction GHG emissions:

- **GHG-1:** Alternative Fuels such as renewable diesel should be used for construction equipment
- **GHG-2:** Limit Idling to 5 minutes for delivery and dump trucks and other diesel-powered equipment
- **GHG-3:** Schedule truck trips outside of peak morning and evening commute hours

  - **GHG-4:** Reduce construction waste and maximize the use of recycled materials (reduces consumption of raw materials, reduces landfill waste, and encourage cost savings
- **GHG-5:** Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.
- A TMP to reduce congestion and idling during construction will be developed and implemented. To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles from construction activities during peak travel times.

3.4 CEQA CONCLUSION

While the proposed project will result in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. The construction emissions from the Build Alternative would not prevent the region from meeting its GHG reduction goal. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction GHG-reduction measures, the impact would be less than significant.

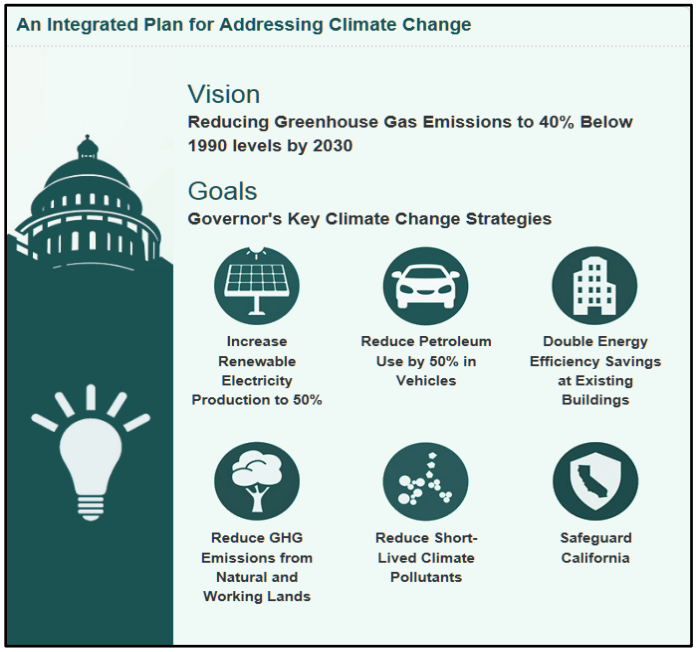
Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

3.4.1 GREENHOUSE GAS REDUCTION STRATEGIES

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*.

Figure 3-4 California Climate Strategy



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). A key state goal for reducing GHG emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California 2019).

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.

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 an 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.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with CO_2 reduction goals. It serves as an umbrella

document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

CALTRANS STRATEGIC MANAGEMENT PLAN

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

FUNDING AND TECHNICAL ASSISTANCE PROGRAMS

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the State's GHG reduction targets and advance transportation-related GHG emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

CALTRANS POLICY DIRECTIVES AND OTHER INITIATIVES

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Activities to Address Climate Change* (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce GHG emissions resulting from agency operations.

Project-Level GHG Reduction Strategies

The following measures will also be implemented, when feasible, in the project to reduce GHG emissions and potential climate change impacts from the project.

- **PF-AQ-1**: To minimize impacts to air quality. Contractor is required to comply with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. All construction

contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require 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. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

- **GHG-1:** Alternative Fuels such as renewable diesel should be used for construction equipment
- **GHG-2:** Limit Idling to 5 minutes for delivery and dump trucks and other diesel-powered equipment
- **GHG-3:** Schedule truck trips outside of peak morning and evening commute hours
- **GHG-4:** Reduce construction waste and maximize the use of recycled materials (reduces consumption of raw materials, reduces landfill waste, and encourage cost savings
- **GHG-5:** Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.
- A TMP to reduce congestion and idling during construction will be developed and implemented. To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles from construction activities during peak travel times.

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 U.S. Global Change Research Program (USGCRP) delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 U.S.C. ch. 56A § 2921 et seq). 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." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime" (USGCRP 2018).

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. *California's Fourth Climate Change Assessment* (2018) is the state's effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- *Resilience* is the "capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience". Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the "susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt." Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and

identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

EO S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

EO S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate "sea-level rise (SLR) projections into planning and decision making for projects in California" in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017 and its updated 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.

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 other than 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. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. 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.

Caltrans Adaptation Efforts

CALTRANS VULNERABILITY ASSESSMENTS

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- *Exposure* – Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence* – Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization* – Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

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 will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

Sea-Level Rise Analysis

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.

Floodplains

The Build Alternative lies within Zone X of the floodplain, which indicates that the area is determined to be outside the 0.2% annual change floodplain. Zone X is also noted as the Area of Minimal Flood Hazard. As indicated in the LHS/FER, the project limits are not within a regulatory floodway, not within the 100-year flood event area, and the Level of risk has been assessed as low. There are no rivers, streams, or creeks within project limits. Currently, runoff from the project segment of SR-57 drains to the existing drainage system but is not treated before discharge. Climate change is projected to increase 100-year storm precipitation depth in the project area by less than 10 percent from 2025 through 2085 (Caltrans 2018). Because the project is not in a 100-year flood area and would not add impervious surfaces that would increase runoff (see Section 2.10.1), the detention basin is likely to have capacity to accommodate increases in future 100-year storm events.

Wildfire

As described in Section 2.20.1, the project is located within the City of Brea's sphere of influence, and the City Fire Department classifies the location as a very high fire hazard area. California Department of Forestry and Fire Protection Fire Hazard Severity Viewer shows the southern project limits as within the very high fire hazard severity zone. The loop off-ramp where the detention basin would be built extends into a State-Responsibility Area of moderate fire hazard severity. The Caltrans District 12 Draft Climate Vulnerability Assessment maps the project area as roadway exposed in an area of medium level of concern through 2055, transitioning to high concern by 2085. The project area contains dry weeds and little vegetation, which constitute flammable fuel. Native, drought tolerant landscaping would be installed after construction to replace the existing dry fuels.

Furthermore, the detention basin would be a concrete structure built primarily underground, and therefore likely to be resilient to wildfire even under future climate change conditions.

3.5 References for Chapter 3

California Air Resources Board (ARB). 2019a. *California Greenhouse Gas Emissions Inventory–2019 Edition*. https://ww3.arb.ca.gov/cc/inventory/data/data.htm. Accessed: August 21, 2019.

California Air Resources Board (ARB). 2019b. *California Greenhouse Gas Emissions for 2000 to 2017. Trends of Emissions and Other Indicators.* https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf. Accessed: August 21, 2019.

California Air Resources Board (ARB). 2019c. *SB 375 Regional Plan Climate Targets*. https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets. Accessed: August 21, 2019.

California Department of Transportation. 2018. *Caltrans Climate Change Vulnerability Assessments. District 12 Draft Technical Report*. December. Prepared by WSP.

Federal Highway Administration (FHWA). 2019. *Sustainability.* https://www.fhwa.dot.gov/environment/sustainability/resilience/. Last updated February 7, 2019. Accessed: August 21, 2019.

Federal Highway Administration (FHWA). No date. *Sustainable Highways Initiative*. https://www.sustainablehighways.dot.gov/overview.aspx. Accessed: August 21, 2019.

State of California. 2018. *California's Fourth Climate Change Assessment*. http://www.climateassessment.ca.gov/. Accessed: August 21, 2019.

State of California. 2019. *California Climate Strategy*. https://www.climatechange.ca.gov/. Accessed: August 21, 2019.

U.S. Department of Transportation (U.S. DOT). 2011. *Policy Statement on Climate Change Adaptation*. June. https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm. Accessed: August 21, 2019.

U.S. Environmental Protection Agency (U.S. EPA). 2009. *Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Section 202(a) of the Clean Air Act*. https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean. Accessed: August 21, 2019.

U.S. Environmental Protection Agency (U.S. EPA). 2018. *Inventory of U.S. Greenhouse Gas Emissions and Sinks.*

https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks. Accessed: August 21, 2019.

U.S. Global Change Research Program (USGCRP). 2018. *Fourth National Climate Assessment*. https://nca2018.globalchange.gov/. Accessed: August 21, 2019.

This page intentionally left blank

Chapter 4 – Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this project is accomplished through a variety of formal and informal methods, including interagency coordination meetings, public meetings, public notices, 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.

4.1 Project Development Team Meetings

During the preparation of the environmental document for the proposed project, PDT meetings were held to discuss the proposed project design, factors to be considered during the environmental study process, key issues, and project schedule.

4.2 Cultural Resources

As part of the cultural investigation, a record search was conducted on May 6, 2019 at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System at California State University, Fullerton. The Native American Heritage Commission (NAHC) was contacted on May 6, 2019 to conduct a Sacred Lands File (SLF) search and to request a California Environmental Quality Act Tribal Consultation List under AB 52. In addition, Native American Tribes, Groups, and Individuals were contacted via a project notification letter sent on May 28, 2019. Follow-up phone calls and/or emails were conducted on June 14, 2019 and June 24, 2019. Results of consultation and coordination can be found in Appendix H – Native American Consultation.

4.3 Biological Resources

Lists of special status species were generated from the California Department of Fish and Wildlife's California Natural Diversity Database, the California Native Plant Society (CNPS) electronic inventory, current listings for special status species from the United States Fish and Wildlife service electronic inventory and from the Information Planning and Consultation System in May 2019. The National Marine Fisheries Service Species List was downloaded on May 9, 2019 from the National Oceanic and Atmospheric Administration. In addition, in June 2019 Caltrans coordinated with USFWS for technical assistance regarding the designated critical habitat adjacent to the project area.

4.4 Public Participation

A public hearing opportunity will be provided for this project. Thus, a public hearing will be provided based on the requests from the public. The Draft Environmental Document will be publicly circulated for review to solicit for comments on the document and if a public hearing is desired. To inform the public of the availability of Initial Study (with proposed Mitigated Negative Declaration) for review, Caltrans will advertise by listing the project in the newspaper of local circulation (including Orange County Register), mailing out postcard notices, and sending push-notifications via Geofencing Ads.

This page intentionally left blank

Chapter 5 – List of Preparers

These persons were principally responsible for preparation of this Initial Study and supporting technical studies.

California Department of Transportation, District 12

Alam, Mohammad, Transportation Engineer. P.E., MSCE, University of California, Long Beach. 20 years of experience in California Department of Transportation. Of the 20 years, 15 years under the Traffic Operations & Transportation Management Plan preparation. Contribution: Traffic handling and management review

Aurasteh, Reza, Senior Environmental Engineer. P.E., Ph.D. in Engineering, Utah State University. 28 years of experience in consulting engineering, academics, transportation engineering, and environmental engineering. Contribution: Senior review of the Initial Site Assessment (ISA), Air Quality, and Noise.

Baker, Charles, Senior Environmental Planner. B.A. in Anthropology, California State University, Fullerton. MA in History, California State University, Fullerton. 19 years of experience in environmental planning. Contribution: Senior review for Cultural and Paleontological Resources.

Barker, Kristopher P, Engineering Geologist. B.S., Geology, University of Southern California, 21 years of experience. Contribution: Preparation of Geotechnical Design Report.

Deshpande, Smita, Senior Environmental Planner. B.A. in Geography, University of Pune, India. M.S. in Regional Planning, Indiana University of Pennsylvania, Indiana, Pennsylvania. 29 years of experience in environmental planning. Contribution: Oversight preparation and management of the Initial Study.

Dinh, Phi, Senior Transportation Engineer. MSCE, University of California, Los Angeles. 21 years of experience in California Department of Transportation (Caltrans) Hydraulics, Design and Construction, 3.5 years in Environmental Engineering with the Department of the Navy. Contribution: Prepare Location Hydraulic Study and Floodplain Encroachment Report Summary.

Dolan, Edward, Associate Environmental Planner. Masters Urban & Regional Planning, California State Polytechnic University Pomona. 19 years of experience. Contribution: Technical editing.

Duran, Gabriela. Associate Environmental Planner. B.A. Environmental Economics. University of California, Riverside. 10 years of experience in environmental planning. Contribution: Peer review of the IS

Dweab, Shadi, Transportation Engineer. B.S. Civil Engineer, Aleppo University, Syria. 1 year of experience with Caltrans District 12 Office of Geotechnical Design South Branch C and 18 years of civil engineering experience. Contribution: preparation of Geotechnical Design Report and review of Draft Environmental Document

Phung, Alben, Environmental Planner. Masters of Urban & Regional Planning, California State Polytechnic University Pomona. 2 years of experience. Contribution: preparation of environmental document

Hsu, Jeffrey, Transportation Engineer, Civil. B.S. in Civil Engineer, University of California, Irvine. 21 years of experience with Caltrans District 12 with 18 years in Hydraulics Branch. Contribution: Help reviewed FEMA Flooded Insurance Rate Map, prepared Technical Information for Location Hydraulic Study and Floodplain Encroachment Report Summary.

Piña-Garrett, Grace, Senior Transportation Engineer, National Pollutant Discharge Elimination System Unit. B.S. in Civil Engineering, California State University Long Beach. 21 years of experience in engineering and water quality. Contribution: Senior review of Water Quality Technical memorandum

Salas, Hector B., Associate Environmental Planner. B.A. in Environmental Analysis and Design, University of California, Irvine. 20 years of experience. Contribution: Water Quality Technical memorandum

Sato, Lisa, Associate Environmental Planner (Biologist). B.S. in Biology (Biodiversity, Ecology, and Conservation), California State University, Fullerton. 7 years of experience. Contribution: Prepared National Environment Study-Minimal Impacts.

Sun, I-Hong, Landscape Associate, MLA in Landscape Architecture, University of Georgia, Athens. 22 years of experience. Contribution: project review for Visual and Aesthetic issues

Wright, Jonathan M., Associate Environmental Planner (Archaeology). B.A. Anthropology, San Diego State University. 13 years of experience. Contribution: Oversight and review of cultural and paleontological technical studies.

Chapter 6 – Distribution List

The Initial Study and the Notice of Availability will be distributed to local and regional agencies.

Federal Agencies

United States Fish and Wildlife Service
Carlsbad Field Office, 2177 Salk Avenue, St. 250
Carlsbad, California 92008

State Agencies

California Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95812-0806

California Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

California Department of Fish and Wildlife, South Coast Region
3883 Ruffin Road
San Diego, CA 92123

State Clearinghouse, Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Local/Regional Agencies

Southern California Association of Governments
818 W. Seventh St., #1200
Los Angeles, CA 90017

Orange County Clerk-Recorder
12 Civic Center Drive West
Santa Ana, CA 92701

Orange County Public Works
300 North Flower Street, 8th Floor
Santa Ana, CA 92703

Orange County Fire Authority
1 Fire Authority Road
Irvine, CA 92602

Orange County Sheriff's Department
13502 Music Honor Farm Road
Irvine, CA 92618

Orange County Planning Department
300 North Flower St., 3rd floor
Santa Ana, CA 92703

Orange County Flood Control Division
300 North Flower St., 7th floor
Santa Ana, CA 92703

Santa Ana Regional Water Quality Control Board, Region 8
3737 Main Street, Ste. 500
Riverside, CA 92501-3348

City of Brea, Planning Division
1 Civic Center Circle,
Brea, CA 92821

Elected Officials

City of Brea
1 Civic Center Circle,
Brea, CA 92821

- Mayor, Hon. Christine Marick
- Mayor Pro Tem, Hon. Marty Simonoff
- Council Member, Hon. Cecillia Hupp
- Council Member, Hon. Glenn Parker
- Council member, Hon. Steven Vargas

Doug Chaffee, Orange County Board of Supervisors, District 4
County of Orange
333 W. Santa Ana Boulevard
Santa Ana, CA 92701

Library
Brea Branch Library
1 Civic Center Cir #1, Brea, CA 92821

Kevin Johnson
2288 Buena Vista Avenue
Livermore, CA 94550

Appendix A - **Title VI**

This page intentionally left blank

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

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
FAX (916) 653-5776
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

April 2018

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."*

Related federal statutes 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, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

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 Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone (916) 324-8379, TTY 711, email Title.VI@dot.ca.gov, or visit the website www.dot.ca.gov.

LAURIE BERMAN
Director

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

This page intentionally blank

Appendix B - **RTP-FTIP**

This page intentionally left blank

#19-05 ORA ORA001108_SHOPP_MANDATE

2019 FEDERAL TRANSPORTATION IMPROVEMENT PROGRAM
ORANGE COUNTY
GROUP PROJECTS
(in $000's)

Grouped Projects for Safety Improvements - SHOPP Mandates Program. Scope: Projects are consistent with 40 CFR Part 93.126 Exempt Tables 2 and Table 3 categories - Railroad/highway crossing, Safer non-Federal-aid system roads, Shoulder imp, traffic control devices and ops assistance other than signalization projects, Lighting imp
MANDATE PROJECTS

RTIP #	DESCRIPTION	PHASE	18/19	19/20	20/21	21/22	Total
ORA001108	In Orange County, in San Juan Capistrano from Rte. 5 to the San Juan Capistrano City Line. Upgrade pedestrain facilities to meet current ADA standards. EA 0M0900	E	$1,230				$ 1,230
		R	$722				$ 722
		C	$2,748				$ 2,748
ORA001108	In Orange County, in Laguna Beach, from south of Ruby Street to Ledroit St. Upgrade pedestrian facilities to ADA Standards. EA 0M8200	E		$3,395			$ 3,395
		R		$6,330			$ 6,330
	RW capital increased from $2,100,000 to $3,100,000. Construction capital increased from $8,328,000 to $8,740,000. PCR approved at the January 2019 CTC meeting.	C		$10,340			$ 10,340
ORA001108	In Orange County, in Brea from east of Chino Hills State Park entrance to east of Olinda Drive. Storm watermitigation. EA 0N7300	E		$1,706			$ 1,706
		R		$580			$ 580
		C		$4,320			$ 4,320
ORA001108	In Orange County, in San juan Capistrano, from El Horno Street to south of Junipero Serra Road. Also in Irvine, from Rte. 133 to south of Sand Canyon (PM 23.2/R23.7). Reconstruct slope and apply vegetation to control sediment transport. EA 0P0900	E		$1,000			$ 1,000
		R		$50			$ 50
		C		$3,379			$ 3,379
ORA001108	In Newport Beach, from 815 feet south of Reef Point Drive to 1850 feet north of Crystal Heights Drive. Restore Bioswales. EA 0P6600	E			$899		$ 899
		R			$0		$ -
		C			$2,328		$ 2,328
ORA001108	In and near Brea, from south of Lambert Road to LA county line (PM R22.551). Construct storm water treatment. EA 0Q2700	E				$2,087	$ 2,087
		R				$0	$ -
		C				$8,297	$ 8,297
ORA001108	In Laguna Beach, from 7th Avenue to north of Moss Street. Upgrade existing curb ramps. EA 0P6900	E			$4,000		$ 4,000
		R			$5,985		$ 5,985
	COS request for PS&E approved at the August 2018 CTC, program amount: $3,399,000, Request: $4,000,000. Update Engineer Cost to match COS request amount.	C			$5,460		$ 5,460
	Total		$4,700	$31,100	$18,672	$10,384	$ 64,856

3/18/2019
4:53 PM

This page intentionally left blank

2018 SHOPP As of June 2019 Close-Out
($1,000)

Dist	County	Route	Post Miles	Location/Description	EA	PPNO	EFIS	Prog Code	FY	RW	Con	Vote	Vote Date	Fund Type	PA&ED	PS&E	RW Sup	Con Sup	Total Cap & Sup	Performance Value	Performance Measure	Approved Baseline Agreement
12	Orange	55	R8.0/R9.2	In the cities of Santa Ana and Tustin, from Dyer Road onramp to Edinger Avenue offramp. Construct northbound auxiliary lane.	0G950	3483	1215000045	201.310	19-20	$24,500	$13,100			NH	$200	$3,500	$2,700	$2,800	$46,800	1,153.00	Daily vehicle hour(s) of delay [DVHD	Oct-2018 / SHOPP-P-1819-048
12	Orange	55	10.7	In Tustin, on the 4th Street northbound offramp. Modify traffic signals and install additional lighting.	0N630	3510	1214000073	201.010	18-19		$772	$772	3/12/19	STP	$100	$427		$380	$1,679	11	Collision(s) reduced	
12	Orange	55	13.2/R17.8	In the city of Orange, from La Veta Avenue to Route 91. Roadside safety improvements.	0N530	3535	1214000056	201.235	19-20		$2,000			NH	$300	$440		$360	$3,100	32	Location(s)	
12	Orange	55	13.8/13.9	In the city of Orange, on the northbound onramp from Chapman Avenue and on the southbound offramp to Chapman Avenue. Improve safety by modifying existing traffic signals for improved visibility, adding safety lighting, refreshing pavement markings, and upgrading curb ramps to Americans with Disabilities Act (ADA) standards.	0R150	3542A	1218000049	201.010	21-22		$2,140			STP	$300	$800		$600	$3,840	34	Collision(s) reduced	
12	Orange	57	15.6	In Anaheim, on the northbound Route 57 loop connector to westbound Route 91. Apply high friction surface treatment and enhanced visibility delineation.	0Q790	37928	1217000104	201.010	20-21		$554			STP		$400		$354	$1,308	9	Collision(s) reduced	
12	Orange	57	20.8/R22.6	In and near Brea, from south of Lambert Road to Los Angeles County line (PM R22.551). Construct storm water treatment Best Management Practices (BMPs) in the form of new detention basin to reduce Trash Total Maximum Daily Load (TMDL) to the San Gabriel-Coyote Creek watershed.	0Q270	38468	1216000117	201.335	21-22		$6,797			NH	$887	$1,200		$1,500	$10,384	14.90	Acre(s) treated/pollutant	
~~12~~	~~Orange~~	~~73~~	~~10.0/20.0~~	~~In the cities of San Juan Capistrano, Laguna Niguel, Laguna Hills, Aliso Viejo, Laguna Beach, Irvine, Newport Beach, and Costa Mesa from Route 5 to Route 405. Upgrade highway safety features.~~	~~0N720~~	~~4051A~~	~~1214000095~~	~~201.010~~	~~19-20~~		~~$20,700~~			~~STP~~	~~$700~~	~~$2,000~~	~~$30~~	~~$2,700~~	~~$26,700~~	~~114~~	~~Collision(s) reduced~~	~~Oct-2018 / SHOPP-P-1819-048~~
12	Orange	73	12.9/R26.8	In Laguna Hills, Laguna Niguel, Aliso Viejo, Laguna Beach, Irvine, Newport Beach, and Costa Mesa from Moulton Parkway to Bristol Street. Rehabilitate bridge decks, bridge joints and approach slabs to preserve service life on ten bridges.	0R340	4080	1218000079	201.110	21-22	$5	$3,094			RMRA	$494	$1,294		$1,007	$5,894	10	Bridge(s)	
12	Orange	73	16.8/17.1	In Laguna Beach, on southbound Route 73, from Route 133 to 0.2 mile north of Route 133. Modify superelevation, install drainage inlets, place Open Graded Asphalt Concrete (OGAC) and place pavement delineation.	0N840	4096P	1214000115	201.010	18-19		$980	$749	12/27/18	STP		$637		$410	$2,027	57	Collision(s) reduced	
12	Orange	73	24.0	In Newport Beach, on the Route 73 southbound off-ramp to MacArthur Boulevard. Widen ramp. Install traffic signal and guardrail.	0N860	4096R	1214000123	201.010	19-20	$388	$7,347			STP	$500	$1,500	$130	$1,531	$11,396	82	Collision(s) reduced	
12	Orange	74	0.1/1.8	In San Juan Capistrano, from Route 5 to the San Juan Capistrano city line. Upgrade pedestrian facilities to meet current Americans with Disabilities Act (ADA) Standards.	0M090	4097C	1200020302	201.361	18-19	$122	$1,620			NH	$290	$940	$600	$1,128	$4,700	48	Curb ramp(s)	
12	Orange	74	2.9/5.1	Near San Juan Capistrano, from 0.3 mile east of Antonio Parkway/La Pata Avenue to 0.1 mile west of Gibby Road. Landscape and plant establishment project.	0L722	41248	1214000104	201.010	18-19	$20	$850	$850	12/5/18	STP		$400		$620	$1,890	0	Collision(s) reduced	
12	Orange	74	11.5/16.6	In the Cleveland National Forest, from 0.9 mile west of San Juan Fire Station to the Orange/Riverside County line. Super elevation corrections, shoulder widening, Open Graded Asphalt Concrete (OGAC) overlay and apply High Friction Surface Treatment (HFST).	0P030	4218	1215000024	201.010	19-20	$1,240	$34,211			STP	$2,965	$4,826	$1,018	$7,506	$51,766	167	Collision(s) reduced	Mar-2019 / SHOPP-P-1819-118
12	Orange	90	2.6/5.1	In and near Brea, from Harbor Boulevard to Randolph Avenue. Cold plane pavement and place Rubberized Hot Mix Asphalt (RHMA) pavement.	0P580	4337	1215000148	201.121	19-20		$8,208			NH	$478	$1,249	$129	$2,269	$12,333	11.70	Lane mile(s)	
12	Orange	90	4.0	In Brea, at the intersection of Route 90 (Imperial Highway) with Jasmine Drive/Berry Street. Improve safety by modifying the existing traffic signals and lighting, adding safety lighting, and refreshing pavement striping.	0Q420	4373	1217000042	201.010	19-20	$17	$758			STP	$313	$370	$216	$337	$2,011	23	Collision(s) reduced	
12	Orange	91	R1.8/R3.4	In Buena Park, in eastbound direction from Knott Avenue to Route 5. Enhance lane assignment and motorist safety by installing additional guide sign structures, upgrading sign panels and guardrail, refreshing and extending striping, and reconstructing concrete median barrier.	0Q310	4532A	1216000124	201.010	20-21	$5	$3,140			STP	$640	$908	$10	$810	$5,513	253	Collision(s) reduced	
12	Orange	91	R2.8	In Buena Park, on the 91 eastbound connector from northbound Route 39 (Beach Boulevard). Overlay Hot Mix Asphalt (HMA) Open Graded Friction Course (OGFC).	0Q040	4533A	1216000078	201.010	18-19		$540	$540	11/7/18	STP		$360		$320	$1,220	17	Collision(s) reduced	
12	Orange	91	R9.8/R18.9	In the city of Anaheim, from west of Lakeview Avenue to Orange/Riverside County line. Pavement rehabilitation.	0N320	46098	1213000196	201.121	18-19	$10	$11,000			NH		$1,740		$2,450	$15,200	90.00	Lane mile(s)	
12	Orange	91	R13.6	In Anaheim, at the Commercial Vehicle Enforcement Facility (CVEF) Peralta Weigh Station (eastbound). Rehabilitate and upgrade CVEF.	0N490	4642A	1214000050	201.321	18-19		$6,847	$6,846	5/15/19	ST-CASH	$624	$1,391	$10	$1,332	$10,204	1	Location(s)	
12	Orange	133	0.9/1.2	In Laguna Beach, at and north of Canyon Acres Drive. Extend the northbound lane reduction transition.	0N870	4769	1214000124	201.010	18-19	$536	$1,189			STP		$1,100	$150	$789	$3,764	34	Collision(s) reduced	

This page intentionally left blank

Appendix C - **List of Technical Studies**

Air Quality Review Memorandum (February 2019)
Prepared by Caltrans District 12

Archaeological Survey Report (July 2019)
Prepared by LSA Associates, Inc.

Floodplain Encroachment Report Summary (December 2019)
Prepared by Caltrans District 12

Geotechnical Design Report (April 2019)
Prepared by Caltrans District 12

Historic Property Survey Report (July 2019)
Prepared by LSA Associates, Inc.

Location Hydraulic Study (Technical Information) (December 2019)
Prepared by Caltrans District 12

Noise Review Memorandum (February 2019)
Prepared by Caltrans District 12

Natural Environment Study (Minimal Impacts) (July 2019)
Prepared by Caltrans District 12

Paleontological Identification Report and Paleontological Evaluation Report (July 2019)
Prepared by LSA Associates, Inc.

Site Investigation Report (April 2019)
Prepared by GEOCON Consultants, Inc.

Water Quality Technical Memorandum (October 2019)
Prepared by Caltrans District 12

The page intentionally left blank

Appendix D - **Avoidance, Minimization, and/or Mitigation Summary**

In order to be sure that all of the environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as articulated on the proposed Environmental Commitments Record [ECR] which follows) would be implemented. During project design, avoidance, minimization, and /or mitigation measures will be incorporated into the project's final plans, specifications, and cost estimates, as appropriate. All permits will be obtained prior to implementation of the project. During construction, environmental and construction/engineering staff will ensure that the commitments contained in this ECR are fulfilled. Following construction and appropriate phases of project delivery, long-term mitigation maintenance and monitoring will take place, as applicable. As the following ECR is a draft, some fields have not been completed, and will be filled out as each of the measures is implemented.

Note: Some measures may apply to more than one resource area. Duplicative or redundant measures have not been included in this ECR.

Note: Mitigation measures are used to lessen a significant impact under CEQA

This page intentionally left blank

Measure	Resource Area	Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Required
Project Feature	Air Quality	**PF-AQ-1: Caltrans Standard Specifications in Section 14-9 Air Quality** To minimize impacts to air quality. Contractor is required to comply with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.	Resident Engineer Contractor	Construction	No
Project Feature	Biology	**PF-BIO-1 Caltrans Standard Specification 14-6.03B Bird Protection. Nesting Bird Season**: To avoid impacts to any nesting birds, ground disturbance that occurs during the nesting bird season (February 1 – September 30) will require nesting bird surveys by a Caltrans Biologist within 72 hours prior to the start of work. The Caltrans Biologist will be contacted at least one week ahead of time to schedule a survey	Biologist Resident Engineer	Construction	No
Avoidance	Biology	**BIO-1 Monitoring**: If any work requires biological monitoring, a qualified biologist will be on site to monitor work as needed. The contractor will contact the resident engineer, who will contact the Caltrans Biologist, to ensure a biological monitor is on site as needed.	Biologist Resident Engineer	Construction	No
Avoidance	Biology	**BIO-2 Comply with Executive Order Number 13112**: Invasive Species. Vegetation species known to be invasive in the state of California will not be installed (e.g. Mexican fan palm, pampas grass, tree of heaven, etc.). An invasive plant species list can be found at the California Invasive Plant Inventory Council (Cal-IPC) website http://www.cal-ipc.org/paf/. The Landscape Architect will coordinate with the Caltrans Biologist to ensure an appropriate plant palette is created for this project.	Project Engineer Biologist Resident Engineer	Construction	No

Measure	Resource Area	Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Required
Avoidance	Biology	**BIO-3 Light Shields**: To avoid light spillage into the nearby habitat, Caltrans will add shields to the lights that are in accordance with Caltrans 2018 Standard Specifications.	Biologist Project Engineer Resident Engineer	Design Construction	No
Avoidance	Biology	**BIO-4 Low Temperature Bulb**: To avoid illuminating a broader area, Caltrans will use the lowest colored temperature bulb (2700 Kelvin), which will emit a warmer colored light than the standard LED bulb.	Biologist Project Engineer Resident Engineer	Design Construction	No
Project Feature	Cultural Resource	**PF-CUL-1 Caltrans Standard Specification Section 14-2.03A: Discovery of Cultural Materials**. If cultural materials are discovered during construction activities, the construction Contractor will divert all earthmoving activity within and around the immediate discovery area until a qualified archaeologist can assess the nature and significance of the find. At that time, coordination will be maintained with the California Department of Transportation District 12 Environmental Branch Chief or the District 12 Native American Coordinator to determine an appropriate course of action	Archaeologist Resident Engineer Contractor	Construction	No
Project Feature	Cultural Resource	**PF-CUL-2 Caltrans Standard Specification Section 14-2.03A: Discovery of Human Remains**. If human remains are discovered during construction activities, California State Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected o overlie remains, and the Orange County	Archaeologist Resident Engineer Contractor	Construction	No

Measure	Resource Area	Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Required
		Coroner shall be contacted. If the remains are thought to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC), who pursuant to California Public Resources Code (PRC) Section 5097.98, will then notify the Most Likely Descendant (MLD). At that time, the persons who discovered the remains will contact the Caltrans District 12 Environmental Branch Chief or the District 12 Native American Coordinator so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of California PRC 5097.98 are to be followed as applicable.			
Project Feature	Geology	**PF-GEO-1 Caltrans Standard Specifications 48-2.02. B and Section 19 Earthwork General**: The project will comply with the most current Caltrans procedures and design criteria regarding seismic design to mitigate any adverse effects related to seismic ground shaking. Earthwork will be performed in accordance with Caltrans Standard Specifications, Section 19, which require standardized measures related to compacted fill, over-excavation, and re-compaction, among other requirements. Moreover, Caltrans Highway Design Manual (HDM) Topic 113, requires the project engineer to review a Geotechnical Design Report, if any, to ascertain the scope of geotechnical involvement for a project.	Project Engineer Resident Engineer	Design Construction	No
Mitigation**	Paleontology	**PAL-1 Caltrans Standard Special Provision Section 14-7.04 Paleontological Mitigation Plan:** Prior to construction activities, the California Department of Transportation (Caltrans) would ensure that a Paleontological Mitigation Plan (PMP) is	Project Engineer Archaeologist	Design Construction	No

Measure	Resource Area	Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Required
		prepared and adhered to during construction of the project portions that are identified as having high paleontological sensitivity. The PMP would include, but not be limited to, the following: • A preconstruction field survey in areas identified as having a high paleontological sensitivity after vegetation and any paving is removed, followed by salvage of any observed surface paleontological resources prior to the beginning of additional grading. • Attendance at the pregrade meeting by a qualified paleontologist or representative. At this meeting, the paleontologist would explain the likelihood for encountering paleontological resources, what resources may be discovered, and the methods of recovery that would be employed. • During construction excavation, a qualified vertebrate paleontological monitor would initially be present on a full-time basis whenever excavation would occur within the sediments that have a high paleontological sensitivity rating and on a spot-check basis for sediments that have a low sensitivity rating. Monitoring may be reduced to a part-time basis if no resources are being discovered in sediments with a high sensitivity rating (monitoring reductions, when they occur, would be determined by the qualified Principal Paleontologist). The monitor would inspect fresh cuts and/or spoils piles to recover paleontological resources. The monitor would be empowered to temporarily divert construction equipment away from the immediate area of the discovery. The monitor would be equipped to rapidly stabilize and	Resident Engineer Contractor	Post-Construction	

Measure	Resource Area	Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Required
		remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, the grading contractor would consider using heavy equipment on site to assist in the removal and collection of large materials. • Localized concentrations of small (or micro-) vertebrates may be found in all native sediments. Therefore, it is recommended that these native sediments occasionally be spot-screened on site through one-eighth to one-twentieth-inch mesh screens to determine whether microfossils are present. If microfossils are encountered, sediment samples (up to 3 cubic yards, or 6,000 pounds) would be collected and processed through one-twentieth-inch mesh screens to recover additional fossils. • Recovered specimens would be prepared to the point of identification and permanent preservation. This includes the sorting of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume and cost of storage for the repository, and the addition of approved chemical hardeners/stabilizers to fragile specimens. • Specimens would be identified to the lowest taxonomic level possible and curated into an institutional repository with retrievable storage. The repository institutions usually charge a one-time fee based on volume, so removing surplus sediment is important. The repository institution may be a local museum or university that has a			

Measure	Resource Area	Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Required
		curator who can retrieve the specimens upon request. A draft curation agreement would be established with an approved curation facility prior to the initiation of any paleontological monitoring. • Preparation and submittal of the Paleontological Mitigation Report (PMR) documenting completion of the PMP.			
Project Feature	Paleontology	**PF-PAL-1 Caltrans Standard Specification 14-7.03:** If unanticipated paleontological resources are discovered all work within 60 feet of the discovery must cease and the construction resident engineer must be notified. Work cannot continue near the discovery until authorized.	Resident Engineer Archaeologist Contractor	Construction Post-Construction	No
Minimization	GHG Emissions	**GHG-1:** Alternative Fuels such as renewable diesel should be used for construction equipment	Resident Engineer Contractor	Construction	No
Minimization	GHG Emissions	**GHG-2:** Limit Idling to 5 minutes for delivery and dump trucks and other diesel-powered equipment	Resident Engineer Contractor	Construction	No
Minimization	GHG Emissions	**GHG-3:** Schedule truck trips outside of peak morning and evening commute hours	Resident Engineer Contractor	Construction	No
Minimization	GHG Emissions	**GHG-4:** Reduce construction waste and maximize the use of recycled materials (reduces consumption of raw materials, reduces landfill waste, and encourage cost savings	Resident Engineer Contractor	Construction	No
Minimization	GHG Emissions	**GHG-5:** Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by	Resident Engineer	Construction	No

Measure	Resource Area	Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Required
		California Code of Regulations Title 17, Section 93114.	Contractor		
Minimization	Hazardous Materials	**HAZ-1:** During construction, the construction contractor will monitor soil excavation for visible soil staining, odor, and the possible presence of TPH impacted soil. If the potential contaminated soil is identified during project construction activities, the construction contractor will be required to stockpile the soil separately and have it sampled and tested by an environmental professional. If the test results indicated that the soil contains TPH, then, the impacted soil will be disposed of to an appropriate disposal facility.	Resident Engineer Contractor	Construction	No
Project Feature	Water Quality	**PF-WQ-1 Caltrans Standard Specification 13-1.01D (2)-Regulatory Requirements:** The project will comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for the State of California Department of Transportation, Order No. 2012-0011-DWQ, NPDES No. CAS000003 and any subsequent permits in effect at the time of construction.	Resident Engineer	Construction	No
Project Feature	Water Quality	**PF-WQ-2 Caltrans Standard Specification 13-3.01D (2)-Regulatory Requirements:** The project will comply 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, NPDES General Permit No. CAS000002 and any subsequent permits in effect at the time of construction.	Resident Engineer	Construction	No

Measure	Resource Area	Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Required
Project Feature	Water Quality	**PF-WQ-3 Caltrans Standard Specification 13-3 Storm Water Pollution Prevention Plan:** The project will comply with the Construction General Permit by preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) to address all construction-related activities, equipment, and materials that have the potential to impact water quality for the appropriate Risk Level. The SWPPP will identify the sources of pollutants that may affect the quality of Storm water and include BMPs to control the pollutants, such as: sediment control, catch basin inlet protection, construction materials management, and non-storm water BMPs. All work must conform to the Construction Site BMP requirements specified in the latest edition of the Storm Water Quality Handbooks: Construction Site Best Management Practices Manual to control and minimize the impacts of construction and construction related activities, material and pollutants on the watershed. These include, but are not limited to temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-storm water BMPs	Resident Engineer	Construction	No
Project Feature	Water Quality	**PF-WQ-4:** Design Pollution Prevention BMPs will be implemented such as preservation of existing vegetation, slow/surface protection systems (permanent soil stabilization), concentrated flow conveyance systems such as ditches, berms, dikes and swales, overside drains, flared end sections, and outlet protect/velocity dissipation devices.	Design Engineer Resident Engineer	Design Construction	No
Project Feature	Water Quality	**PF-WQ-5:** Caltrans approved treatment BMPs will be implemented consistent with the requirements of NPDES permit and Waste Discharge Requirements	Design Engineer	Design Construction	No

Measure	Resource Area	Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Required
		for the State of California, Department of Transportation, Order No. 2012-001-DWQ, NPDES No. CA200003 and any subsequent permits in effect at the time of construction.	Resident Engineer		
Project Feature	Noise	**PF-N-1: Caltrans Standard Specification Section 14-8** Do not exceed 86 dBA L_{max} at 50ft from the job site from 9:00 p.m. to 6:00 a.m.	Resident Engineer Contractor	Construction	No
Project Feature	Traffic	**PF-TRA-1 Caltrans Standard Specifications Section 12-4 Maintaining Traffic:** The project will include preparation of a Transportation Management Plan (TMP) during the Design (Plans, Specifications, and Estimates (PS&E)) phase. The TMP is an approach for alleviating or minimizing traffic delays by the effective application of traditional traffic handling practices and an innovative combination of various strategies. These strategies include public awareness campaigns, motorist information, incident management, construction methods, demand management, and alternate route planning. The TMP will detail a plan for the umbrella standard specification of 12-4 Maintaining Traffic and any applicable sections (i.e. 12-4.01 General, 12-4.02 Traffic Control Systems, 12-4.03 Falsework Openings 12-4.04 Pedestrian Facilities, etc.).	Traffic Engineer Resident Engineer Project Engineer Contractor	Design Construction	No

This page intentionally left blank

Appendix E - **Layout Plans**

This page intentionally left blank

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

CALTRANS DESIGN OVERSIGHT APPROVAL | REGISTRATION No. | LICENSE Exp DATE | DATE SIGNED | CONSULTANT DESIGN ENGINEER

INDEX OF PLANS

SHEET NO	DESCRIPTION
1	TITLE AND LOCATION MAP

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

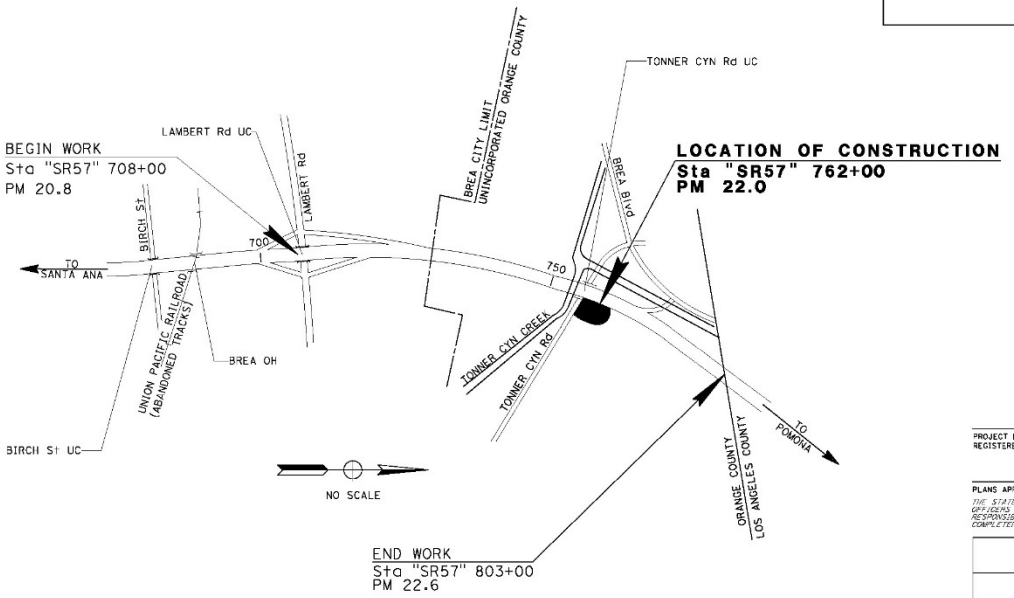
PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY

IN ORANGE COUNTY NEAR CITY OF BREA ON SR-57 AT TONNER CANYON LOOP OFF RAMP (PM 22.0)

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2018

PRELIMINARY PLANS

DIst	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	57	22.0		



PROJECT ENGINEER
REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

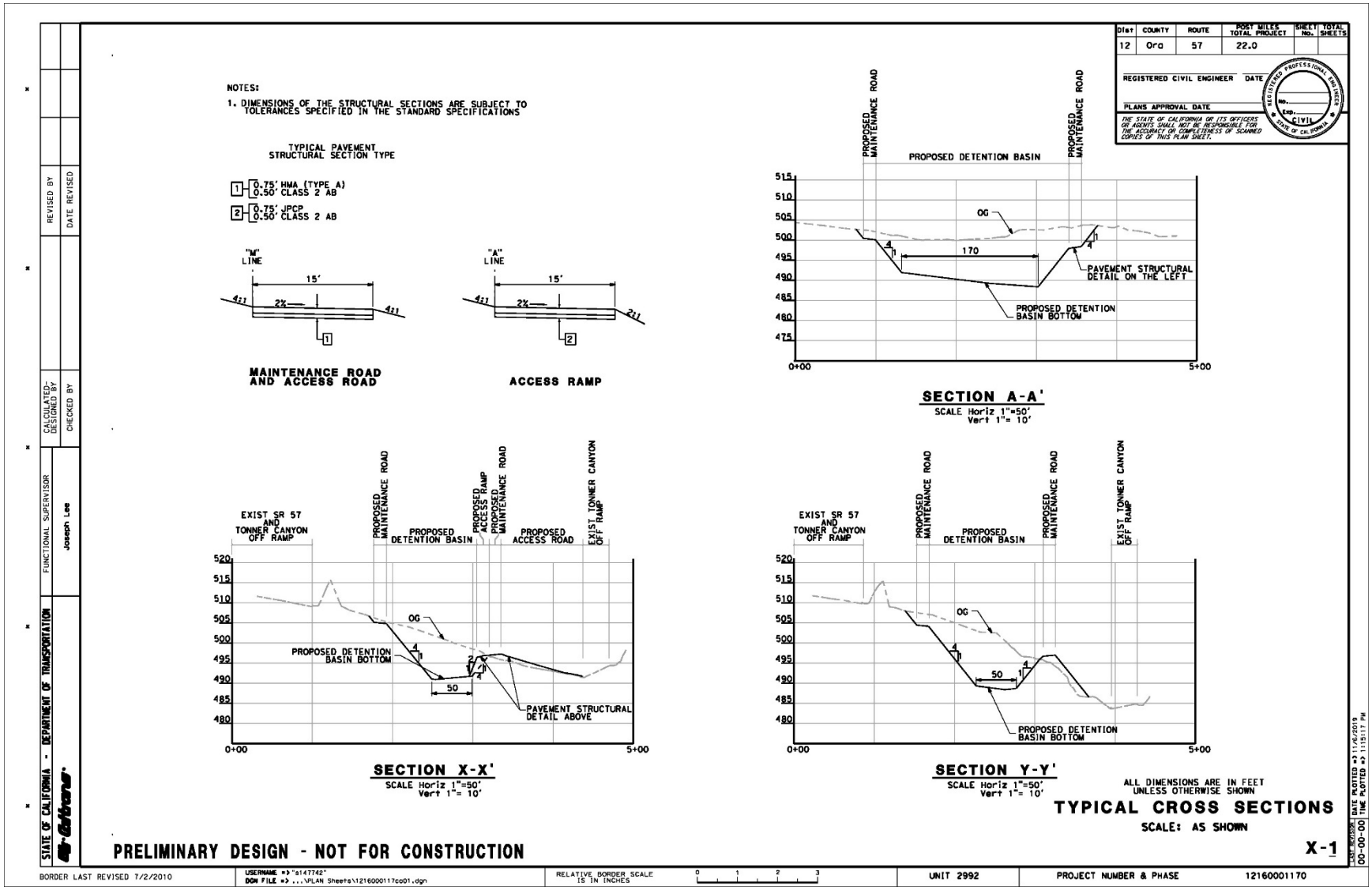
PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

CONTRACT No.	12-0Q2700
PROJECT ID	1216000117

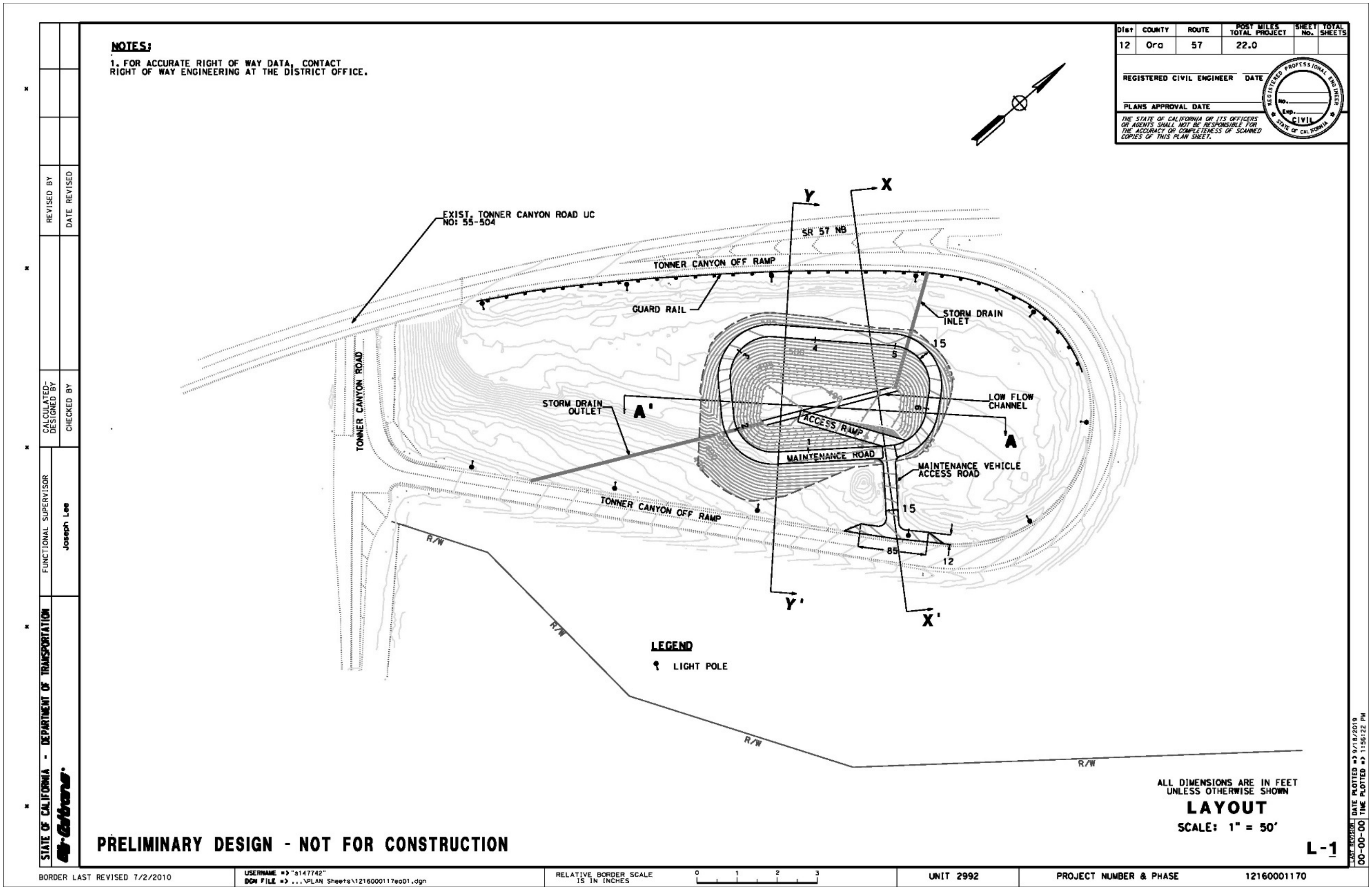
DATE PLOTTED => &DATE
TIME PLOTTED => &TIME
00-00-00

BORDER LAST REVISED 9/30/2012 | CALTRANS WEB SITE IS: HTTP://WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => &USER | DGN FILE => &REQUEST | UNIT 2992 | PROJECT NUMBER & PHASE 1216000170

This page intentionally left blank


NOTES:
1. DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS
TYPICAL PAVEMENT STRUCTURAL SECTION TYPE
1 0.75' HMA (TYPE A) 0.50' CLASS 2 AB
2 0.75' JPCP 0.50' CLASS 2 AB
"M" LINE
"A" LINE
15'
2%
4:1
2:1
MAINTENANCE ROAD AND ACCESS ROAD
ACCESS RAMP
PROPOSED MAINTENANCE ROAD
PROPOSED DETENTION BASIN
OG
170
PAVEMENT STRUCTURAL DETAIL ON THE LEFT
PROPOSED DETENTION BASIN BOTTOM
SECTION A-A'
SCALE Horiz 1"=50' Vert 1"= 10'
EXIST SR 57 AND TONNER CANYON OFF RAMP
PROPOSED ACCESS RAMP
PROPOSED ACCESS ROAD
EXIST TONNER CANYON OFF RAMP
50
PAVEMENT STRUCTURAL DETAIL ABOVE
SECTION X-X'
SECTION Y-Y'
ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN
TYPICAL CROSS SECTIONS
SCALE: AS SHOWN
PRELIMINARY DESIGN - NOT FOR CONSTRUCTION
X-1
Dist 12 | COUNTY Ora | ROUTE 57 | POST MILES TOTAL PROJECT 22.0
REGISTERED CIVIL ENGINEER DATE
PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
FUNCTIONAL SUPERVISOR Joseph Lee
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
BORDER LAST REVISED 7/2/2010
USERNAME => "a147742"
DGN FILE => ...\PLAN Sheets\1216000117co01.dgn
RELATIVE BORDER SCALE IS IN INCHES
UNIT 2992
PROJECT NUMBER & PHASE 1216000117
LAST REVISION 00-00-00
DATE PLOTTED => 11/6/2019
TIME PLOTTED => 11:15:17 PM

This page intentionally left blank


NOTES:
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
Dist 12 COUNTY Ora ROUTE 57 POST MILES TOTAL PROJECT 22.0 SHEET No. TOTAL SHEETS
REGISTERED CIVIL ENGINEER DATE
PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.
REGISTERED PROFESSIONAL ENGINEER
CIVIL
STATE OF CALIFORNIA
EXIST. TONNER CANYON ROAD UC NO: 55-504
SR 57 NB
TONNER CANYON OFF RAMP
GUARD RAIL
STORM DRAIN INLET
LOW FLOW CHANNEL
STORM DRAIN OUTLET
ACCESS RAMP
MAINTENANCE ROAD
MAINTENANCE VEHICLE ACCESS ROAD
TONNER CANYON ROAD
TONNER CANYON OFF RAMP
Y
X
A'
A
Y'
X'
15
15
85
12
R/W
LEGEND
LIGHT POLE
ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN
LAYOUT
SCALE: 1" = 50'
L-1
PRELIMINARY DESIGN - NOT FOR CONSTRUCTION
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
FUNCTIONAL SUPERVISOR Joseph Lee
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
BORDER LAST REVISED 7/2/2010
USERNAME => "s147742"
DGN FILE => ...\PLAN Sheets\1216000117ea01.dgn
RELATIVE BORDER SCALE IS IN INCHES
UNIT 2992
PROJECT NUMBER & PHASE 12160001170
DATE PLOTTED => 9/18/2019
TIME PLOTTED => 1:56:22 PM
LAST REVISION 00-00-00

This page intentionally left blank

Appendix F - **Construction Emissions**

This page intentionally left blank

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> SR-57 Tonner Canyon Detention Basin Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.70	5.87	7.99	50.40	0.40	50.00	10.72	0.32	10.40	0.02	1,818.81	0.35	0.02	1,834.92
Grading/Excavation	0.49	7.35	5.17	50.37	0.37	50.00	10.63	0.23	10.40	0.03	3,521.47	0.28	0.09	3,554.13
Drainage/Utilities/Sub-Grade	1.80	22.15	14.70	50.76	0.76	50.00	11.06	0.66	10.40	0.05	4,700.68	0.98	0.05	4,741.31
Paving	1.05	15.43	9.41	0.54	0.54	0.00	0.44	0.44	0.00	0.04	3,461.58	0.67	0.05	3,494.33
Maximum (pounds/day)	1.80	22.15	14.70	50.76	0.76	50.00	11.06	0.66	10.40	0.05	4,700.68	0.98	0.09	4,741.31
Total (tons/construction project)	0.26	3.39	2.36	11.36	0.14	11.22	2.44	0.11	2.33	0.01	975.74	0.15	0.02	984.56

Notes:

Project Start Year ->	2022
Project Length (months) ->	24
Total Project Area (acres) ->	5
Maximum Area Disturbed/Day (acres) ->	5
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	15	0	40	0	600	50
Grading/Excavation	23	0	612	0	600	50
Drainage/Utilities/Sub-Grade	0	40	0	100	600	50
Paving	30	40	100	125	600	50

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> SR-57 Tonner Canyon Detention Basin Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.15	0.21	1.33	0.01	1.32	0.28	0.01	0.27	0.00	48.02	0.01	0.00	43.95
Grading/Excavation	0.06	0.87	0.61	5.98	0.04	5.94	1.26	0.03	1.24	0.00	418.35	0.03	0.01	383.04
Drainage/Utilities/Sub-Grade	0.14	1.75	1.16	4.02	0.06	3.96	0.88	0.05	0.82	0.00	372.29	0.08	0.00	340.66
Paving	0.04	0.61	0.37	0.02	0.02	0.00	0.02	0.02	0.00	0.00	137.08	0.03	0.00	125.53
Maximum (tons/phase)	0.14	1.75	1.16	5.98	0.06	5.94	1.26	0.05	1.24	0.00	418.35	0.08	0.01	383.04
Total (tons/construction project)	0.26	3.39	2.36	11.36	0.14	11.22	2.44	0.11	2.33	0.01	975.74	0.15	0.02	893.19

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.
The CO2e emissions are reported as metric tons per phase.

This page intentionally left blank

Appendix G - **Native American Consultation Record**

This page intentionally left blank

ASSEMBLY BILL 52 AND SECTION 106 NATIVE AMERICAN CONSULTATION RECORD
State Route 57 Tonner Canyon BMP Detention Basin Construction Project (EA 0Q2700), Brea, Orange County, California

Date the Sacred Lands File (SLF) Search and Consultation list request was submitted to the Native American Heritage Commission (NAHC): May 6, 2019

Date the NAHC responded: May 23, 2019

Results of the NAHC SLF Search: The Sacred Lands File search was completed with **negative** results for the presence of Native American cultural resources in the Area of Potential Effect (APE); however the NAHC recommended that the 17 Native American individuals listed in the table below be contacted for information regarding cultural resources that could be affected by the project.

Groups/Individuals Contacted	Date of Project Notification Letter	Date of Tribal Response to Letter	Date and Results of Follow-up Telephone Calls and/or Emails
Agua Caliente Band of Cahuilla Indians Jeff Grubbe, Chairperson *Cahuilla*	05/28/2019	06/12/2019, 1:47 PM: A response letter from Lacy Padilla was sent via email. Ms. Padilla stated that the project is not located within the Tribe's Traditional Use Area and that they defer to other tribes.	*No follow-up necessary.*
Gabrieleno Band of Mission Indians – Kizh Nation Andrew Salas, Chairperson *Gabrieleno*	05/28/2019	No response was received.	06/14/2019, 4:01 PM: A follow-up email was sent to Chairperson Salas. 06/24/2019, 3:31 PM: A second follow-up email was sent to Chairperson Salas. No response was received.
Gabrieleno/Tongva San Gabriel Band of Mission Indians Anthony Morales, Chairperson *Gabrieleno*	05/28/2019	No response was received.	06/14/2019, 4:02 PM: A follow-up email was sent to Chairperson Morales. 06/24/2019, 3:32 PM: A second follow-up email was sent to Chairperson Morales. No response was received.
Gabrielino/Tongva Nation Sandonne Goad, Chairperson *Gabrielino*	05/28/2019	No response was received.	06/14/2019, 4:04 PM: A follow-up email was sent to Chairperson Goad. 06/24/2019, 3:33 PM: A second follow-up email was sent to Chairperson Goad. No response was received.

This page intentionally left blank

ASSEMBLY BILL 52 AND SECTION 106 NATIVE AMERICAN CONSULTATION RECORD
State Route 57 Tonner Canyon BMP Detention Basin Construction Project (EA 0Q2700), Brea, Orange County, California

Groups/Individuals Contacted	Date of Project Notification Letter	Date of Tribal Response to Letter	Date and Results of Follow-up Telephone Calls and/or Emails
Gabrielino Tongva Indians of California Tribal Council Robert Dorame, Chairperson *Gabrielino*	05/28/2019	No response was received.	06/14/2019, 4:04 PM: A follow-up email was sent to Chairperson Dorame. 06/24/2019, 3:34 PM: A second follow-up email was sent to Chairperson Dorame. No response was received.
Gabrielino-Tongva Tribe Charles Alvarez *Gabrielino*	05/28/2019	No response was received. *The letter was returned to sender on 06/20/2019 as unclaimed and unable to forward.*	06/14/2019, 4:05 PM: A follow-up email was sent to Mr. Alvarez. 06/24/2019, 3:34 PM: A second follow-up email was sent to Mr. Alvarez. No response was received.
Juaneño Band of Mission Indians Sonia Johnston, Tribal Chairperson *Juaneño*	05/28/2019	No response was received.	06/14/2019, 4:05 PM: A follow-up email was sent to Chairperson Johnston. 06/24/2019, 3:35 PM: A second follow-up email was sent to Chairperson Johnston. No response was received.
Juaneño Band of Mission Indians Acjachemen Nation Matias Belardes, Chairperson *Juaneño*	05/28/2019	No response was received.	06/14/2019, 4:06 PM: A follow-up email was sent to Joyce Perry, whose email was provided for Chairperson Belardes. 06/24/2019, 3:35 PM: A second follow-up email was sent to Ms. Perry. No response was received.

This page intentionally left blank

ASSEMBLY BILL 52 AND SECTION 106 NATIVE AMERICAN CONSULTATION RECORD
State Route 57 Tonner Canyon BMP Detention Basin Construction Project (EA 0Q2700), Brea, Orange County, California

Groups/Individuals Contacted	Date of Project Notification Letter	Date of Tribal Response to Letter	Date and Results of Follow-up Telephone Calls and/or Emails
Juaneño Band of Mission Indians Acjachemen Nation – Romero Teresa Romero, Chairwoman *Juaneño*	05/28/2019	No response was received.	06/14/2019, 4:07 PM: A follow-up email was sent to Chairperson Romero. 06/24/2019, 3:37 PM: A second follow-up email was sent to Chairperson Romero. No response was received.
La Jolla Band of Luiseño Indians Fred Nelson, Chairperson *Luiseño*	5/28/2019	No response was received.	06/14/2019, 4:19 PM: A follow-up email was sent to Chairperson Nelson. 06/24/2019, 3:40 PM: A second follow-up email was sent to Chairperson Nelson. No response was received.
Pala Band of Mission Indians Robert Smith, Chairperson *Cupeño Luiseño*	05/28/2019	No response was received.	06/14/2019, 4:08 PM: A follow-up email was sent to Chairperson Smith. 06/24/2019, 3:38 PM: A second follow-up email was sent to Chairperson Smith. 06/25/2019, 9:54 AM: An email with attached letter was received from Alexis Wallick on behalf of Shasta Gaughen (Tribal Historic Preservation Officer). The letter stated that the project is not within recognized Pala Indian Reservation boundaries or the tribe's Traditional Use Area, and that the tribe defers to the wishes of Tribes in closer proximity to the project.
Pauma Band of Luiseño Indians Temet Aguilar, Chairperson *Luiseño*	05/28/2019	No response was received.	06/14/2019, 4:09 PM: A follow-up email was sent to Chairperson Aguilar. 06/24/2019, 3:38 PM: A second follow-up email was sent to Chairperson Aguilar.

This page intentionally left blank

ASSEMBLY BILL 52 AND SECTION 106 NATIVE AMERICAN CONSULTATION RECORD
State Route 57 Tonner Canyon BMP Detention Basin Construction Project (EA 0Q2700), Brea, Orange County, California

Groups/Individuals Contacted	Date of Project Notification Letter	Date of Tribal Response to Letter	Date and Results of Follow-up Telephone Calls and/or Emails
Pechanga Band of Luiseño Indians Mark Macarro, Chairperson *Luiseño*	05/28/2019	No response was received.	06/14/2019, 4:09 PM: A follow-up email was sent to Chairperson Macarro. 06/24/2019, 3:38 PM: A second follow-up email was sent to Chairperson Macarro. No response was received.
Rincon Band of Luiseño Indians Jim McPherson, Tribal Historic Preservation Officer *Luiseño*	05/28/2019	06/05/2019, 9:16 AM: A response letter from Destiny Colocho, Tribal Historic Preservation Officer, was sent via email. Ms. Colocho stated that the project location "is not within the Luiseño Aboriginal Territory" and recommended that a tribe within the project area be contacted.	*No follow-up necessary.*
Rincon Band of Luiseño Indians Bo Mazzetti, Chairperson *Luiseño*	05/28/2019	*See above entry.*	*No follow-up necessary.*
San Luis Rey Band of Mission Indians San Luis Rey Tribal Council *Luiseño*	05/28/2019	No response was received.	06/14/2019, 4:11 PM: A follow-up email was sent to the Tribal Council. 06/24/2019, 3:39 PM: A second follow-up email was sent to the Tribal Council. No response was received.
Soboba Band of Luiseño Indians Scott Cozart, Chairperson *Luiseño*	05/28/2019	No response was received.	06/14/2019, 4:11 PM: A follow-up email was sent to Chairperson Cozart. 06/24/2019, 3:39 PM: A second follow-up email was sent to Chairperson Cozart. No response was received.

This page intentionally left blank