Caldecott Tunnel Bores 1, 2, and 3 Rehabilitation and Ventilation Upgrade Project

ALAMEDA AND CONTRA COSTA COUNTY, CALIFORNIA
DISTRICT 4 – ALA/CC – 24 (PM R5.80/R6.24 and R0.00/R0.60)
EA 04-0J540 / EFIS 0414000011

Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment and Draft Section 4(f) Evaluation

Prepared by the
State of California, Department of Transportation

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

January 2025

General Information about This Document

What's in this document:
The California Department of Transportation (Department), as assigned by the Federal Highway Administration (FHWA), has prepared this Initial Study/Environmental Assessment (IS/EA) and Draft Section 4(f) Evaluation, which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Alameda and Contra Costa County, California. The Department is the lead agency under the National Environmental Policy Act (NEPA). and the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document.
- Additional copies of this document and the related technical studies, are available for review at the Caltrans District 4 office at 111 Grand Avenue, Oakland, CA 94612. This document may be downloaded at the following website: (https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs)
- Attend the public hearing. January 22, 2025
- We'd like to hear what you think. If you have any comments about the proposed project, please attend the public meeting and/or send your written comments via postal mail or email to the Department by the deadline.

  Send comments via:

  - Postal mail to: Caltrans District 4
    Attn: Brycelyn Hendrix, Environmental Scientist
    Office of Environmental Analysis, Caltrans District 4, 111 Grand Avenue P.O. Box 23660, MS-8B, Oakland, CA 94623-0660
  - Email to: brycelyn.hendrix@dot.ca.gov.
  - Online comment form, which can be navigated to using the project website: https://dot.ca.gov/caltrans-near-me/district-4/d4-projects/d4-caldecott-tunnel-upgrade
  - Phone line: (855) 367-3269.
- Be sure to send comments by the deadline: **February 6, 2025**
- What happens next:

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

Alternative Formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Brycelyn Hendrix, Environmental Planning, 111 Grand Avenue P.O. Box 23660, MS-8B, Oakland, CA 94623; (855) 367-3269 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY to Voice), 1 (800) 735-2922 (Voice to TTY), 1 (800) 855-3000 (Spanish TTY to Voice and Voice to TTY), 1-800-854-7784 (Spanish and English Speech-to-Speech) or 711.

04-CC-24 – PM R5.80/R6.24 and R0.00/R0.60
EA: 04-0J540
Project No. 0414000011

This project will rehabilitate Bores 1, 2, and 3 of the Caldecott Tunnel at PM R5.80/R6.24 and R0.00/R0.60 on State Route 24 in Alameda and Contra Costa Counties. This project will preserve the structural integrity of the tunnel and extend its service life.

INITIAL STUDY with Proposed Mitigated Negative Declaration/Environmental Assessment and Draft Section 4(f) Evaluation

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C)
49 USC 303

THE STATE OF CALIFORNIA
Department of Transportation

Responsible Agencies: California Transportation Commission

David Ambuehl

FOR Dina A. El-Tawansy
District 4 Director
California Department of Transportation
CEQA/NEPA Lead Agency

12/30/2024
Date

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

Brycelyn Hendrix, Environmental Scientist
Office of Environmental Analysis, Caltrans District 4,
111 Grand Avenue P.O. Box 23660,
MS-8B, Oakland, CA 94623-0660
brycelyn.hendrix@dot.ca.gov.

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans or the Department) proposes to rehabilitate the Caldecott Tunnel Bores 1, 2 and 3. The project will preserve the structural integrity of the tunnel, improve ventilation performance and fire-fighting operational response, and extend its service life.

Determination

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

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

- The proposed project would have no effect on growth, recreation, population and housing, land use planning, mineral resources, energy, air quality, agriculture and forest resources, geology and soils, or hydrology and water quality.
- In addition, the proposed project would have less than significant effects to aesthetics, biological resources, community character or community resources, noise, utilities and service systems, public services, hazardous wastes and hazardous materials, greenhouse gases (GHGs), transportation, tribal cultural resources, wildfires, and mandatory findings of significance.

With the following mitigation measures incorporated, the proposed project would have less than significant effects to cultural resources:

> **Mitigation Measure Cultural 1:**
> **Historic Resource Preservation:** Prior to construction, Caltrans will prepare a HAER (Historic American Engineering Record). In consultation with Section 106 stakeholders and the State Historic Preservation Officer (SHPO), Caltrans will develop strategies specific to the Caldecott Tunnel and its significance. These strategies will be captured in a Memorandum of Agreement (MOA) to be negotiated between Caltrans as the CEQA and NEPA lead agency, the stakeholders, and the SHPO. Caldecott Tunnel Bores 1 and 2 would remain eligible for listing on the National Register of Historic Places (NRHP).

_____ _____

Dina A. El-Tawansy
District Director
District 4
California Department of Transportation

Date

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Chapter 1 Proposed Project

1.1 INTRODUCTION

The California Department of Transportation (Caltrans or the Department) is the lead agency under CEQA and NEPA, as assigned by the Federal Highway Administration (FHWA), for the proposed Tunnel Rehabilitation Project (project).

Caltrans proposes to rehabilitate Bores 1, 2, and 3 of the Caldecott Tunnel at Postmile (PM) R5.80/R6.24 and R0.00/R0.60 on State Route (SR-) 24 in Alameda and Contra Costa Counties. Figures 1, 2, and 3 are project location and vicinity maps. The project scope includes, but is not limited to, installing a new fire suppression and ventilation system and performing maintenance and rehabilitation work for Caldecott Tunnel Bores 1, 2, and 3. The project will include repair and patching of the tunnel wall, liner, and the exhaust and supply plenums, applying Methacrylate treatment on the entire floor of the upper and lower plenum slabs, removing and replacing Portland Pozzolana Cement (PPC) slabs with rapid strength concrete (RSC), rehabilitating tunnel cross passages, and repairing and replacing all gutters, culverts, and drainage inlets. For more information, please refer to Section 1.3 and Section 1.4.

This Project is funded by the State Highway Operation and Protection Program (SHOPP), under the Bridge Rehabilitation and Replacement Program 20.XX.201.110.

NEPA Assignment

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

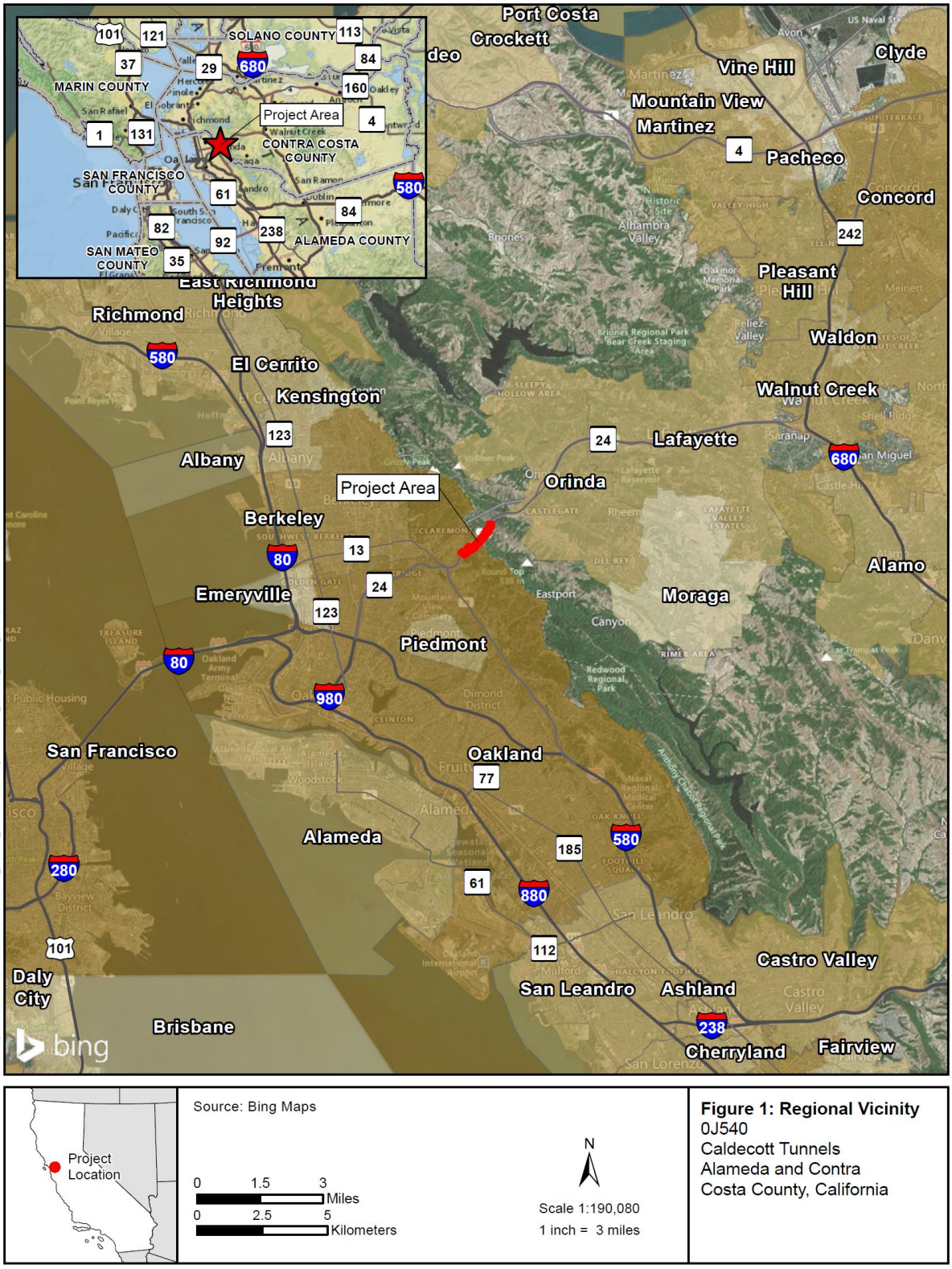


Figure 1: Regional Vicinity
0J540
Caldecott Tunnels
Alameda and Contra Costa County, California

Figure 1. Regional Vicinity

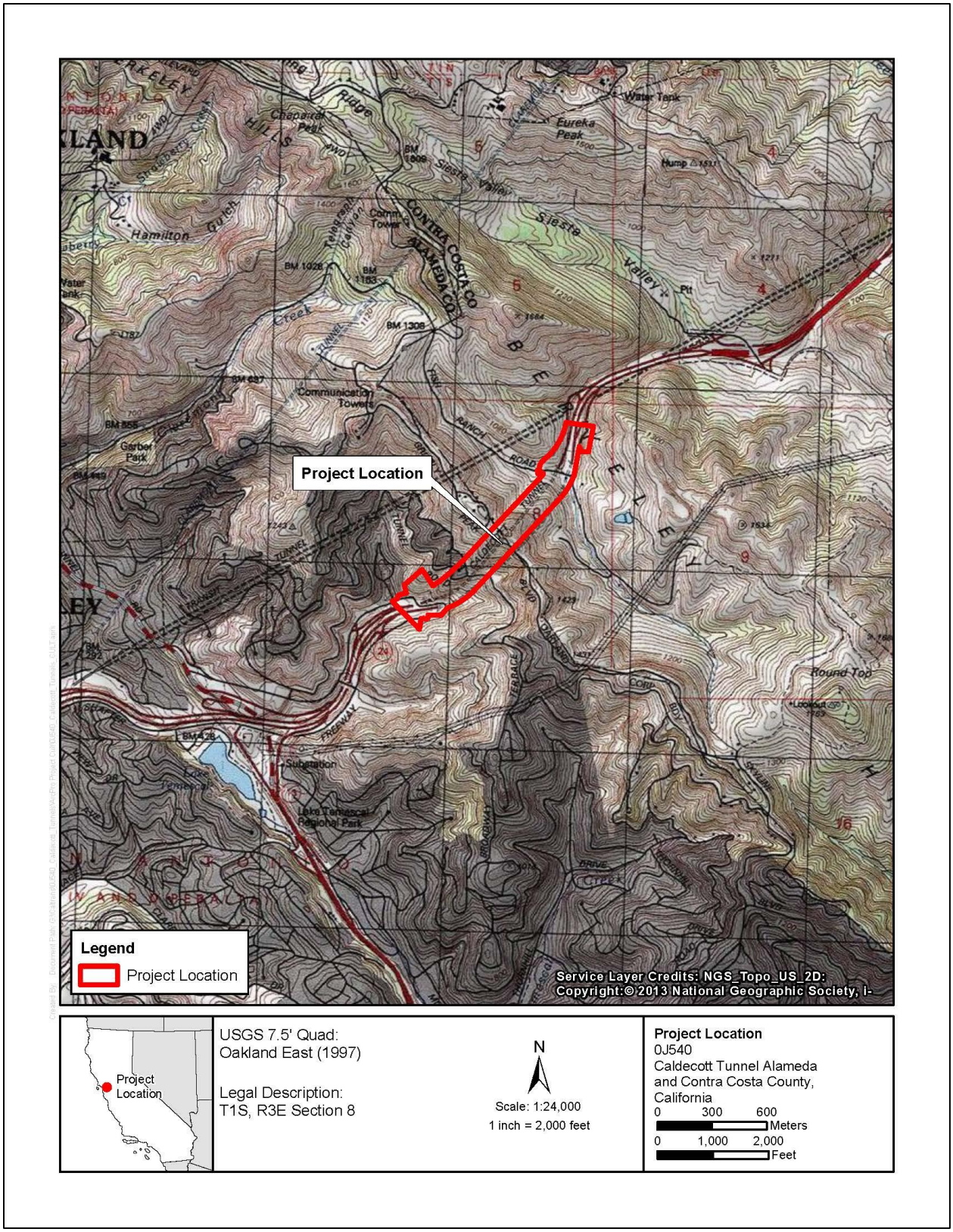


Figure 2. Project Location

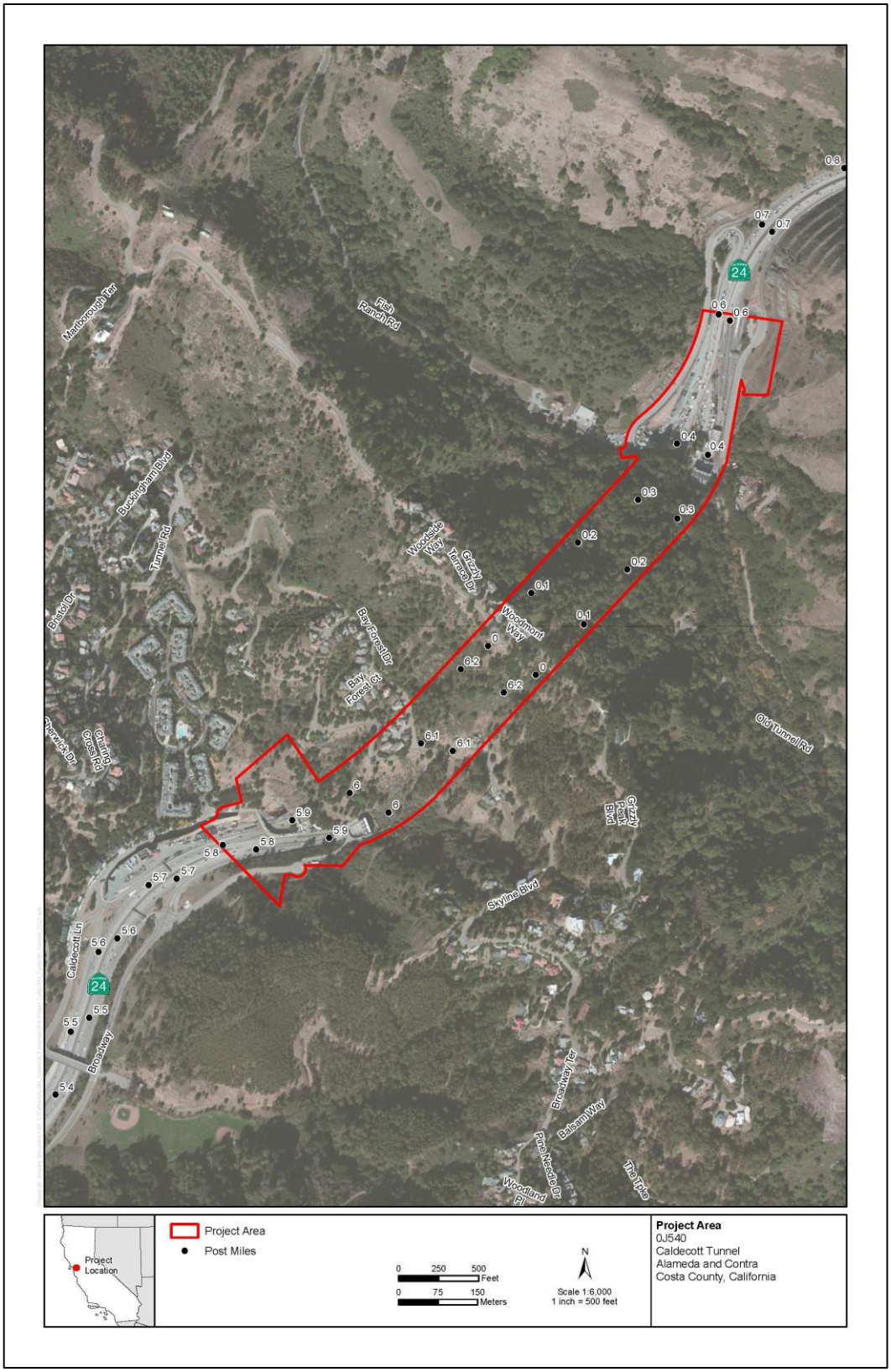


Figure 3. Project Study Area

1.2 PURPOSE AND NEED

1.2.1 Purpose

The purpose of the Project is to preserve the structural integrity, improve the performance of the tunnel, and extend its service life.

1.2.2 Need

The project is needed because Caltrans Division of Structure Maintenance and Investigation (SM&I) and District 4 identified deficiencies during inspection and concluded that the three bores required upgrades. If not addressed, the deficiencies would trigger more frequent maintenance and lead to more extensive repairs in the future. An independent consultant was tasked by the Division of Engineering Services (DES) and District 4 to perform a risk analysis exploring the ventilation capacities of the complex tunnel/tubes within the State of California to address smoke from potential vehicle fires. The risk analysis concluded that Caldecott Tunnel Bores 1, 2, and 3 were at the top risk priority in the State and recommended ventilation upgrades.

1.2.3 Independent Utility and Logical Termini

Federal Highway Administration (FHWA) regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that the action evaluated:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope.
2. Have independent utility or independent significance (be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made).
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

The proposed project includes logical starting and ending points, or termini, that are centered around the rehabilitation of the existing tunnel. The project would have independent utility, which means that the proposed improvements can be implemented within the project limits, and completion of other projects would not be required to gain the operational benefits of the proposed improvements. The project does not preclude consideration of alternatives for other reasonable, foreseeable transportation improvements in the area. In addition, the project is not a segment of a larger project or a commitment to a larger project with significant environmental effects. Therefore, the project has independent utility and logical termini and meets the regulations cited above.

1.3 PROJECT DESCRIPTION

Project Background

Caltrans proposes to rehabilitate Bores 1, 2, and 3 of the Caldecott Tunnel at postmile R5.80/R6.24 and R0.00/R0.60 on SR-24 in Alameda and Contra Costa Counties (Figures 1, 2, and 3). SR-24 is an east-west route connecting Alameda and Contra Costa Counties. The Alameda County portion of the route is approximately 6.24 miles long and begins at Interstate (I) 580/I-980 in Oakland and runs eastward through the Caldecott Tunnel before ending at the Alameda-Contra Costa County line. The Contra Costa portion of SR-24 is approximately 9.14 miles long, beginning at the Alameda-Contra Costa County line and ending at I-680 in Walnut Creek.

The Caldecott Tunnel consists of four borings built into the Oakland-Berkeley Hills (Figures 4, 5, and 6). Bores 1 and 2 are two lanes each. Bore 1 measures 3,615 feet and Bore 2 measures 3,609 feet. Both bores are horseshoe-shaped arched reinforced concrete tunnels that frame a 22-foot roadway. A portal building sits atop each end of Bores 1 and 2 to accommodate ventilation equipment. Bore 3 is horseshoe-shaped arched reinforced concrete tunnel that also frames a 22-foot roadway. It is 3,371 feet long with a portal building on top of each end. The portal buildings for these bores are nearly identical. They are each two level, four chamber rectangular reinforced concrete structures with Art Deco facades. The interiors house large exhaust and fresh air fans as well as offices, storage rooms, and electrical equipment.

There is an additional Operations Maintenance and Control (OMC) building on the west end, or west portal, of the Caldecott Tunnel. This building also contains offices, storage rooms, and electrical equipment. This building is used to monitor safety within all bores of the Caldecott Tunnel. Figure 4 shows an aerial view of all four bores of the Caldecott Tunnel, the portal buildings, and the OMC building.

Caldecott Tunnel Bore 4 was constructed in 2012 and is not part of this project.

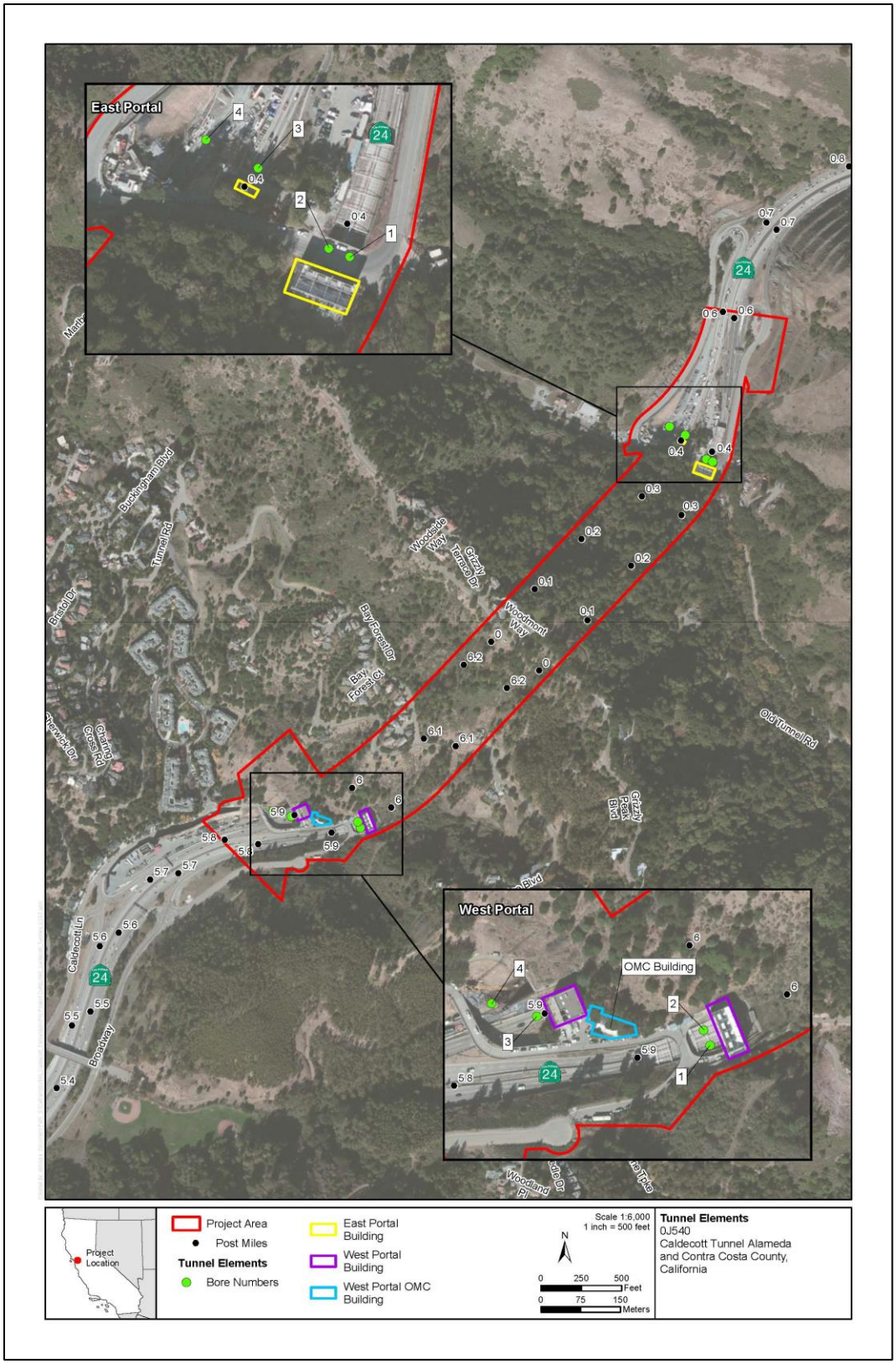


Figure 4. Tunnel Elements

Source: East Bay Times

Figure 5. Existing View of Caldecott Tunnel, West Portal. From right to left, Bores 1, 2, 3, 4.

Source: Google Maps

Figure 6. Existing View of Caldecott Tunnel, East Portal. From right to left, Bores 1, 2, 3, 4.

Existing Conditions

Bores 1, 2, and 3 of the Caldecott Tunnel consist of two main components, or chambers. The lowest chamber is the driving lane, or roadway tunnel, which is the area of the tunnel used and seen by the public. The chambers positioned above the roadway tunnel are known as the plenum, or open air space. Within Bores 1 and 2, the plenum is divided in half horizontally (Figure 7), and in Bore 3, the plenum is divided in half vertically (Figure 8).

For Bores 1 and 2, the exhaust plenum is located immediately above the ceiling of the roadway tunnel. This plenum is used to blow out smoke or other airborne debris from the tunnel. The fresh air plenum is situated above the exhaust plenum. This chamber is used to bring in outside air to circulate through the tunnel (Figure 7).

For Bore 3, both the exhaust and fresh air supply plenums are located immediately above the roadway tunnel. The exhaust plenum is on the left side, and the fresh air supply plenum is on the right side (Figure 8).

The existing ventilation system in Bores 1 and 2 consists of eight total fans. There are two exhaust fans and two fresh air supply fans located in each of the east and west portal buildings. The fans circulate air through the plenums that run the length of the tunnel. Each of the eight fans is equipped with an automated damper, or flap, that can be used to separate the tunnel plenum from the portal building. There are air holes along the north wall of the fresh air supply plenum that connect the fresh air supply plenum to the roadway tunnel below.

In Bore 3, the existing ventilation system consists of four total fans. There are two exhaust fans and two fresh air supply fans within the west portal building. Each fan is equipped with a damper to separate the tunnel plenum from the portal building. There are air holes spaced every 15 feet along the length of the exhaust and fresh air supply plenum ceilings that allow the air to circulate throughout the roadway tunnel. Each of these air holes is also equipped with a damper that can open and close to regulate air flow. As illustrated below by the cross-sections of the existing conditions of Bores 1 and 2 (Figure 7), and Bore 3 (Figure 8), the fans are not visible to the traveling public, as they are located within the portal buildings.

In addition to the fire and smoke protection provided by the ventilation systems, there is also a fire protection system that includes fire water supplies located throughout each tunnel bore and within each portal building. This fire water supply consists of two main pumps located at the west end of Bore 3. There is also a sprinkler system in the OMC building.

Within the lowest section of each bore, the roadway tunnel, there are cross passages running horizontally between the bores, also called adits. These cross passages are used to allow emergency personnel or maintenance personnel to easily cross between and access each bore. There are three cross passages between Bores 1 and 2 and one cross passage between Bores 3 and 4. These cross passages are not shown in the

diagram below, but they are accessible from the driving lanes and are visible via illuminated signs with exit arrows.

The walls of the tunnel, the plenums, and the adits are made of concrete slabs. To prevent water buildup within the tunnel, there are drainage inlets on the north and south sides of all three bores that feed into a reinforced concrete pipe. There are 12 manholes along the centerline of each bore.

There is one electrical power distribution system that supplies power to all four bores of the Caldecott Tunnel. This power distribution system has two 12 kilovolt substations, one on the west portal end of the tunnel and one on the east portal end.

For additional images of the existing conditions within Bores 1, 2, and 3, please refer to Figures 20 through 26 in Section 2.2.3.

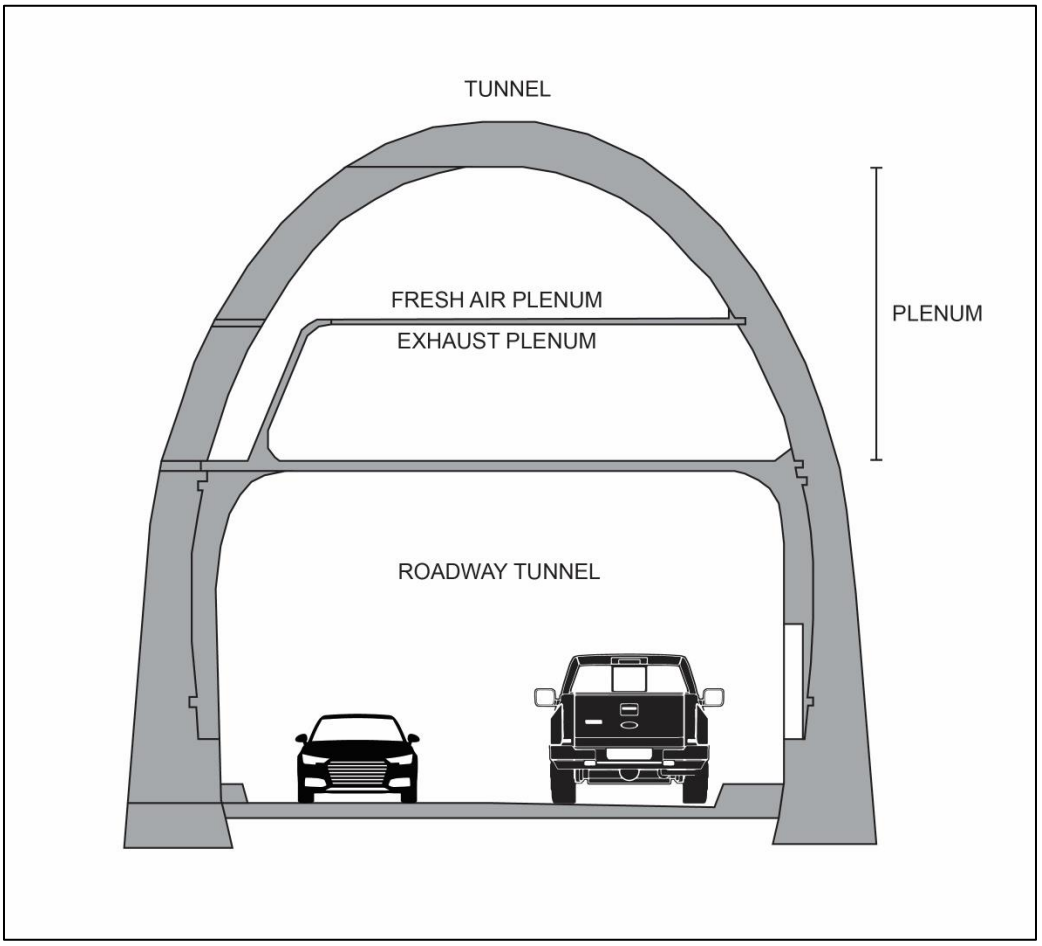


Figure 7. Cross Section of Existing Conditions for Bores 1 and 2.

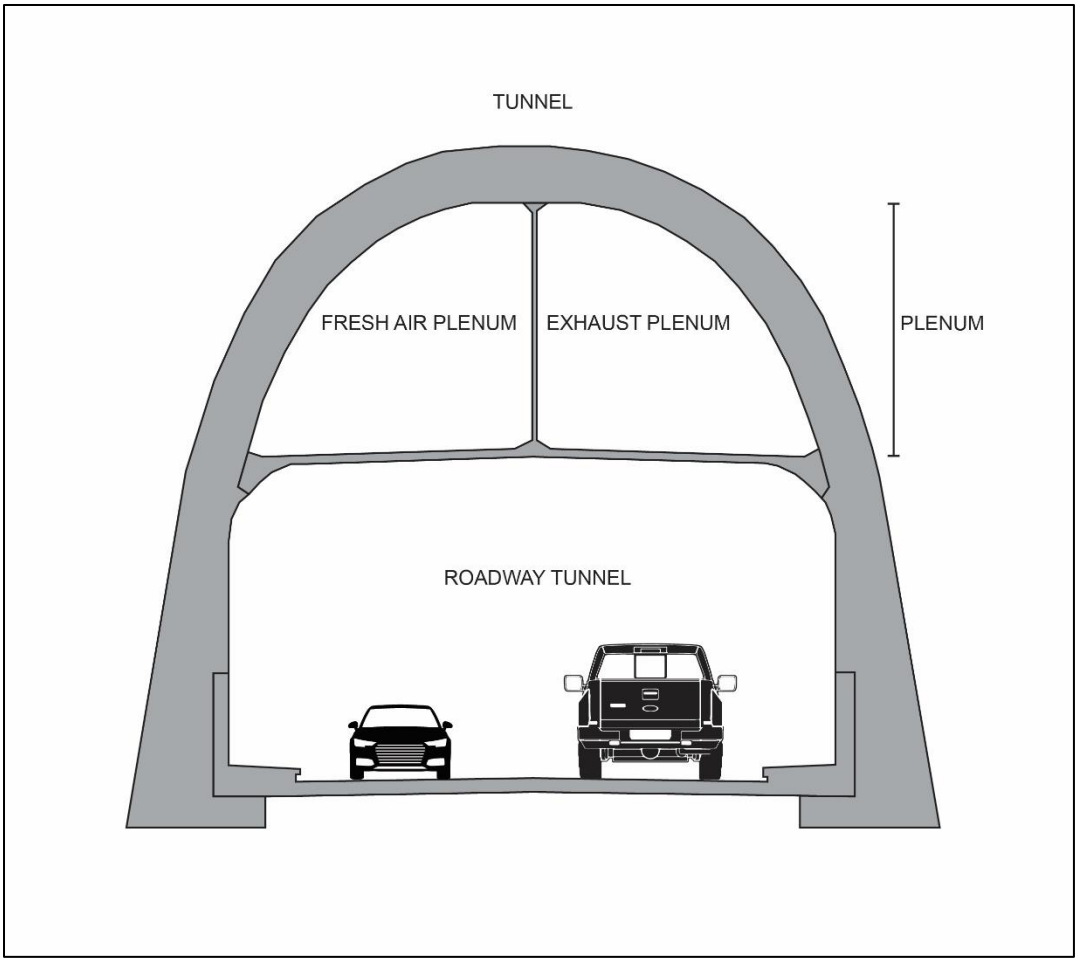


Figure 8. Cross Section of Existing Conditions for Bore 3.

Proposed Project Improvements

This project was initiated in response to Division of Structures Maintenance and Investigations (SM&I) routine inspections, with the latest inspection dated May 2020. Later inspections were completed by District 4 Maintenance, Construction, and Operations Divisions. These two inspections identified a number of proposed rehabilitation measures and improvements, which are described in detail below. Additional specifics for each of these proposed measures will be finalized during the next phase of this project, the Design Phase.

Ventilation System Upgrades

The proposed project would upgrade the existing ventilation system for Bores 1, 2, and 3 to improve smoke management for emergency exit by the public and firefighting in the event of a fire related emergency. There are two different design options for ventilation improvements in Bores 1 and 2. Option 1 will install Saccardo Nozzles in Bores 1 and 2.

A Saccardo Nozzle introduces an air jet into a tunnel, at a high velocity to drive the tunnel air in the desired single direction. Option 2 will install jet fans in Bores 1 and 2. Both options will involve the installation of jet fans in Bore 3. These options are described in more detail in Section 1.4.

Tunnel Repairs

The proposed project will repair and patch any cracking or fragmented concrete. Any unsound concrete will be removed. Weepholes, which are small openings used to allow water to escape the tunnel, will be cleaned out. Any other cracking, rust, or salt deposits will be cleaned and removed. Concrete curbs and metal guardrails will also be replaced. These repairs will cover an area of approximately 8,500 square feet for Bore 1, 8,800 square feet for Bore 2, and 5,500 square feet for Bore 3.

Plenum Repairs

The proposed project will rehabilitate and repair all plenums in Bores 1, 2, and 3. Repairs will include rehabilitation of the floor slabs for each plenum and replacement of the slab with thicker, sturdier cement.

Adit Repairs

The proposed project will conduct rehabilitation work on the adits, or tunnel cross passages. The existing adits do not have adequate lighting or ventilation systems. Caltrans will also repair the adit floors and walls as well as remove any lead contaminants found within.

Safety Updates

The proposed project will incorporate a number of safety updates throughout Bores 1, 2, and 3. Updates will include installing a new sprinkler system; repairing or replacing all lane markers and safety markers to ensure visibility; upgrading the existing call boxes, fire extinguishers and fire extinguisher boxes, and carbon dioxide sensors; installing a public address (PA) system; upgrading the lighting system; and upgrading the changeable message signs (CMS) at the west portal. Tunnel lightning may be upgraded to meet current Caltrans standards.

Electrical System Upgrades

For the west portal (shown in Figure 9), the proposed project will place a new transformer and motor control center (MCC) in the existing Bore 3 portal building. The two pads for the new electrical equipment will measure approximately 31 feet by 3 feet 10 inches and 31 feet by 6 feet 6 inches. A 4-inch conduit will be placed along the existing roadway or existing conduit pathway to connect the transformer and MCC to the West Bore 1 and Bore 2 ventilation room. Any trenching required will be a combination of horizontal directional drilling (HDD) and open trenching.

For the east portal (shown in Figure 9), the proposed project will place a new transformer and motor control center (MCC) adjacent to the existing electrical equipment pad east of the portal entrance. This equipment will require two concrete pads, one measuring approximately 31 feet by 3 feet 10 inches and 31 feet by 6 feet 6 inches. A 4-inch conduit will be placed using open trenching along the existing roadway or existing conduit pathway to connect the transformer and MCC to the power substation near the east entrance of Bores 1 and 2. All trenching will be completed by hand or using a mini excavator. All trenches will be backfilled and placed to avoid existing trees and other vegetation.

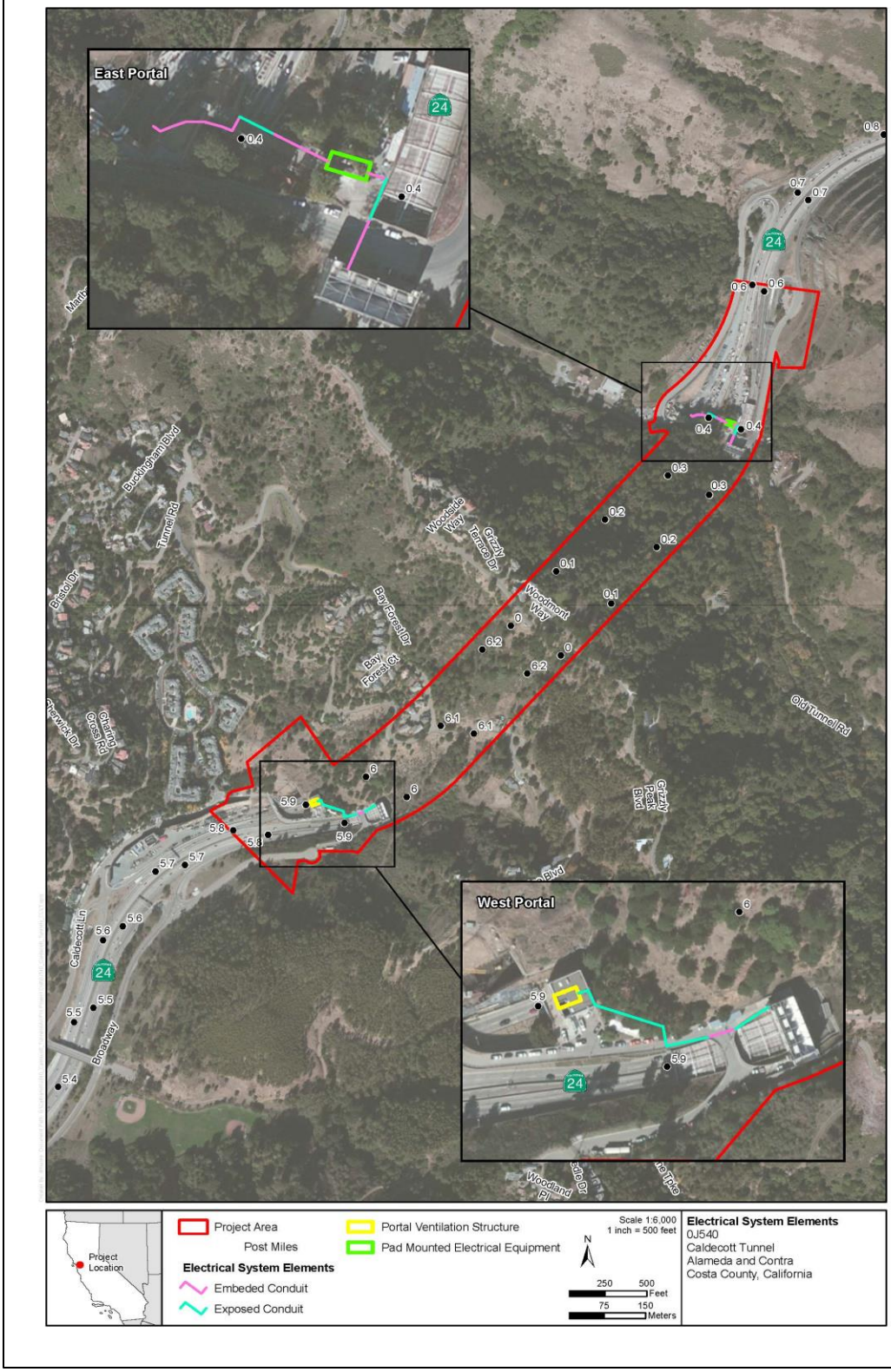


Figure 9. Electrical System Elements.

1.4 PROJECT ALTERNATIVES

This section describes the proposed alternatives developed to meet the purpose and need of the project while avoiding or minimizing environmental impacts. The Project consists of one Proposed Build Alternative and one No-Build Alternative. The Proposed Build Alternative would include the rehabilitation measures described above in Section 1.3 and would include two design options for ventilation improvements in Bores 1 and 2, described in more detail below. The ventilation improvements in Bore 3, also described below, will be implemented in both Proposed Build Alternative Option 1 and Proposed Build Alternative Option 2.

1.4.1 Proposed Build Alternative

All work for this project will be the same across Bores 1, 2, and 3, except for the two design options for ventilation improvements. Build Alternative Option 1 will install Saccardo Nozzles in Bores 1 and 2. Build Alternative Option 2 will install jet fans in Bores 1 and 2. Both options will install jet fans in Bore 3. Due to space limitations and layout in the tunnel plenum and fan room, Saccardo Nozzles in Bore 3 are not a viable option. The common design features are described above in Section 1.3.

Build Alternative Option 1, Saccardo Nozzle: Bores 1 and 2

This option would install a Saccardo Nozzle Ventilation System using supply fans to improve smoke management and to facilitate the safe exit by the traveling public from the tunnel during a fire, as well as to help firefighting efforts by managing the smoke from a fire (Figure 10, Figure 11, and Figure 12). This system includes one Saccardo Nozzle, with an opening approximately 22 feet long by 7.5 feet wide, to be placed at an angle in the fresh air plenum. This nozzle placement will also require an approximately 6.5 foot high by 7-foot-wide duct to be placed in the fresh air plenum. Placement of the Saccardo Nozzle will be finalized during the next phase of this project, the Design Phase.

The Saccardo Nozzle will require the use of an existing fan or the construction of new fans. The Saccardo Nozzle will provide air flow in a single direction. Upgrading the existing system to include the Saccardo Nozzle will allow for additional ventilation along the length of the tunnel that is not possible with the existing fan layout.

The scope of work for this option includes the following modifications inside each tunnel and portal building:

1. Cut openings in the roadway tunnel ceiling to construct a Saccardo Nozzle opening. The existing ceiling of the roadway will be removed to create an indentation, or niche opening, in which the Saccardo Nozzle will sit. Cutting into

the existing ceiling will allow for the nozzle opening to sit flush with the existing ceiling of the tunnel.

2. Construct a dividing wall downstream from the air flow produced by the Saccardo Nozzle in the plenum. This wall will have an access door and motorized dampers for plenum ventilation.
3. Replace or refurbish the existing supply fans in the west portal fan room with new supply fans.
4. Install new motorized dampers in the fresh air and exhaust air plenum floors to ventilate the plenums.
5. Close all fresh air supply openings in the tunnel wall.
6. Close all exhaust air openings in the tunnel ceiling.
7. If the existing supply and exhaust fans at west and east portals are removed, new smaller fans will be added to ventilate the plenums.

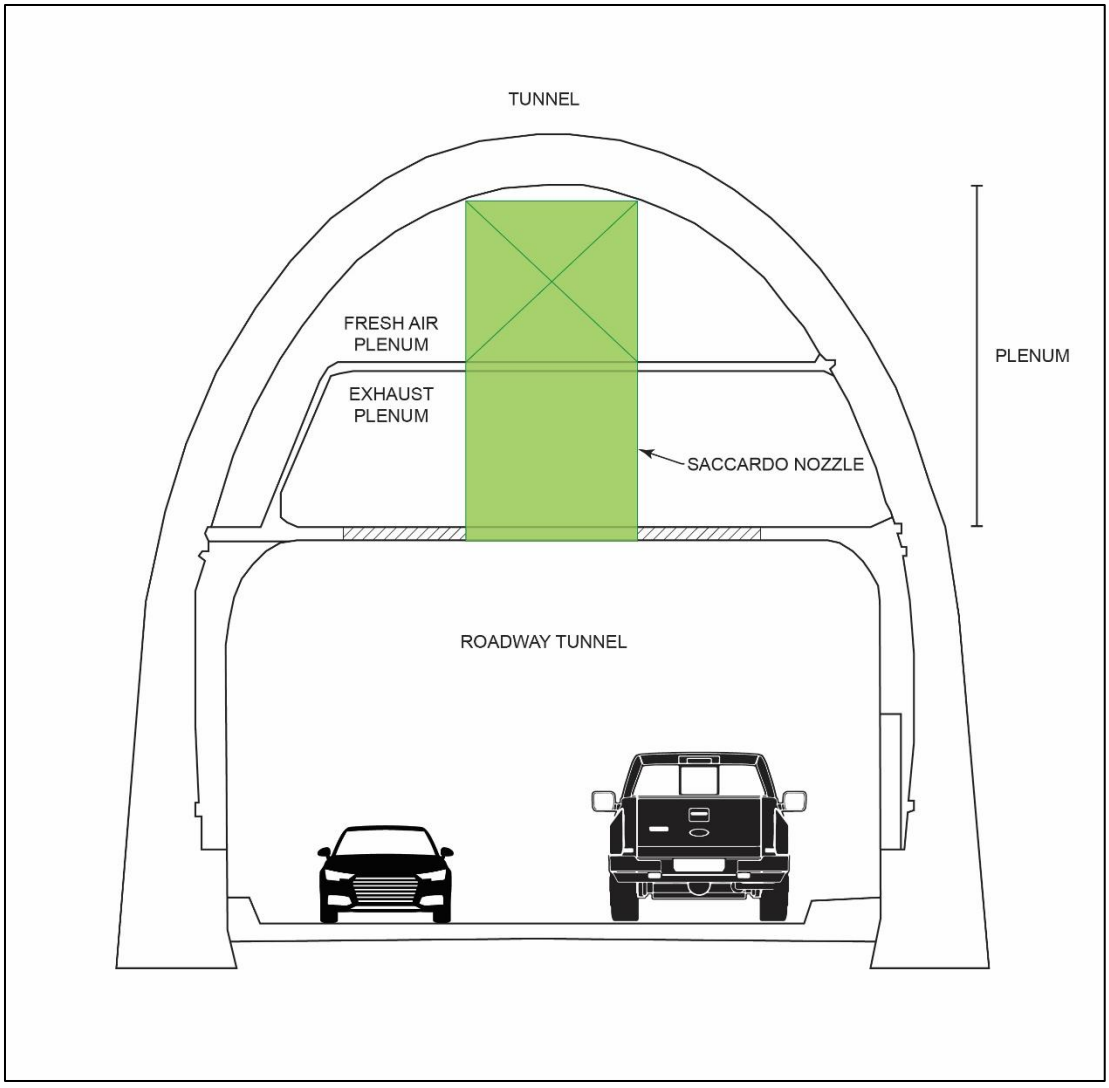


Figure 10. Cross Section of Proposed Build Alternative Option 1.

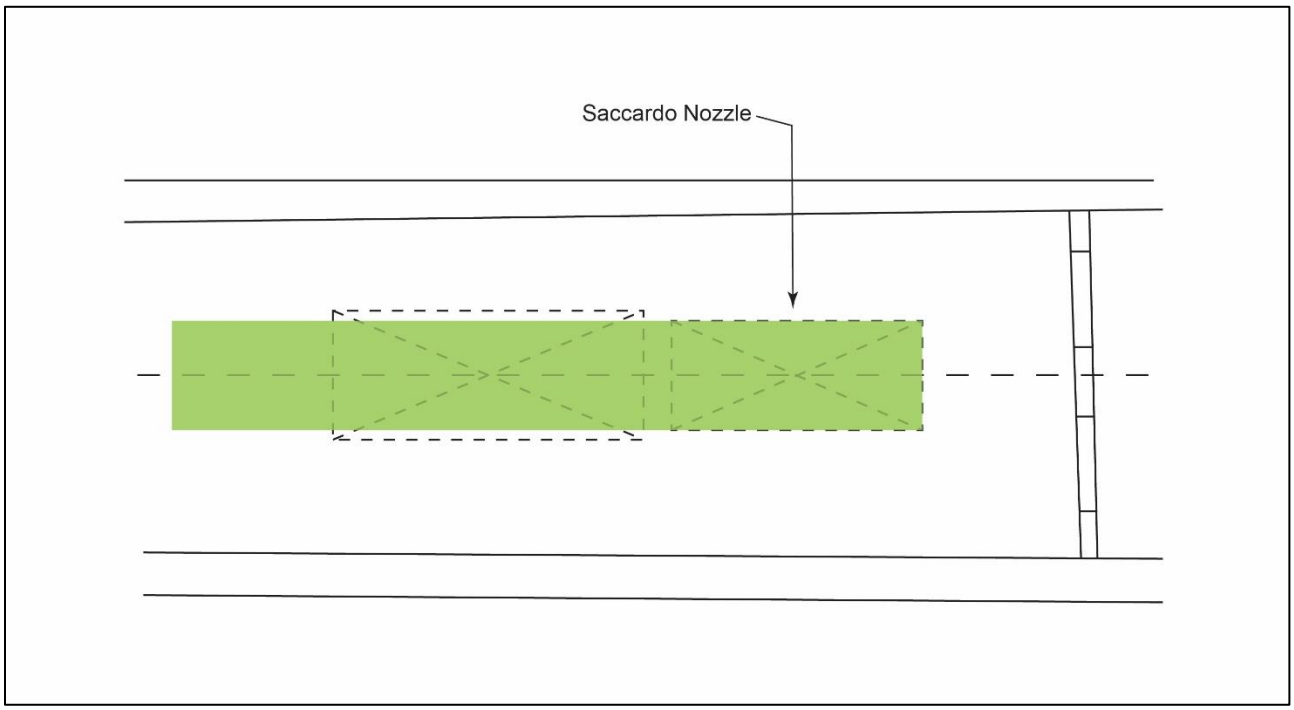


Figure 11. Plan View of Proposed Build Alternative Option 1.

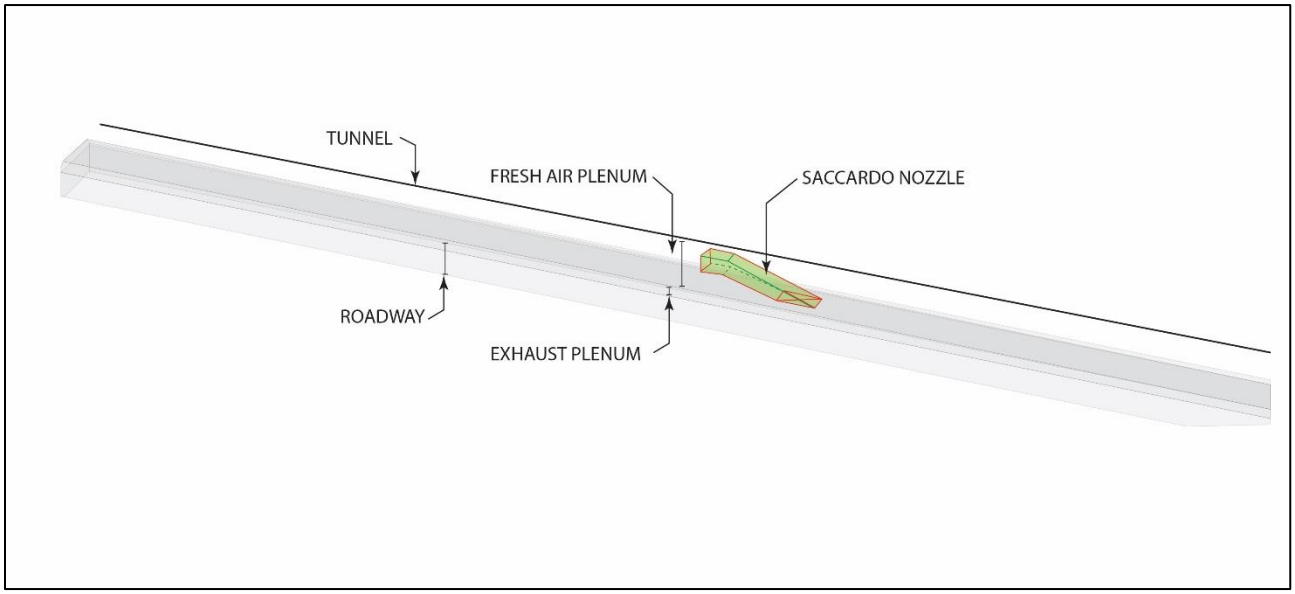


Figure 12. Oblique View of Proposed Build Alternative Option 1.

Build Alternative Option 2, Jet Fans: Bores 1 and 2

This option would install a jet fan ventilation system to improve smoke management and to facilitate the safe exit by the traveling public from the tunnel during a fire, as well as help firefighting efforts by managing the smoke from a fire (Figure 13, Figure 14, and Figure 15). This option would include approximately four rows of fans placed throughout the tunnel. There will be two fans per row, with eight fans total. Construction will be required only in the exhaust air plenum. The exact location of each fan will be determined in the next phase of this project, the Design Phase.

The jet fans are designed to provide air flow in a single direction of traffic flow but can provide reversible directional ventilation, depending on the design, to meet State Fire Marshall requirements. Reversing the direction of ventilation downhill away from the traffic flow would require additional rows of jet fans. The final number of fans will be determined during the Design Phase of the project.

Upgrading the ventilation system to this proposed jet fan system will promote better air circulation throughout the tunnel. Spacing the fans along the length of the tunnel provides additional air flow that is not possible with the existing system.

The scope of work for this option includes the following modifications inside each tunnel and portal building:

1. Cut openings in the roadway tunnel ceiling to construct jet fan niches. The existing ceiling of the roadway will be removed to create an indentation, or niche, in which the jet fans will sit. Creating this higher ceiling in this area will allow for the jet fans to sit flush with the existing ceiling of the tunnel.
2. Seal all fresh air supply openings in the tunnel wall.
3. Seal all exhaust air openings in the tunnel ceiling.
4. Install new motorized dampers in the fresh air and exhaust air plenums floors to ventilate the plenums.

   If the existing supply and exhaust fans at the west and east portals are removed, new smaller fans will be added to ventilate the plenums.

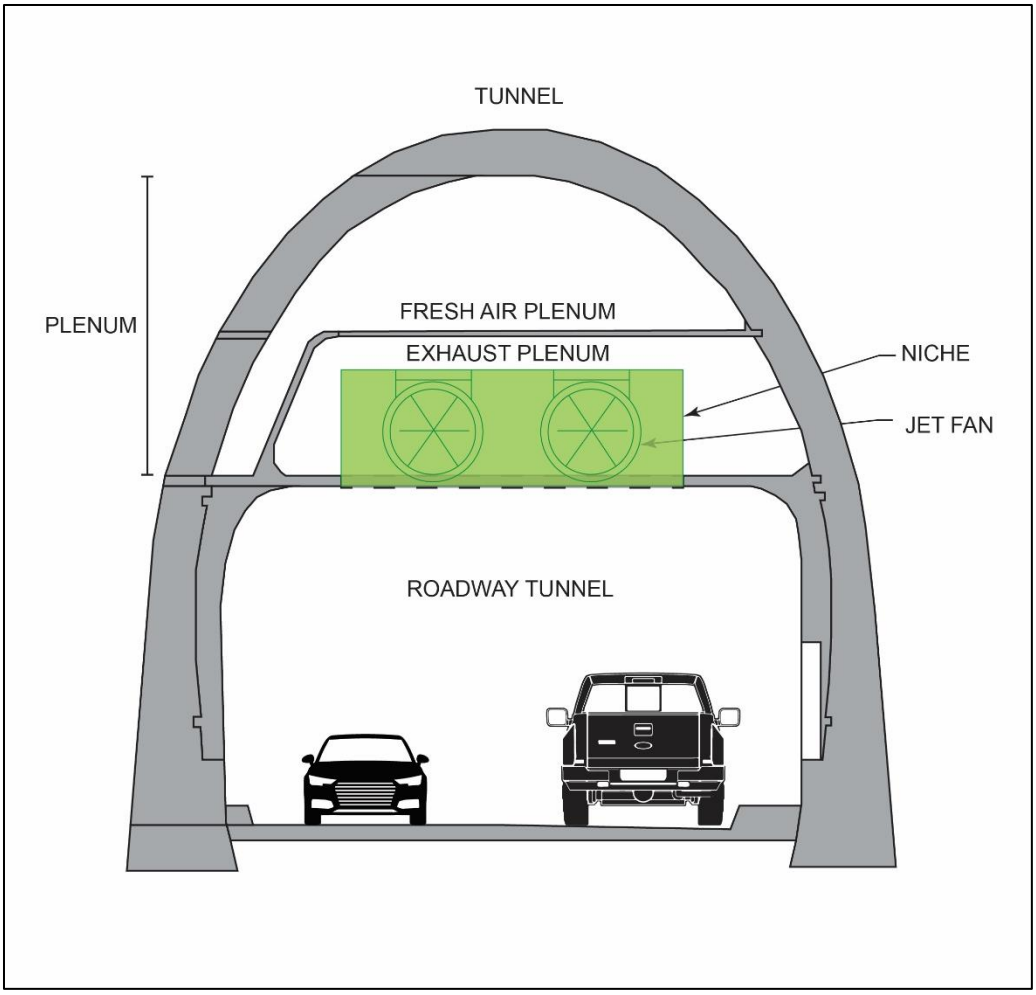


Figure 13. Cross Section of Proposed Build Alternative Option 2.

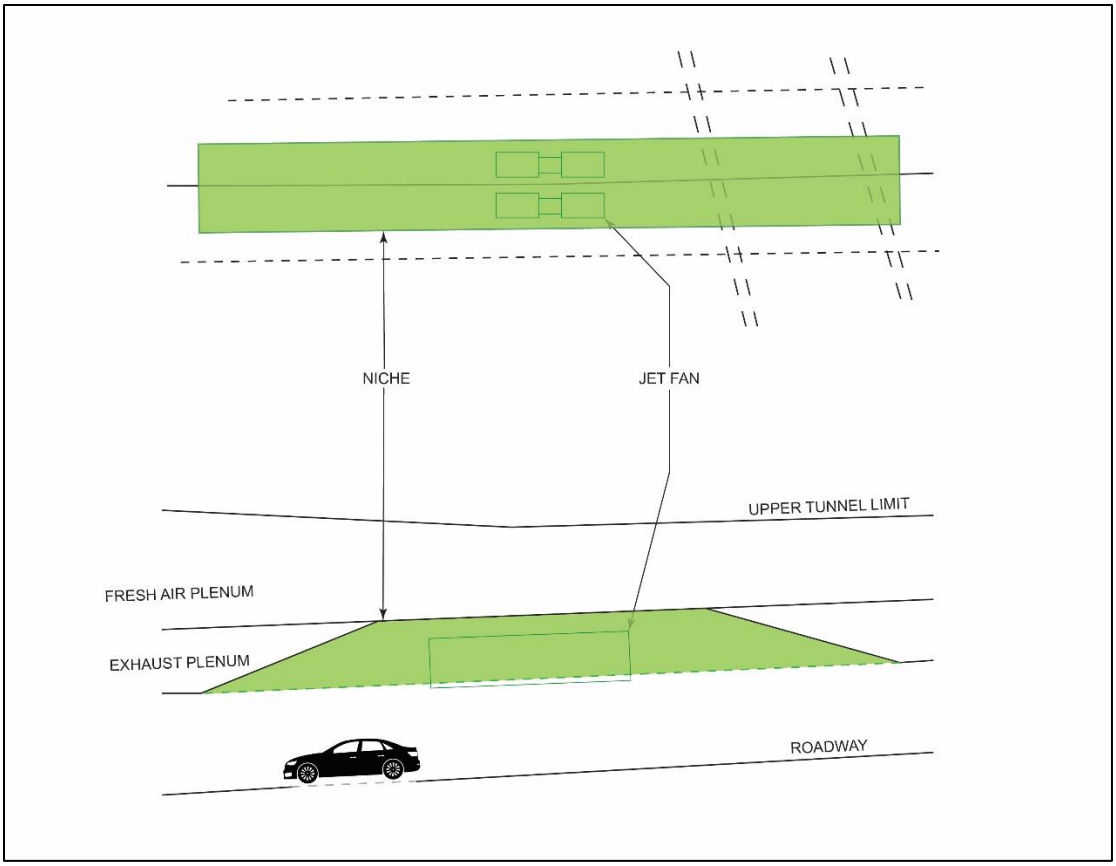


Figure 14. Plan view (top) and side view (bottom) of Proposed Build Alternative Option 2.

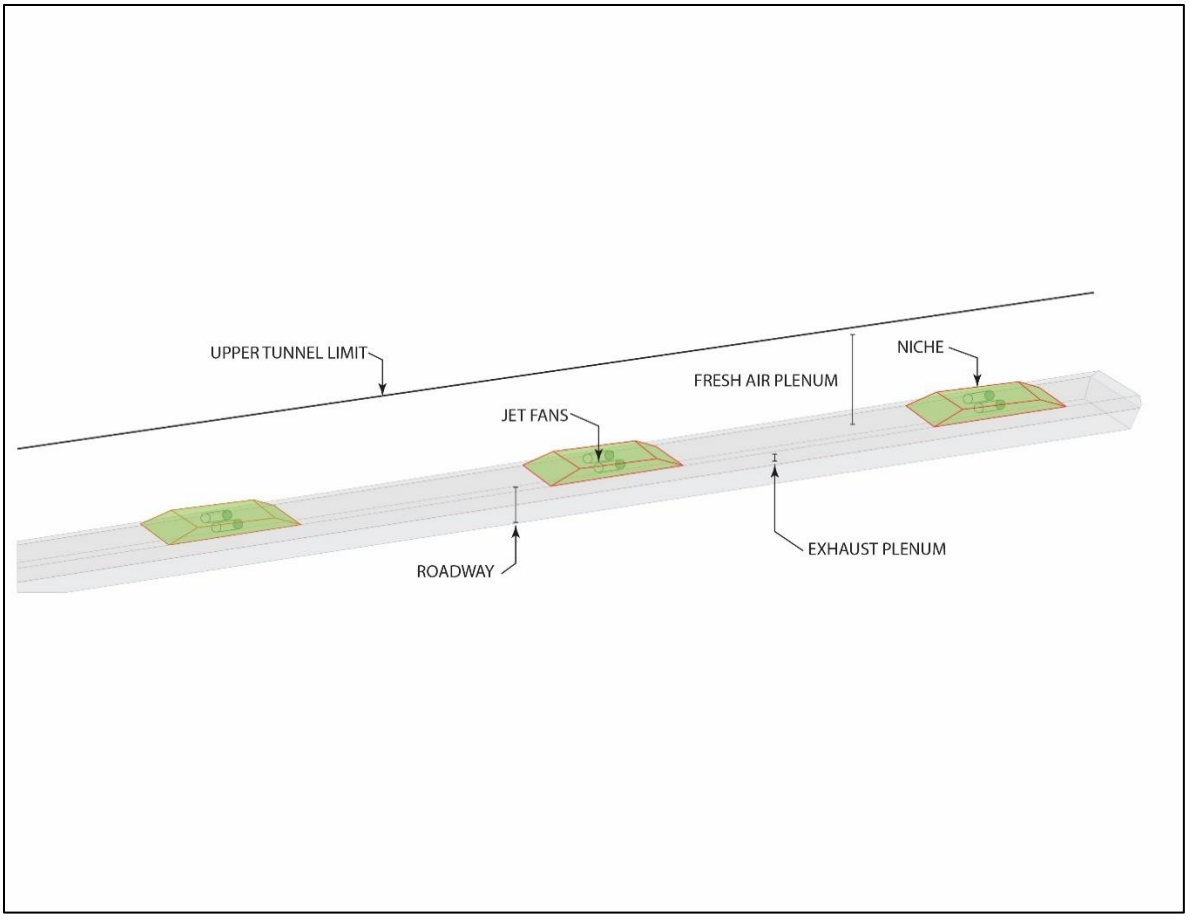


Figure 15. Oblique view of Proposed Build Alternative Option 2.

Both Build Alternative Options, Jet Fans: Bore 3

For Bore 3, the proposed project would install approximately 16 jet fans in eight rows of two throughout the length of the tunnel. This jet fan ventilation system would improve smoke management and facilitate the safe exit by the traveling public from the tunnel during a fire, as well as help firefighting efforts by managing the smoke from a fire. The exact location of each fan will be determined in the Design Phase of the project.

The jet fans are designed to provide air flow in a single direction of traffic flow but can provide reversible directional ventilation, depending on the design, to meet State Fire Marshall requirements. Reversing the direction of ventilation downhill would require additional rows of jet fans. Upgrading the ventilation system to this proposed jet fan system will promote better air circulation throughout the tunnel. Spacing the fans along the length of the tunnel provides additional air flow that is not possible with the existing system.

This scope of work includes the following modifications inside Bore 3 and its portal building (Figure 16, Figure 17, and Figure 18):

1. Cut openings in the tunnel ceiling to construct jet fan niches. The existing ceiling of the roadway will be removed to create an indentation, or niche, in which the jet fans will sit. Creating a higher ceiling in this area will allow for the jet fans to sit flush with the existing ceiling of the tunnel.
2. Remove the center wall between the fresh and exhaust air plenums at the jet fan niche locations.
3. Seal all of the supply and exhaust air openings in the tunnel ceiling.
4. Install new motorized dampers in the fresh air and exhaust air plenum floors to ventilate the plenums.
5. If the existing supply and exhaust fans at the west and east portals are removed, new smaller fans will be added to ventilate the plenums.

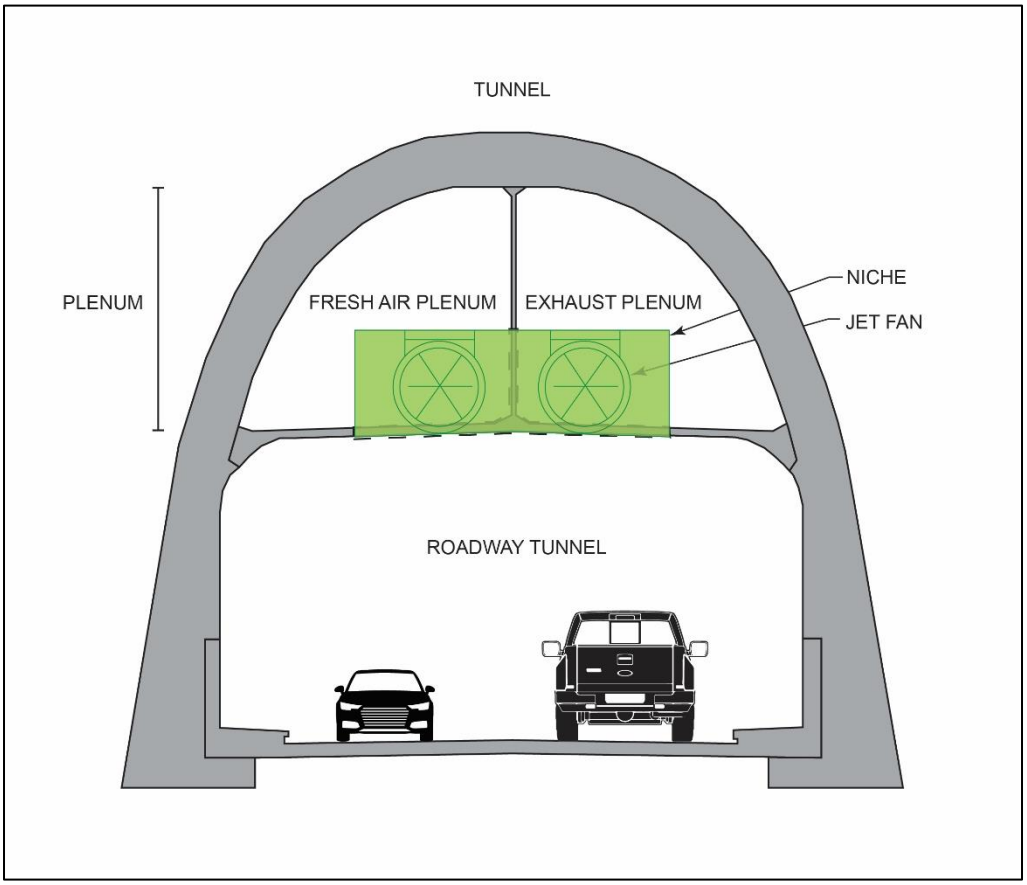


Figure 16. Cross Section of Proposed Build Alternative ventilation work for Bore 3.

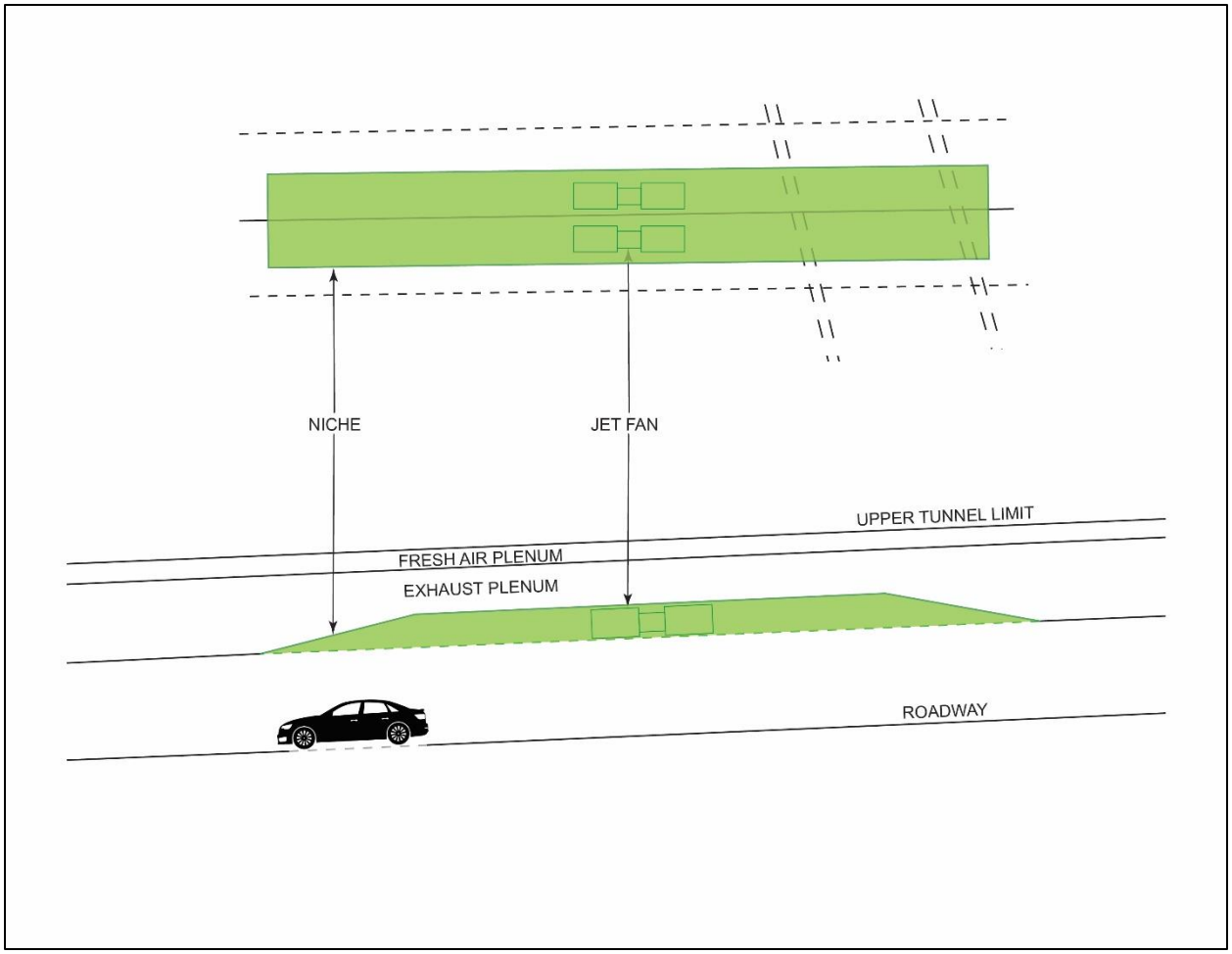


Figure 17. Plan view (top) and side view (bottom) of Proposed Build Alternative ventilation work for Bore 3.

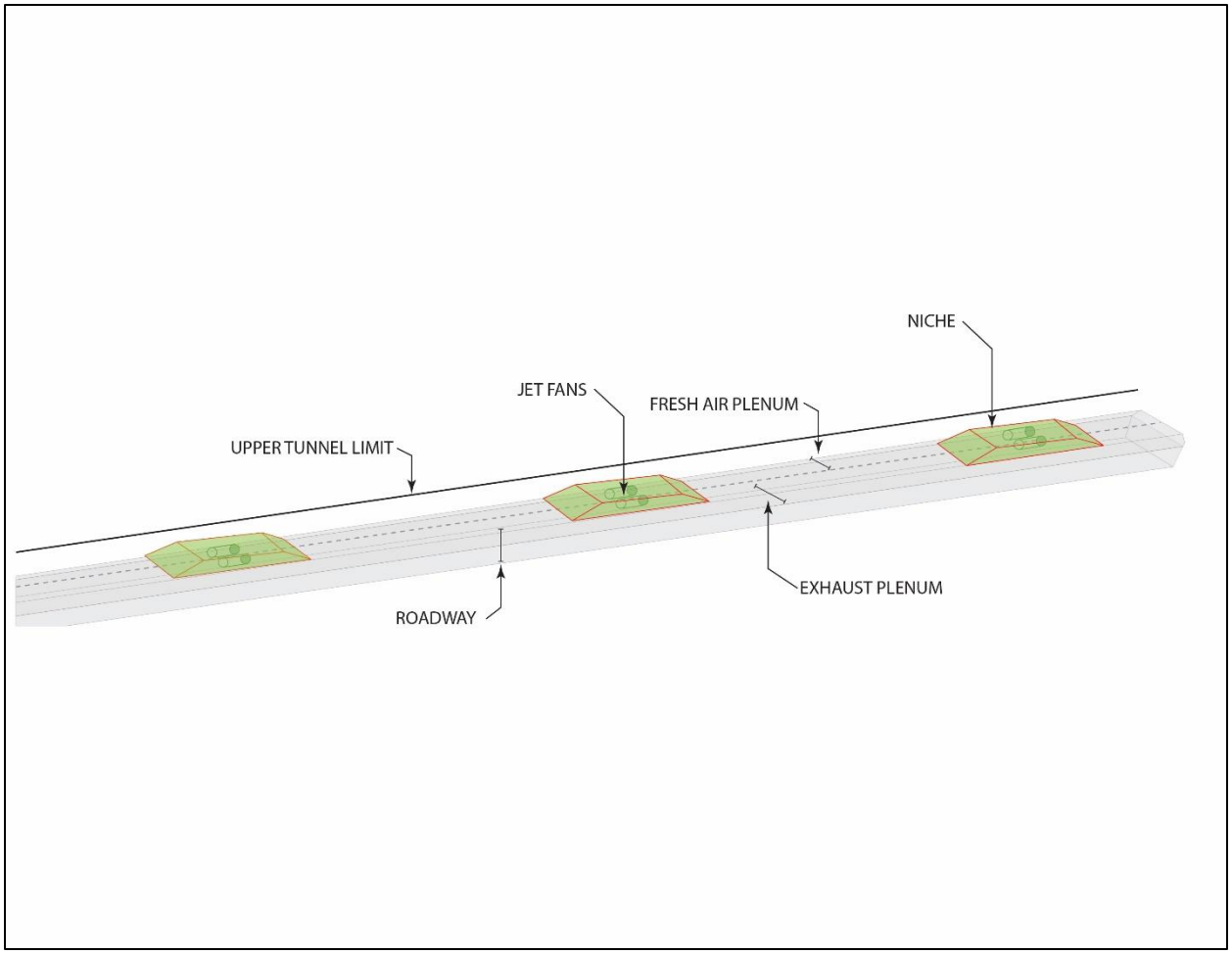


Figure 18. Oblique view of Proposed Build Alternative ventilation work for Bore 3.

1.4.2 Construction

The following section describes the estimated construction schedule for the proposed project, right-of-way considerations, traffic considerations, and potential utility relocations.

Construction Schedule

Construction of the proposed project is anticipated to begin in November 2026 and would last approximately three years to November 2029, with approximately 664 working days. The estimated number of working days for the Proposed Build Alternative will be refined in the Design Phase of the project, and could vary depending on contractor resources.

Right of Way and Staging

The proposed project footprint is entirely within Caltrans right of way, and primarily includes the Caldecott Tunnel and 500 feet of adjacent roadway. Additional project work will be conducted around the east and west portals of the tunnel, including at the OMC building, portal buildings, and at the on and off ramps. The project footprint is within the Project Construction Area (PCA) and includes all areas directly temporarily or permanently impacted through construction activities. With the exception of the portal building and OMC building upgrades, the majority of the proposed project work will be conducted within the SR-24 mainline, which is isolated by retaining walls and fences.

Additional right of way use is not anticipated. Railroad involvement is not anticipated. Construction staging will occur on paved areas and at the eastbound SR-24 Fish Ranch Road on and off ramp near the east end of the tunnel.

Transportation Management Plan (TMP)

During the final design phase for the Build Alternative, a TMP will be prepared in accordance with Caltrans requirements and guidelines to minimize the construction-related delays and inconvenience for travelers in the project area. The TMP will address the potential traffic impacts as they relate to staged construction, detours, and other traffic handling concerns associated with construction of the proposed project. It will include:

- Distribution of press releases and other documents as necessary to notify the public of upcoming road closures and detours;
- Coordination with CHP, local law enforcement and emergency services on contingency plans;
- Utilization of portable Changeable Message Signs, CHP Construction Zone Enhanced Enforcement Program, and Freeway Service Patrol where possible to minimize delays.

As SR-24 is a heavily travelled corridor, only one bore will be closed in each direction at any given time during off-peak hours. The Proposed Build Alternative will require both temporary closures from 10pm to 4am and extended duration closures for up to 55 hours for Bores 1, 2 and 3. All closures will maintain at least one tunnel (two lanes) open to traffic in each westbound and eastbound direction. Bore 1 or Bore 2 may be closed concurrently with the closure of Bore 3. Additionally, alternative westbound and eastbound routes will be suggested via SR 4 or I-580 and advance warning will be provided to the public.

Due to limited merging and sight distance, the closure of Bore 1 will require the closure of the eastbound SR-24 Tunnel Road/Broadway on-ramp on the Oakland side of the tunnel and the closure of eastbound SR-24 Fish Ranch Road off-ramp (Exit 7A) on the Orinda side of the tunnel. Both ramp closures will require detours.

Detour 1: Eastbound SR-24 Tunnel Road/Broadway on-ramp.

The closure of the eastbound SR-24 Tunnel Road/Broadway on-ramp will require that traffic wishing to use this on-ramp is detoured westward along Broadway to the nearest available eastbound SR-24 on-ramp located at Brookside Avenue and Broadway (1.5 miles).

Detour 2: Eastbound SR-24 Fish Ranch Road off-ramp (Exit 7A).

The closure of eastbound SR-24 Fish Ranch Road off-ramp (Exit 7A) will require that traffic continue on eastbound SR-24 until the next available exit at Wilder Road (Exit 7B). Eastbound SR-24 traffic wishing to access Fish Ranch Road, Grizzle Peak Boulevard and Claremont Avenue on the Orinda side of the tunnel, will be detoured to westbound SR-24 Wilder Road on-ramp. Traffic will merge with westbound SR-24 and immediately take the westbound Fish Ranch Road off-ramp (Exit 7A). Traffic will continue along the frontage road (Old Tunnel Road) until it meets Fish Ranch Road. The closure of the eastbound SR-24 Fish Ranch Road off-ramp will add approximately 1.5 miles for those wishing to access Fish Ranch Road from eastbound SR-24.

The closure of Bores 2 and 3 will not require closures of on- or off-ramps and associated detours. There are no proposed detours for SR-24 traffic to be directed to Fish Ranch Road, Grizzle Peak Boulevard and Claremont Avenue as an alternative route for passage through the Caldecott Tunnel. All closure plans will be notified to the public prior to construction via press releases/media alerts, paid advertisements, and the project website. Signs specifying closure times of the ramps will be posted at least 72 hours in advance. All closures will be coordinated with the California Highway Patrol (CHP), local agencies of jurisdiction, and emergency services.

For the duration of construction, it is anticipated that both lanes in Bore 1 will be closed first for approximately nine months. Both lanes in Bore 2 will be closed for approximately eight months and both lanes in Bore 3 will be closed for approximately one month.

Utility Relocations

Verification of utilities will be required and the need for potholing will be ascertained following the verification process. Based on the current project scope, potential protections, adjustments, or relocations include PG&E Electrical, AT&T Fiber Optic, and water facilities.

1.4.3 No Build Alternative

Under the No Build Alternative, there would be no rehabilitation of the existing tunnel. If the project is not constructed, continued and accelerated deterioration of the concrete pavement, drainage, and delineation in Bores 1, 2, and 3 will occur. If not addressed, the deficiencies of this aging tunnel would trigger more frequent maintenance and lead to more extensive repairs in the future. This alternative does not satisfy the purpose and need of the project. The No Build Alternative is considered the environmental baseline against which potential environmental effects of the build alternatives are evaluated.

1.5 COMPARISON OF ALTERNATIVES

This section compares the Proposed Build Alternative and the No Build Alternative that are analyzed in this environmental document. The criteria for evaluation is primarily the respective Alternatives' adherence to the project's purpose and need.

The Proposed Build Alternative meets the purpose and need of the project. Implementing the improvements described above would preserve the structural integrity of the tunnel, improve ventilation performance and fire-fighting operational response, and extend its service life. Proposed Build Alternative Option 1 and Option 2 would improve ventilation performance. Option 1, the Saccardo Nozzles, allows for unidirectional air flow, which must be evaluated for compliance with State Fire Marshall requirements. Option 2, the jet fans, allows for multidirectional air flow, and meets State Fire Marshall requirements. Compliance with State Fire Marshall requirements is pending, an option will be selected based on coordination of compliance and remaining design and budgetary criteria. Option 1 would require constructing a Saccardo Nozzle and niche in the exhaust air plenum/roadway tunnel ceiling, while Option 2 would require the construction of jet fans and niches in the exhaust air plenum/roadway tunnel ceiling. The number of working days would be similar for both of the Proposed Build Alternative options.

Under the No Build Alternative, there would be no rehabilitation of the existing tunnel. If the proposed project is not constructed, continued and accelerated deterioration of the concrete pavement, drainage and delineation in Bores 1, 2, and 3 will occur. If not addressed, the deficiencies of this aging tunnel would trigger more frequent maintenance and lead to more extensive repairs in the future. This alternative does not satisfy the purpose and need of the project.

After the public circulation period, all comments will be considered, and the Department will select a preferred alternative and make the final determination of this proposed project's effect on the environment. Under the California Environmental Quality Act (CEQA), if no unmitigable significant adverse impacts are identified, the Department will prepare a Mitigated Negative Declaration (MND).

Similarly, if the Department, as assigned by the Federal Highway Administration (FHWA), determines the National Environmental Policy Act (NEPA) action does not significantly impact the environment, the Department will issue a Finding of No Significant Impact (FONSI).

1.6 ALTERNATIVES CONSIDERED BUT ELIMINATED

Rehabilitation and Ventilation Upgrades for Bore 3 Only

Under this alternative, rehabilitation and ventilation upgrades would be completed only for Bore 3, leaving Bores 1 and 2 in their current condition. Rehabilitation and ventilation measures would include all of the items described in Section 1.3, including the addition

of jet fans. This alternative was developed because of the historic nature of Bores 1 and 2; rehabilitating only Bore 3 would avoid any impacts to the two historic bores. However, this alternative does not meet the purpose and need of this project. The purpose and need of this project state that the project should rehabilitate Caldecott Tunnel Bores 1, 2, and 3 as well as preserve the structural integrity of the tunnel, improve ventilation performance and fire-fighting operational response, and extend its service life. This alternative would only rehabilitate one bore and would not preserve the structural integrity of the remainder of the tunnel, improve ventilation performance or fire-fighting operational response throughout all three bores, or extend the service life of all three bores.

Rehabilitation of Bores 1, 2, and 3, without Ventilation Upgrades

This alternative would include all of the rehabilitation measures described in Section 1.3, but would not include ventilation upgrades, either Saccardo Nozzles or jet fans, for any of the three bores. This alternative was also designed to avoid impacts to the historic Bores 1 and 2, as the ventilation upgrades could impact the historic integrity of the bores. However, this alternative does not meet the purpose and need of this project. The purpose and need of this project state that the project should rehabilitate Caldecott Tunnel Bores 1, 2, and 3 as well as preserve the structural integrity of the tunnel, improve ventilation performance and fire-fighting operational response, and extend its service life. By not including any ventilation upgrades, this alternative would not improve the ventilation performance or fire-fighting operational response.

1.7 PROJECT FEATURES

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

Table 1. Project Features

Resource Area	Project Feature Number	Description
Aesthetics and Visual Resources	PF-AES-1	**Vegetation Preservation**: Project construction activities should avoid and protect existing vegetation where feasible outside the bores from the contractor's operations, equipment, and materials storage. High visibility temporary fencing (THVF) will be placed around vegetation to be protected before roadway work begins. Truck watering for vegetation should be provided when automated irrigation is interrupted by construction.

Resource Area	Project Feature Number	Description
Aesthetics and Visual Resources	PF-AES-2	**Construction Staging**: Construction staging areas should be located in paved areas, if possible.
Aesthetics and Visual Resources	PF-AES-3	**Erosion Control**: After construction, all areas cleared within the Project limits for uses such as contractor access, staging, and trenching operations would be treated with appropriate erosion control measures (such as mulch, hydroseed, and fiber rolls) where required.
Aesthetics and Visual Resources	PF-AES-4	**Construction Lighting**: Construction lighting would be limited to within the area of work and avoid light trespass through the use of directional lighting and shielding as needed.
Aesthetics and Visual Resources	PF-AES-5	**Construction Waste**: Unsightly materials, equipment storage and staging should be placed so that they are not visible within the foreground of the highway corridor to the maximum extent feasible. Where such siting is unavoidable, material and equipment shall be visually screened to minimize visibility from the roadway and sensitive receptors outside the project area.
Cultural Resources	PF-CUL-1	**Discovery of Human Remains**: If remains are discovered during excavation, all work within 60 feet of the discovery would halt and Caltrans' Cultural Resource Studies Office would be called. Caltrans' Cultural Resources Studies Office Staff would assess the remains and, if determined human, would contact the County Coroner as per Public Resources Code (PRC) Sections 5097.98, 5097.99, and 7050.5 of the California Health and Safety Code. If the Coroner determines the remains to be Native American, the Coroner would contact the Native American Heritage Commission who would then assign and notify a Most Likely Descendant. Caltrans would consult with the Most Likely Descendant on respectful treatment and reburial of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.
Cultural Resources	PF-CUL-2	**Discovery of Cultural Materials:** If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a Caltrans qualified archaeologist is contacted to assess the nature and significant of the find.
Greenhouse Gas Emissions (GHG)	PF-GHG-1	**Emissions Reductions:** Implementation of Caltrans Standard Specifications, such as complying with air-pollution-control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, and the use of construction best management practices, would result in reducing GHG emissions from construction activities, including but not limited to: 1. Regular vehicle and equipment maintenance, 2. Limit idling of vehicles and equipment onsite, 3. If practicable, recycle nonhazardous waste and excess material. If recycling is not practicable, dispose of material, 4. Use solar-powered signal boards, if feasible.

Resource Area	Project Feature Number	Description
Paleontology	PF-PAL-1	**Discovery of Paleontological Resources:** If unanticipated paleontological resources are discovered at the job site, do not disturb the resources and immediately: 1) stop all work within a 60-foot radius of the discovery, 2) secure the area, and 3) notify the engineer. Caltrans investigates the discovery and modifies the dimensions of the secured area if needed. Do not move paleontological resources or take them from the job site. Do not resume work within the radius of discovery until authorized.
Tribal Cultural Resources	PF-TCR-1	**Tribal Cultural Resources:** In the event that archaeological resources (sites, features, or artifacts) or Tribal Cultural Resources (as defined by local consulting Tribes and CEQA) are exposed during construction activities, all construction work occurring within 60 feet of the find shall immediately stop until a qualified archaeologist, that meets the Secretary of the Interior Professional Qualifications for Archaeology, can evaluate the significance of the find, in consultation with local Tribes to determine whether or not additional study is warranted.
Transportation and Traffic	PF-TRA-1	**Traffic Management Plan:** A Traffic Management Plan (TMP) would be developed by Caltrans during the Design Phase. The TMP would include elements such as detours, expected lane closures, haul routes, one-way traffic controls to minimize speeds and congestion, flag workers, and phasing to reduce delays and other impacts to local residents as feasible and maintain access for police, fire, and medical services in the area. Prior to construction, Caltrans would notify adjacent property owners, businesses, and agencies regarding construction activities, access changes, and lane closures and detours. In addition, Caltrans would coordinate with the local Fire Department and emergency response services prior to construction to minimize potential disruption to emergency services.
Utilities and Service Systems	PR-UTIL-1	**Trash Management:** All food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed at least once daily from the project limits.
Utilities and Service Systems	PF-UTIL-2	**Notify Utility Owners of Construction Schedule to Protect Utilities:** Caltrans would notify all affected utility companies, such as PG&E, of construction schedules for proposed project work so that they can relocate the gas, telephone, cable, or overhead distribution lines prior to construction and minimize disruption of any utility service.

Resource Area	Project Feature Number	Description
Water Quality	PF-WQ-1	**Water Quality Best Management Practices:** The calculated disturbed soil area (DSA) is less than one acre, thus preparation of a water pollution control plan (WPCP) is required that includes Best Management Practices (BMPs) to reduce the pollutants in stormwater discharges during construction and permanently to the Maximum Extent Practicable (MEP). The construction activities need to comply with the Standard Specifications 13-2 Water Pollution Control Program (WPCP) during construction. BMPs recommended for this project are as follows: • If significant amount of water intrusion is encountered, non-storm water treatment system may be required, pending on the contamination of the water. • The project will involve movement of dirt, demolished materials by construction equipment, adjacent to public roadways. Street sweeping should be utilized to remove tracked sediment. • Sediment control/perimeter control measures such as temporary fiber rolls should be utilized where necessary as a sediment control measure to intercept sheet and concentrated flow runoff. • Temporary drainage inlet protection should be utilized to prevent sediment from entering the current or proposed storm drains. • Concrete wastes shall be managed using concrete washout facilities. • Various waste management, materials handling, and other housekeeping items shall be used throughout the duration of the project. If stockpiles of various kinds are anticipated, it shall be maintained with the appropriate BMPs. • The materials generated may require standard provisions for handling and testing to verify appropriate reuse or disposal options.

1.8 PERMITS AND APPROVALS NEEDED

The proposed project is not anticipated to require any permits from external agencies.

As part of **Mitigation Measure CUL-1**, A Memorandum of Agreement will be developed by Caltrans, in consultation with the stakeholders and the SHPO.

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

2.1 TOPICS CONSIDERED BUT DETERMINED NOT TO BE RELEVANT

This chapter discusses the potential environmental impacts of the proposed tunnel rehabilitation project and the recommended avoidance, minimization and/or mitigation measures (AMMs), and mitigation measures (MMs). The proposed AMMs and MMs are also summarized in Appendix C. A list of abbreviations used in this document is available in Appendix D, the list of technical studies prepared for this proposed project is available in Appendix E, and the list of references is available in Appendix F. In addition, Caltrans' Title VI Policy Statement is included in Appendix G and the biological species list for this proposed project is in Appendix H. This chapter also addresses issues of concern pursuant to CEQA and NEPA. Please see Chapter 3 for the CEQA Checklist and Appendix A for the Individual Section 4(f) evaluation.

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

Land Use

The proposed project study area is a transportation corridor surrounded by land uses that include vacant hillside residential land, mixed housing type residential land, resource conservation area, and East Bay Regional Park District land. The resource conservation area and the land owned by the East Bay Regional Park District covers the top of the tunnel and will not be impacted by the proposed project's rehabilitation work. Land use types within and adjacent to the project study area are shown below in Figure 19.

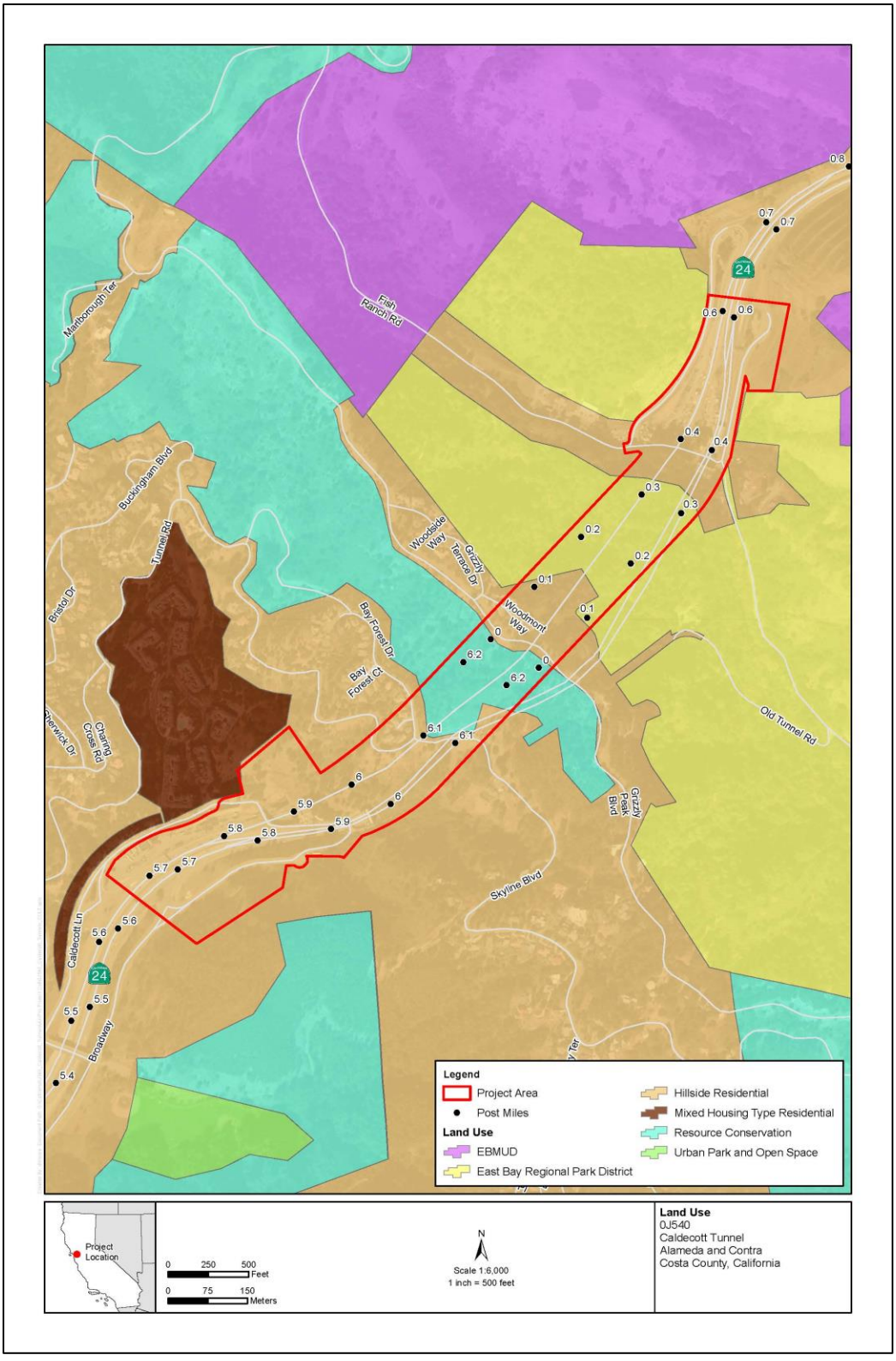


Figure 19. Land Use Designations

As part of this project, Caltrans conferred with Alameda County, Contra Costa County, the City of Oakland, and the City of Orinda to determine if there are any current or proposed developments near the proposed project area. There are no current or proposed developments within half a mile of the proposed project area.

The Proposed Build Alternative will not require any permanent acquisition of properties outside of the Caltrans right of way (ROW). The Proposed Build Alternative and the No Build Alternative would serve existing and planned land uses in the area. Relevant regional, local, and area plans and policies that are applicable to the proposed project include: Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) Plan Bay Area 2050, Alameda County Transportation Commission (ACTC) Countywide Transportation Plan, Alameda County General Plan, City of Oakland General Plan, City of Oakland Department of Transportation (OakDOT) Strategic Plan, the Contra Costa County General Plan, and the City of Orinda General Plan.

Coastal Zone

The proposed project is not located within the California Coastal Zone. As such, no coastal resources would be affected by construction or operation of the project.

Growth

The proposed project would not alter the number of travel lanes along SR-24 or local roads. The project would neither provide new access to an undeveloped area nor influence development opportunities by expanding capacity. Temporary construction activities are not expected to increase the demand for housing. As a result, implementation of the project would not induce growth.

Environmental Justice

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2024, this was $31,200 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964, and related statutes, have been included in this project. The Department’s commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix G of this document.

Title VI states that “No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” Executive Order 12898 requires each federal agency (or its designee) to take the appropriate and necessary steps to identify and address “disproportionately high and adverse” effects of federal or federally funded projects on minority and low-income populations.

Minority and low-income populations are defined using the U.S. Department of Transportation Environmental Justice Order (U.S. DOT Order 5610.2[a]).
The environmental justice analysis conducted for this project includes data from the U.S. Census Bureau and California Communities Environmental Health Screening Tool (CalEnviroScreen), published by the state’s Office of Environmental Health Hazard Assessment (OEHHA). Data from the U.S. Census Bureau and CalEnviroScreen did not identify minority or low-income populations within the project study area.

No minority or low-income populations that would be adversely affected by the proposed project have been identified, as determined above. Therefore, this project is not subject to the provisions of Executive Order 12898.

Farmlands

The proposed project study area is not located near any farmlands or lands zoned for agricultural uses. As such, the project would not irreversibly convert farmland to nonagricultural use.

Floodplains

The proposed project is not located within a 100-year base floodplain. As such, there will be no effects to the 100-year floodplain.

Parks and Recreational Facilities

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

The proposed project area is located adjacent to land owned by the East Bay Regional Parks District. However, all rehabilitation work will be conducted within the Caltrans right of way and will not impact any park or recreational facilities.

Wild and Scenic Rivers

The project study area does not traverse any rivers designated as part of the National Wild and Scenic Rivers System. As such, no wild or scenic rivers would be affected by construction or operation of the project.

Timberlands

The project study area is not located near timberlands. Therefore, the proposed project would not convert timberlands to a non-timberland use or otherwise affect timberlands.

Community Character and Cohesion

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

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

However, impacts from the Proposed Build Alternative would be limited to temporary visual, traffic, and noise impacts. These temporary construction impacts will be addressed by **PF-AES-1 through PF-AES-5, AMM-AES-1 and AES-2, PF-TRA-1, and AMM's NOI-1 through NOI-8** (See Appendix B and Appendix C). This project will not affect the community cohesion of the area or availability of public facilities or services.

The existing footprint as described in Chapter 1.4.2 does not include transit facilities, pedestrian crossings, bicycle crossings, railroads, and waterways. Bicyclists and pedestrians are prohibited from using this freeway facility. Considering the tunnel geometry, it is infeasible to build out complete street features without modifying the tunnel structurally. Furthermore, such tunnel modification is outside of the scope of this project.

Relocations and Real Property Acquisition

This proposed project will be conducted entirely within the Caltrans right of way and will not require any relocations or real property acquisition.

2.2 HUMAN ENVIRONMENT

2.2.1 Utilities/Emergency Services

AFFECTED ENVIRONMENT

Utilities

Power, gas, telecommunications, and water facilities are located within the proposed project area. Pacific Gas & Electric (PG&E) provides gas and electricity service, and American Telephone & Telegraph Company (AT&T) provides telecommunication service. East Bay Municipal Utility District (EBMUD) manages water utilities in the project area.

Emergency Services

Police and traffic enforcement services in the proposed project area are provided by the City of Oakland, the City of Orinda, and the California Highway Patrol. Fire protection and emergency medical services are provided by the City of Oakland Fire Department and the Moraga-Orinda Fire District. The City of Oakland Fire Station No. 7 is located approximately five miles west of the project area, and the Moraga-Orinda Fire District Station 45 is located approximately five miles northeast of the project area.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

Temporary Construction Impacts

Utilities

Construction of the Proposed Build Alternative may require protections, adjustments, or relocations of PG&E, AT&T, and water facilities. Final verifications of utility locations would be performed during the project's Design phase, which may reveal additional utility relocations. For utilities that require relocation, it is anticipated that these utilities would be relocated prior to construction. Implementation of **Project Features UTIL-1**, trash management, and **PF-UTIL-2**, notifying utilities of construction schedule, would reduce any impacts to utilities during construction.

Emergency Services

During construction of the Proposed Build Alternative, temporary lane closures on SR-24 would be required. These closures could result in short-term, temporary impacts to emergency service providers. These impacts would be minimized by a Traffic Management Plan (TMP) as outlined in **Project Feature TRA-1** that will be developed

during the next phase of the project, the Design Phase, in consultation with emergency service providers. The TMP will address the potential traffic impacts as they relate to staged construction, detours, and other traffic handling concerns associated with construction of the proposed project. Additionally, all closure plans, including detour information, will be notified to the public prior to construction via press releases/media alerts, paid advertisements, and the project website. Signs specifying closure times of the ramps will be posted at least 72 hours in advance. All closures will be coordinated with the California Highway Patrol (CHP), local law enforcement, local Fire Departments, and emergency services on contingency plans. Final detour routes will also be coordinated with local agencies of jurisdiction.

Permanent Impacts

Utilities and Emergency Services

The Proposed Build Alternative would not increase the demand for additional utility services in the area and would not permanently impact emergency services. Therefore, there would be no permanent impacts to utilities or emergency services.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no rehabilitation and therefore no impacts to utilities. Emergency services impacts would be minimized by a Traffic Management Plan (TMP) as outlined in **Project Feature TRA-1** that would be developed during the next phase of the project, the Design Phase, in consultation with emergency service providers.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No utility or emergency service-related avoidance, minimization, and/or mitigation measures would be required for the proposed project. The following Project Features, also listed in Appendix B, would be implemented:

PF-UTIL-1: Trash Management: All food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed at least once daily from the project limits.

PF-UTIL-2: Notify Utility Owners of Construction Schedule to Protect Utilities: Caltrans would notify all affected utility companies, such as PG&E, of construction schedules for proposed project work so that they can relocate the gas, telephone, cable, or overhead distribution lines prior to construction and minimize disruption of any utility service. As plans are further developed during the design phase, should any utility impacts be identified, additional Avoidance and Minimization measures may be applied.

2.2.2 Traffic and Transportation/Pedestrian and Bicycle Facilities

REGULATORY SETTING

Caltrans, as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of Federal-aid highway projects (see 23 Code of Federal Regulations [CFR] 652). It further directs that the special needs of the elderly and the disabled must be considered in all Federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). The FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

AFFECTED ENVIRONMENT

Access, Circulation, and Parking

This proposed project is located along SR-24, an eight-lane divided freeway. The tunnels of Bore 1 and Bore 2 each contain two eastbound travel lanes. The tunnel of Bore 3 contains two westbound travel lanes. Bore 4, which is not part of the proposed project, also contains two westbound travel lanes. The corridor serves local traffic from the Interstate (I) 580/I-980 interchange in Oakland to the I-680 junction in Walnut Creek. There is no parking along the section of SR-24 within the project area.

The TMP will consider three temporary staging options during construction utilizing three possible approaches: i) single-bore night-time tunnel closures only, with up to one tunnel closed in each direction at a time; ii) single-bore 55-hour weekend bore closures with up to one tunnel closed in each direction at a time; or iii) temporary AM/PM full individual tunnel closures with counterflow traffic split, alternating between bore 2 and 3 for the duration of the project.

During construction, the closure of Bore 1 will require the closure of the eastbound SR24 Tunnel Road/Broadway on-ramp on the Oakland side of the tunnel and the

closure of eastbound SR-24 Fish Ranch Road off-ramp (Exit 7A) on the Orinda side of the tunnel. Both ramp closures will require detours.

Detour 1: Eastbound SR-24 Tunnel Road/Broadway on-ramp.

The closure of the eastbound SR-24 Tunnel Road/Broadway on-ramp will require that traffic wishing to use this on-ramp is detoured westward along Broadway to the nearest available eastbound SR-24 on-ramp located at Brookside Avenue and Broadway (1.5 miles).

Detour 2: Eastbound SR-24 Fish Ranch Road off-ramp (Exit 7A).

The closure of eastbound SR-24 Fish Ranch Road off-ramp (Exit 7A) will require that traffic continue on eastbound SR-24 until the next available exit at Wilder Road (Exit 7B). Eastbound SR-24 traffic wishing to access Fish Ranch Road, Grizzle Peak Boulevard and Claremont Avenue on the Orinda side of the tunnel, will be detoured to westbound SR-24 Wilder Road on-ramp. Traffic will merge with westbound SR-24 and immediately take the westbound Fish Ranch Road off-ramp (Exit 7A). Traffic will continue along the frontage road (Old Tunnel Road) until it meets Fish Ranch Road. The closure of the eastbound SR-24 Fish Ranch Road off-ramp will add approximately 1.5 miles for those wishing to access Fish Ranch Road from eastbound SR-24.

The closure of Bores 2 and 3 will not require closures of on- or off-ramps and associated detours. There are no proposed detours for SR-24 traffic to be directed to Fish Ranch Road, Grizzle Peak Boulevard and Claremont Avenue as an alternative route for passage through the Caldecott Tunnel.

Public Transit

Public transportation within the study area includes the Alameda-Contra Costa Transit District (AC Transit) bus line 701, known as the Pittsburg/Bay Point Transbay Early Bird. This bus runs from the Pittsburg/Bay Point Bay Area Rapid Transit Station to the Salesforce Transit Center in San Francisco on weekday mornings. The TMP will require coordination with AC Transit as this bus may require a detour and/or alteration of service timing and/or frequency during tunnel closures.

Bicycle/Pedestrian Access

The section of SR-24 within the proposed project area does not have bicycle or pedestrian access.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

Temporary Construction Impacts

During construction, partial road closures will be required. Lane closures, changeable message signs (CMS), construction zone enhanced enforcement program (COZEEP), and detours will be part of the Traffic Management Plan (TMP). The TMP will be developed during the next phase of the project, the Design Phase, and will assess delays, and temporary impacts due to the construction during both off-peak and peak-hours.

As SR-24 is a heavily travelled corridor, only one bore will be closed in each direction at any given time during off-peak hours. The Proposed Build Alternative will require both temporary closures from 10pm to 4am and extended duration closures for up to 55 hours for Bores 1, 2 and 3. All closures will maintain at least one tunnel (two lanes) open to the public in each westbound and eastbound direction. Bore 1 or Bore 2 may be closed concurrently with the closure of Bore 3. Additionally, alternative westbound and eastbound routes will be suggested via SR 4 or I-580 and advance warning will be provided to the public.

The detours will provide alternative on- and off-ramps for eastbound travel when Bore 1 is closed, and redirect traffic along Tunnel Road, Broadway, Old Tunnel Road, and Wilder Road. The closure of Bores 2 and 3 will not require closures of on- or off-ramps and associated detours. There are no proposed detours for SR-24 traffic to be directed to Fish Ranch Road, Grizzle Peak Boulevard and Claremont Avenue as an alternative route for passage through the Caldecott Tunnel.

All closure plans will be notified to the public prior to construction via press releases/media alerts, paid advertisements, and the project website. Signs specifying closure times of the ramps will be posted at least 72 hours in advance. All closures will be coordinated with the CHP, local agencies of jurisdiction, and emergency services.

For the duration of construction, it is anticipated that both lanes in Bore 1 will be closed first for approximately nine months. Both lanes in Bore 2 will be closed for approximately eight months and both lanes in Bore 3 will be closed for approximately one month.

Permanent Impacts

There will be no permanent impacts to traffic and transportation once the project is complete as the project will not change capacity or routes within the project area. There will be no permanent impacts to pedestrian and bicycle facilities once the project is complete as the proposed project area does not have pedestrian and bicycle access.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no rehabilitation and therefore no impacts to traffic and transportation/pedestrian and bicycle facilities.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No traffic-related avoidance, minimization, and/or mitigation measures would be required for the proposed project. The following Project Features, also listed in Appendix B, would be implemented:

PF-TRA-1: Traffic Management Plan: A Traffic Management Plan (TMP) would be developed by Caltrans during the Design Phase. The TMP would include elements such as detours, expected lane closures, haul routes, one-way traffic controls to minimize speeds and congestion, flag workers, and phasing to reduce delays and other impacts to local residents as feasible and maintain access for police, fire, and medical services in the area.

Prior to construction, Caltrans would notify adjacent property owners, businesses, and agencies regarding construction activities, access changes, and lane closures and detours. In addition, Caltrans would coordinate with the local Fire Department and emergency response services prior to construction to minimize potential disruption to emergency services.

2.2.3 Visual/Aesthetics

REGULATORY SETTING

The National Environmental Policy Act (NEPA) of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA), in its implementation of NEPA (23 USC 109[h]), directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state “with…enjoyment of

aesthetic, natural, scenic and historic environmental qualities" (CA Public Resources Code [PRC] Section 21001[b]).

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

AFFECTED ENVIRONMENT

Information in this section is based on the Visual Impact Assessment (VIA) Memorandum (Caltrans 2024h). The purpose of the VIA is to document potential visual impacts caused by the proposed project and to propose measures to lessen any detrimental impacts that are identified. Visual impacts are demonstrated by identifying visual resources in the project area, measuring the amount of change that would occur as a result of the project, and predicting how the affected public would respond to or perceive those changes. This VIA follows the guidance outlined in the publication *Visual Impact Assessment for Highway Projects* (FHWA 2015).

Visual Resources and Scenic Resources

The visual environment of SR-24 and the area adjacent to the project limits is suburban yet of considerable scenic quality. On the uphill side of the highway is the Parkwood community neighborhood, the view of which is partially screened from the project site by topography and vegetation. While vegetation is abundant, it is generally planted rather than naturally occurring native species. Though areas near the project area are busy relatively near to residences, there are no visually unappealing views near the project site. From the project area, the greatest visual resource would be the view of San Francisco. Depending on the weather conditions, the San Francisco skyline is almost visible and appears to the viewer looking south. The SR-24 project corridor is a Designated State Scenic Highway from postmile (PM) R0.3/9.1 and was officially designated on October 22, 1982.

In Alameda County, a Landscape Freeway Classification exists between PM R1.85/R4.88 and R5.24/R5.89. Caldecott tunnels Bores 1 and 2 have been determined to be eligible for the National Register of Historic Places and are considered historic and a cultural resource.

Visual Character and Visual Quality

The visual character of the proposed project will be compatible with the existing visual character of the corridor with the implementation of avoidance and minimization measures. Along the corridor, landscape planting includes trees, shrubs, and ground-cover plants. With appropriate aesthetic treatments applied to the rehab tunnel walls

and ceiling using similar form, color and texture as the existing structure, visual impacts from the proposed rehabilitation work would be rated as low with high compatibility of the visual character of the proposed project.

The visual quality of the existing corridor is anticipated to not be altered by the proposed project. If mature landscaping surrounding the scenic highway is not removed or killed by the project, contractor staging and/or storage areas, and proper aesthetic treatments are applied to the tunnel rehabilitation structures, then the current levels of vividness, intact-ness and unity are predicted to remain after project completion.

Viewers

Neighbors (people with views *to* the road) and *highway users* (people with views *from* the road) will be moderately affected by the proposed project.

Both groups will have views of the proposed project during construction. It may be possible for residents above the freeway to view construction operations. However, these impacts will be short term with respect to exposure.

Highway users will have proximity views of both the construction operations and proposed project improvements. However, it is anticipated that the motorists' view of the improvement will be short in duration because they will focus their attention on their driving and traffic ahead. Sensitivity and exposure of highway users is predicted to be moderate to high, even though the duration of the impact will be relatively short per occurrence, as many motorists will have repeated exposures over time. It is anticipated that the average response of all viewer groups will be moderate to low.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

The installation of the Saccardo Nozzle/Jet fan ventilation system casings would introduce a new man-made feature to each of the affected tunnel bores as shown in Figures 20 through 26. The aesthetic treatment applied onto the tunnel walls are subject to review in accordance with Section 106 of the National Historic Preservation Act (NHPA) and Draft Individual Section 4(f) Evaluation (Appendix A). Similarly, if the new roadway paving and striping resembles what motorists see along the freeway, then all elements are anticipated to result in moderate-low visual impacts. The proposed project elements are not predicted to impact scenic vistas and scenic resources. There is a potential for temporary light and glare impacts during nighttime construction operation.

The continuous nightwork safety lighting will be perceptible in darkness, in views both from and to the roadway but visually compatible with the existing proposed project corridor. Overall, visual change will be low in daylight and moderate to low in darkness.

Highway travelers are anticipated to have a low sensitivity to this visual change, while adjacent residents are anticipated to have a moderate to low sensitivity, resulting in an overall moderate to low visual impact. Tunnel lightening may be upgraded to meet current Caltrans standards.

Replacement planting will occur where vegetation is removed. No mature trees are expected to be removed. Minor tree trimming will likely occur at the eastern entrance to the tunnel to facilitate the placement of new electrical generators and the installation of a security fence.

Figure 20. Existing view of Caldecott Tunnel Bore 1, eastbound.

Figure 21. Photo simulation of proposed view of Saccardo Nozzle within Caldecott Tunnel Bore 1, eastbound.

Figure 22. Photo simulation of proposed view of jet fans within Caldecott Tunnel Bore 1, eastbound.

Figure 23. Existing view of Caldecott Tunnel Bore 2, eastbound.

Figure 24. Photo simulation of proposed view of jet fans within Caldecott Tunnel Bore 2, eastbound.

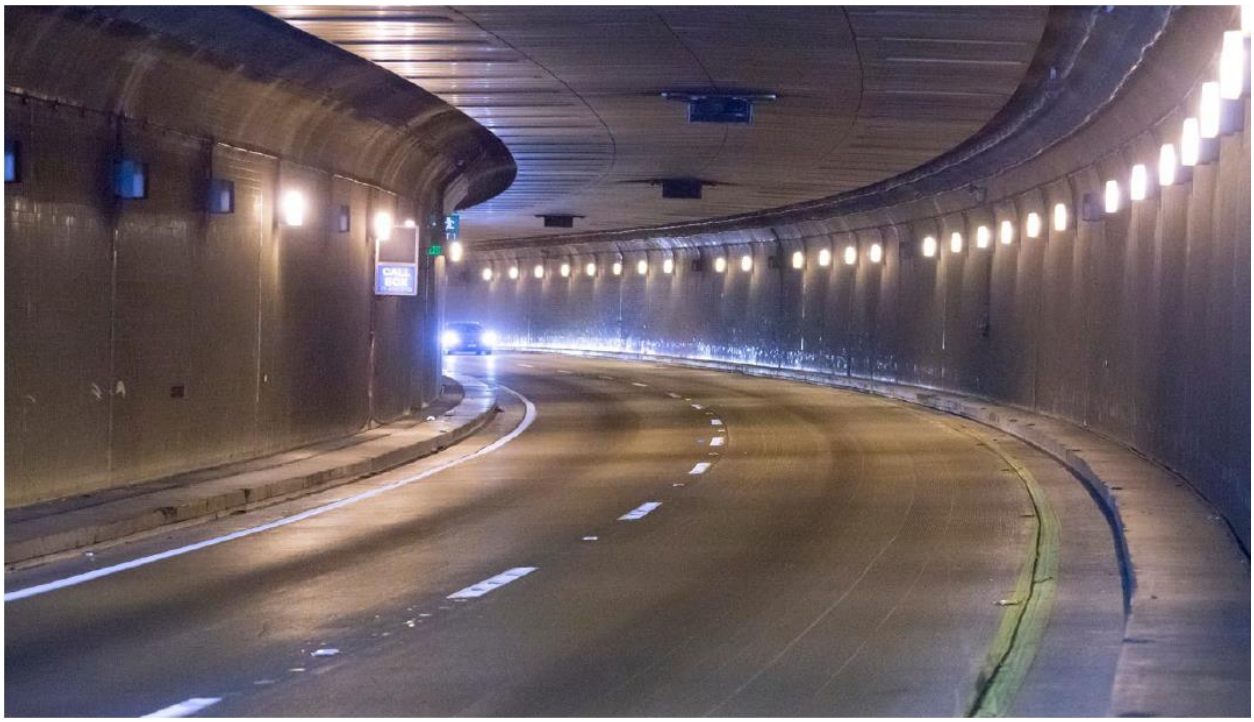


Figure 25. Existing view of Caldecott Tunnel Bore 3, eastbound.

Figure 26. Photo simulation of proposed view of jet fans within Caldecott Tunnel Bore 3, eastbound.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no visual impacts.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No mitigation measures are required. The following Project Features, also listed in Appendix B, would be implemented.

PF-AES-1: Vegetation Preservation: Project construction activities should avoid and protect existing vegetation where feasible outside the bores from the contractor's operations, equipment, and materials storage. High visibility temporary fencing (THVF) will be placed around vegetation to be protected before roadway work begins. Truck watering for vegetation should be provided when automated irrigation is interrupted by construction.

PF-AES-2: Construction Staging: Construction staging areas should be located in paved areas if possible.

PF-AES-3: Erosion Control: After construction, all areas cleared within the Project limits for uses such as contractor access, staging, and trenching operations would be treated with appropriate erosion control measures (such as mulch, hydroseed, and fiber rolls) where required.

PF-AES-4: Construction Lighting: Construction lighting would be limited to within the area of work and avoid light trespass through the use of directional lighting and shielding as needed.

PF-AES-5: Construction Waste: Unsightly materials, equipment storage and staging should be placed so that they are not visible within the foreground of the highway corridor to the maximum extent feasible. Where such siting is unavoidable, material and equipment shall be visually screened to minimize visibility from the roadway and sensitive receptors outside the project area.

The following Avoidance and Minimization Measures, also listed in Appendix C, would be implemented:

AMM-AES-1: Tunnel Design: The design, color and aesthetic treatment for the new rehab interior tunnel walls shall be similar in design to the existing adjacent Bore 4 inside tunnels and visually compatible and consistent with the existing structures along the corridor.

AMM-AES-2: Replacement Planting: Replacement highway planting should be installed where feasible in areas where existing trees and shrubs are removed to maintain Classified Landscaped Free-ways and Designated State Scenic Highway with three years Plant Establishment Period (PEP), to ensure a successful planting to support the aesthetics of the corridor.

AMM-BIO-14: Replanting with Native Species: All staging areas that are temporarily affected during construction would be revegetated with native plant species appropriate to the habitat that was disturbed in order to restore habitat values. Invasive, exotic plants would be controlled within the PCA to the maximum extent practicable, pursuant to Executive Order 13112 (Invasive Species).

2.2.4 Cultural Resources

REGULATORY SETTING

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

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the Federal Highway Administration (FHWA), the ACHP, the California State Historic Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the ACHP's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA's responsibilities under the PA have been assigned to the Department as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California Public Resources Code (PRC) Section 5024.1

established the California Register of Historical Resources (CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term "tribal cultural resources" to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in PRC Section 21083.2.

PRC Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires the Department to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with PRC Section 5024 are outlined in a Memorandum of Understanding (MOU)[1] between the Department and SHPO, effective January 1, 2015. For most Federal-aid projects on the State Highway System, compliance with the Section 106 PA will satisfy the requirements of PRC Section 5024.

AFFECTED ENVIRONMENT

A Section 106 Summary Memo was prepared on September 26, 2024, by Caltrans Office of Cultural Resource Studies (OCRS) Professionally Qualified Staff (PQS) (Caltrans 2024f). The review was conducted in accordance with the January 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA) and the January 2015 *Memorandum of Understanding Between the California Department of Transportation and the California State Historic Preservation Officer Regarding Compliance with Public Resources Code (PRC) Section 5024 and Governor's Executive Order W-26-92,* as addended 2019 (MOU).

[1] The MOU is located on the SER at https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/5024mou-15-a11y.pdf

The Area of Potential Effects (APE) represents the maximum extent of project-related activities for the proposed project and contains all areas that could be permanently or temporarily affected by the proposed work. The APE was established as the full width of the Caltrans Right-of-Way (ROW) between Postmiles (PM) ALA-24-R5.825 and CC-24-0.6, containing Tunnel Bores 1, 2, and 3, the associated West and East Portal buildings, and proposed staging areas.

The Caldecott Tunnel Bores 1, 2, and 3 were listed as a City of Oakland Landmark in 1980, and Bores 1 and 2 were further determined eligible for the National Register of Historic Places (NRHP) in 1998. Bore 3 was determined to be ineligible for the NRHP. No archaeological resources have been identified within the APE.

Caltrans contacted the Native American Heritage Commission (NAHC) on January 19, 2024, requesting a search of their Sacred Lands File (SLF) to determine if there are historically significant or sacred sites within or near the proposed project area. The NAHC responded that the project area was negative for cultural sites and provided a list of individuals from eleven indigenous groups for additional consultation. Letters initiating Section 106 of the National Historic Preservation Act (NHPA) and AB 52 were sent to each of the contacts on July 11, 2024. The Tribes contacted included: Amah Mutsun Tribal Band of Mission San Juan Bautista, Amah Mutsun Tribal Band, Confederated Villages of Lisjan Nation, Costanoan Rumsen Carmel Tribe, Guidiville Rancheria of California, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the SF Bay Area, North Valley Yokuts Tribe, The Ohlone Indian Tribe, Wilton Rancheria, and the Wuksachi Indian Tribe / Eshom Valley Band.

The Muwekma Ohlone Indian Tribe of the San Francisco Bay Area responded on July 15, 2024, with information about the tribe and the area. They concluded that formal tribal consultation is not necessary for this specific project and request to be notified in the future should any ancestral remains or signification subsurface features be uncovered. Caltrans will notify the Tribe of any changes or finds. Confederated Villages of Lisjan Nation responded on July 15, 2024 and would like to be notified of any changes to the project. Caltrans will notify the Tribe of any changes or finds. The Costanoan Rumsen Carmel Tribe responded on July 15 and requested consultation. A field meeting with the Tribe occurred on September 18, 2024 and requested to monitor construction. Consultation is ongoing and the Tribe has requested to be involved until the conclusion of the project.

On February 1, 2024, Caltrans Office of Cultural Resource Studies sent Section 106 consultation letters via email to Section 106 stakeholders with an invitation to attend a Section 106 stakeholder meeting scheduled for February 27, 2024.

Caltrans contacted Daniel Levy, President, Oakland Heritage Alliance (OHA); Elizabeth McElligott, Assistant Deputy Director, County of Alameda Parks, Recreation and Historical Commission; Tim Mollette-Parks, Acting Chair, City of Oakland Landmarks Preservation Advisory Board; Dominique Vogelpohl, Project Planner, Contra Costa

County Historical Landmarks Advisory Committee; Donna Baarsch, Planning Technician, City of Orinda Historic Landmarks Committee; Ralph Anderson, President, Alameda County Historical Society; Cindy Heitzman, Executive Director, California Preservation Foundation (CPF); John Burgh, President, Contra Costa County Historical Society; Alison Burns, President, Orinda Historical Society; and Mary McCosker, President, Lafayette Historical Society. On February 12, 2024, Caltrans contacted Betty Marvin, Planner III, Historic Preservation, Oakland Cultural Heritage Survey. Follow-up emails and phone calls were made on February 14 and February 15 to organizations that had not replied.

Ms. McElligott replied on February 14 stating that the county reviewed the information Caltrans provided, and had no comments regarding the projects; Betty Marvin of the Oakland Cultural Heritage Survey replied on February 12 on behalf of the Advisory Board stating she did not expect to attend the meeting; Jon Haeber stated on February 15 that CPF might take part in the stakeholder meeting online, but ultimately did not attend; Contra Costa County Historical Society Executive Director Leigh Ann Davis expressed interest in the project but did not attend; Alison Burns stated on February 15 that the Orinda Historical Society board did not have any concerns about the project; Ms. McCosker replied on February 14 and said that she appreciated being invited to the meeting but did not feel the need to attend.

No replies were received from the Contra Costa County Historical Landmarks Advisory Committee or the Alameda County Historical Society.

The stakeholder meeting took place on February 27, 2024, and was attended by OHA President Daniel Levy and board member Naomi Schiff, and Donna Baarsch from the City of Orinda, as well as Caltrans representatives from OCRS. The meeting included discussion of two Caltrans Tunnels and Tubes projects, EA 0J540 (Caldecott Bores 1, 2 and 3) and EA 2Y780 (Posey Tube and Webster Tube Ventilation Upgrade Project) because of the similarity of the projects. The OHA's primary concern was maintaining the integrity of the portal buildings. They had no concerns regarding the ventilation upgrades. The City of Orinda's primary interest was traffic and road closures associated with construction. Both organizations requested updates as the project progresses.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

The installation of the Saccardo Nozzles or jet fans in Bores 1 and 2 will potentially result in an adverse effect to the tunnel. This will be verified with the SHPO, stakeholders and other resource agencies. As a result, OCRS has determined that a Historic Property Survey Report (HPSR) and Finding of Effect (FOE) Report will be completed for the project. Based on the engineering studies that have been completed

for the project to date, the project will likely result in a Finding of Adverse Effect, pursuant to Stipulation X.C.1 of the PA. OCRS will continue consultation with the Section 106 Stakeholders to advise them of the project's finding under Section 106 and solicit their input regarding mitigation strategies. The strategies will be captured in a Memorandum of Agreement to be negotiated between Caltrans, the stakeholders, and the State Historic Preservation Officer (SHPO). Despite this Finding of Adverse Effect, Bores 1 and 2 will remain eligible for listing in the NRHP.

Caldecott Tunnel Bore 1 and 2 are historic properties protected by Section 4(f) of the Department of Transportation Act of 1966 within the project vicinity. The proposed project would result in a "use" of those properties as defined by Section 4(f). In addition to consultation with the SHPO, the individual 4(f) will be circulated with the Department of Interior for their review. Please see additional details in Appendix A.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to cultural resources.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following Mitigation Measure, also listed in Appendix C, would be implemented:

MM-CUL-1: Historic Resource Preservation: Prior to construction, Caltrans will prepare a HAER (Historic American Engineering Record). In consultation with Section 106 stakeholders and the State Historic Preservation Officer (SHPO), Caltrans will develop strategies specific to the Caldecott Tunnel and its significance. A Memorandum of Agreement will be developed by Caltrans, in consultation with the stakeholders, and the SHPO. Caldecott Tunnel Bores 1 and 2 would remain eligible for listing on the NRHP.

The following Avoidance and Minimization Measure, also listed in Appendix C, would be implemented:

AMM-TCR-1: Tribal Cultural Resources: Prior to the initiation of construction for the project, the Project contractor, staff, and construction crews shall be made aware of the potential to encounter cultural resources and Tribal Cultural Resources (including the traditional importance of resources such as cultural landscapes, significant waterways, and ethnobotanical plants) through a presentation provided by an archaeologist and a representative from local consulting Tribes.

AMM-TCR-2: Tribal Cultural Resources: Native American monitoring will occur during construction, as determined through consultation among Caltrans and interested Native American Tribes.

No additional avoidance, minimization, or mitigation measures are required. The following Project Features, also listed in Appendix B, would be implemented:

PF-TCR-1: Tribal Cultural Resources: In the event that archaeological resources (sites, features, or artifacts) or Tribal Cultural Resources (as defined by local consulting Tribes and CEQA) are exposed during construction activities, all construction work occurring within 60 feet of the find shall immediately stop until a qualified archaeologist, that meets the Secretary of the Interior Professional Qualifications for Archaeology, can evaluate the significance of the find, in consultation with local Tribes to determine whether or not additional study is warranted.

PF-CUL-1: Discovery of Human Remains: If remains are discovered during excavation, all work within 60 feet of the discovery would halt and Caltrans' Cultural Resource Studies office would be called. Caltrans' Cultural Resources Studies Office Staff would assess the remains and, if determined human, would contact the County Coroner as per Public Resources Code (PRC) Sections 5097.98, 5097.99, and 7050.5 of the California Health and Safety Code. If the Coroner determines the remains to be Native American, the Coroner would contact the Native American Heritage Commission who would then assign and notify a Most Likely Descendant. Caltrans would consult with the Most Likely Descendant on respectful treatment and reburial of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

PF-CUL-2: Discovery of Cultural Materials: If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a Caltrans qualified archaeologist is contacted to assess the nature and significant of the find.

2.3 PHYSICAL ENVIRONMENT

2.3.1 Water Quality and Stormwater Runoff

REGULATORY SETTING

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[2] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCBs) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

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

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal

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

environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (U.S. EPA) Section 404 (b)(1) Guidelines (40 Code of Federal Regulations [CFR] Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[3] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

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

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable

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

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

State Water Resources Control Board and Regional Water Quality Control Boards

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

- **National Pollutant Discharge Elimination System (NPDES) Program**

  Municipal Separate Storm Sewer Systems (MS4)

  Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water.” The SWRCB has identified the Department as an owner/operator of an MS4 under federal regulations. The Department’s MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

  The Department’s MS4 Permit, Order No. 2022-0033-DWQ (adopted on June 22, 2022, and effective on January 1, 2023) has three basic requirements:

  The Department must comply with the requirements of the Construction General Permit (see below);

  1. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

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

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

Construction General Permit

Construction General Permit, Order No. 2022-0057-DWQ (adopted on September 8, 2022 and effective on September 1, 2023) regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

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

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

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

AFFECTED ENVIRONMENT

The following section summarizes the results of the Water Quality Study prepared for the Project (Caltrans 2024i).

Receiving Water Bodies

The proposed project limits are within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Region 2).

The proposed project is within the Bay Bridges, Berkeley Hydrologic Area, and Undefined Hydrologic Sub- Area (HSA# 203.30) from the west side and the San Pablo Hydrologic Unit, Pinole Hydrologic Area, and Undefined Hydrologic Sub-Area (HSA # 206.60) from the east side.

Runoff from the west of the project site flows into the local drainage system and Temescal Creek, which eventually discharges into San Francisco Bay Central. Temescal Creek is not in 2020-2022 TMDLS & 303(d) Listed Waterbodies.

Runoff from the east of the proposed project site flows into the local drainage system to San Pablo Reservoir, which eventually discharges into San Pablo Bay.

The proposed work is not within U.S. and State Waterbodies. The project is in a high-risk receiving watershed.

Ground Water Information

There is no major ground water reservoir in the vicinity of the proposed project area. The project is expected to encounter groundwater in forms of seepage and leakage water (i.e., dry weather flows).

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

Temporary Impacts

The construction activities expected to be involved for the proposed project include grinding, paving, sealing, concrete demolition, concrete pouring and curing, grouting, stormwater, and non-stormwater management controls. The proposed project is expected to encounter groundwater in forms of seepage and leakage water (i.e., dry weather flows). The project may also encounter non-stormwater during pressure washing during construction.

Grinding and resurfacing roadways will result in temporary water quality impacts if water during construction enters into storm drainage facilities. Additional sources of sediment that could result in increases in turbidity include uncovered or improperly covered active and non-active stockpiles, unstabilized construction staging areas, and construction equipment not properly maintained or cleaned. Earth moving and other construction activities can cause minor erosion and runoff of topsoil into the drainage systems within the project during construction, which can temporarily affect water quality.

Fueling and maintenance of construction vehicles could occur within the proposed project site during construction, which would increase the risk of accidental spills or releases of fuels, oils, or other potentially toxic materials. An accidental release of these materials could pose a threat to water quality if contaminants enter the local receiving waters and storm drains. The magnitude of the impact from an accidental release depends on the amount and type of material spilled.

Temporary impacts to existing water quality would result from staging and active construction areas, which could result in the release of fluids, concrete material, sediment & litter beyond the perimeter of the site. Impacts may include a change in localized pH and turbidity and other pollutants entering in active construction site and beyond the perimeter of the proposed project area.

Permanent Impacts

No additional new impervious surface is proposed and, as a result, there is no potential for increases in flows. The general flow patterns will be similar to pre-project conditions. Permanent erosion control measures such as hydroseeding, erosion control blankets, rock slope protection and permanent fiber rolls would be applied to all Disturbed Soil Areas (DSA) to minimize post-construction erosion in unpaved and bare ground which may be used as construction staging areas.

Trash and heavy metals associated with vehicle tire and break wear, oil and grease, and exhaust emissions are the primary pollutants associated with transportation corridors. Generally, roadway stormwater runoff has the following pollutants: total suspended solids, nitrate nitrogen, total Kjeldahl nitrogen, phosphorus, ortho-phosphate, copper, lead, and zinc. Caltrans will adhere to its Stormwater NPDES Permit, which prohibits discharging trash for the San Francisco Bay region.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to water quality resources.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No water quality-related avoidance, minimization, and/or mitigation measures would be required for the proposed project. The following Project Features, also listed in Appendix B, would be implemented:

PF-WQ-1: Water Quality Best Management Practices: The calculated disturbed soil area (DSA) is less than one acre, thus preparation of a water pollution control plan (WPCP) is required that includes Best Management Practices (BMPs) to reduce the pollutants in stormwater discharges during construction and permanently to the Maximum Extent Practicable (MEP). The construction activities need to comply with the Standard Specifications 13-2 Water Pollution Control Program (WPCP) during construction. BMPs recommended for this proposed project are as follows:

- If significant amount of water intrusion is encountered, non-storm water treatment system may be required, pending on the contamination of the water.

- The project will involve movement of dirt, demolished materials by construction equipment, adjacent to public roadways. Street sweeping should be utilized to remove tracked sediment.

- Sediment control/perimeter control measures such as temporary fiber rolls should be utilized where necessary as a sediment control measure to intercept sheet and concentrated flow runoff.

- Temporary drainage inlet protection should be utilized to prevent sediment from entering the current or proposed storm drains.

- Concrete wastes shall be managed using concrete washout facilities.

- Various waste management, materials handling, and other housekeeping items shall be used throughout the duration of the project. If stockpiles of various kinds are anticipated, it shall be maintained with the appropriate BMPs.

- The materials generated may require standard provisions for handling and testing to verify appropriate reuse or disposal options.

2.3.2 Geology/Soils/Seismic/Topography

REGULATORY SETTING

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act (CEQA).

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Structures are designed using the Department's Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Department's Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

AFFECTED ENVIRONMENT

The following section summarizes the findings of the Preliminary Geotechnical Report prepared for the Caldecott Tunnel Bore 3 Pavement Restoration (Caltrans 2024g) and the Geologic and Paleontologic Analysis for Caldecott Tunnel Bores 1, 2, and 3 Rehab prepared for this project (Caltrans 2024d).

Geologic Setting

Geologic studies of Bores 1 through 3 both during construction and pre-construction studies for Bore 4 indicate that the Orinda Formation is present throughout the easternmost 1,185 feet of Bore 3, as measured from the contact between the Claremont and Orinda Formations and the east portal. Poorly-consolidated mudstone and sandstone are predominate, with conglomerate occurring at intervals. The mudstone and sandstone are soft, with the mudstone rapidly deteriorating in water. The conglomerate, which consists primarily of well-graded gravel within a poorly-cemented sandy matrix, is likely also soft. Bedding is typically thick to very thick, with some zones of massive bedding, and generally dips steeply to the southwest.

Seismic Information

Maintenance reports produced from 1966 to 2022 noted the addition of cracks and humps in the pavement and walls along Bore 3. However, Bore 3 is not located within an Alquist-Priolo Earthquake Fault Zone or 1,000 feet from any unzoned fault with an age of Holocene or younger. Therefore, the Caldecott Tunnel is not considered susceptible to surface fault rupture hazards, liquefaction, or seismically-induced slope stability hazards.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

The proposed project will not grade native soil or rock as locations are either on structures or in shallow, previously disturbed material. The project will not impact sensitive paleontological or geologic rock units.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to geology or soils.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No AMMs or MMs would be required to reduce effects related to geology, soils, seismicity, and topography.

2.3.3 Paleontology

REGULATORY SETTING

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

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

16 United States Code (USC) 431-433 (the “Antiquities Act”) prohibits appropriating, excavating, injuring, or destroying any object of antiquity situated on federal land without the permission of the Secretary of the Department of Government having jurisdiction over the land. Fossils are considered “objects of antiquity” by the Bureau of Land Management, the National Park Service, the Forest Service, and other federal agencies.

16 United States Code (USC) 470aaa (the Paleontological Resources Preservation Act) prohibits the excavation, removal, or damage of any paleontological resources located on federal land under the jurisdiction of the Secretaries of the Interior or Agriculture without first obtaining an appropriate permit. The statute establishes criminal and civil penalties for fossil theft and vandalism on federal lands.

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

AFFECTED ENVIRONMENT

The following section summarizes the findings of the Geologic and Paleontologic Analysis prepared for this proposed project (Caltrans 2024d).

The proposed project will not grade native soil or rock as locations are either on structures or in shallow, previously disturbed material.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

The proposed project will not impact sensitive paleontological or geologic rock units.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to sensitive paleontological or geologic rock units.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No AMMs or MMs would be required to reduce effects related to paleontology.

2.3.4 Hazardous Waste/Materials

REGULATORY SETTING

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

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, and the Resource Conservation and Recovery Act (RCRA) of 1976. The purpose of CERCLA, often referred to as "Superfund," is to identify and cleanup abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

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

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

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

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

AFFECTED ENVIRONMENT

The following section summarizes the findings of the Hazardous Waste Memorandum prepared for this proposed project (Caltrans 2024e).

In 2013 and 2014, the supply and exhaust ventilation shafts of Bores 1, 2, and 3 were cleaned of the lead-containing dust and particulates that accumulated from vehicle exhaust inside the tunnel bores. With lead not having been used as a fuel additive since the 1980s, the ventilation shafts have remained free of lead since that cleanup and no further impact is anticipated.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

Hazardous materials are not expected to have any effect on the proposed project. Current weight and substance restrictions will continue to apply during construction of the proposed project. Vehicles which are currently not permitted to travel through the tunnels, or which have restrictions to travel only the late-night hours, will not be redirected to city streets during construction of the proposed project. Vehicles carrying hazardous materials will be directed to alternative eastbound and westbound routes via SR 4 or I-580 and advance warning will be provided to the public. This will be delineated by a Traffic Management Plan (TMP) as outlined in **Project Feature TRA-1** that would be developed during the next phase of the project, the Design Phase, in consultation with emergency service providers.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts from hazardous materials.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No AMMs or MMs would be required to reduce effects related to hazardous materials or wastes.

2.3.5 Air Quality

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM) —which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$), Lead (Pb), and sulfur dioxide (SO_2). In addition, state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

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

Conformity

The conformity requirement is based on FCAA Section 176(c), which prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to State Implementation Plan (SIP) for attaining the NAAQS. “Transportation Conformity” applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), sulfur dioxide (SO_2). California has nonattainment or maintenance areas

for all of these transportation-related “criteria pollutants” except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept and scope and the “open-to-traffic” schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP; the project has a design concept and scope[4] that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and EPA-approved emissions models; and in PM areas, the project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts.

AFFECTED ENVIRONMENT

The proposed project is exempt from the requirement to determine conformity per 40 CFR 93.126 (Table 2 of CFR 93.126 – Widening narrow pavements or reconstructing bridges (no additional travel lanes)), therefore an air quality study is not required and there would be no impact to air quality.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

There is not expected to be any permanent impact to air quality from the proposed project as the project does not involve the expansion of capacity to SR-24 and no new

[4] "Design concept" means the type of facility that is proposed, such as a freeway or arterial highway. "Design scope" refers to those aspects of the project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the project.

lanes are proposed. Temporary air quality impacts during construction will be addressed through the implementation of Caltrans Standard Specifications per **Project Feature GHG-1** listed below.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to air quality.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No AMMs or MMs would be required to reduce effects related to hazardous materials or wastes. The following Project Features, also listed in Appendix B, would be implemented:

PF-GHG-1: Emissions Reductions: Implementation of Caltrans Standard Specifications, such as complying with air-pollution-control rules, regulations, ordinances, and statutes that apply to work performed under the Contract and the use of construction best management practices, would result in reducing GHG emissions from construction activities, including but not limited to:

1. Regular vehicle and equipment maintenance.

2. Limit idling of vehicles and equipment onsite.

3. If practicable, recycle nonhazardous waste and excess material. If recycling is not practicable, dispose of material.

4. Use solar-powered signal boards, if feasible.

2.3.6 Noise

REGULATORY SETTING

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the NEPA/Title 23 Part 772 of the Code of Federal Regulations (23 CFR 772) noise analysis; please see Chapter 3 of this document for further information on noise analysis under CEQA.

NATIONAL ENVIRONMENTAL POLICY ACT AND 23 CFR 772

For highway transportation projects with Federal Highway Administration (FHWA) involvement (and the Department, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the NEPA/23 CFR 772 analysis.

Table 2. Noise Abatement Criteria

Activity Category	NAC, Hourly A- Weighted Noise Level, Leq(h)	Description of activity category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67 (Exterior)	Residential.
C[1]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services,

		industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.
[1] Includes undeveloped lands permitted for this activity category.		

Figure 27 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

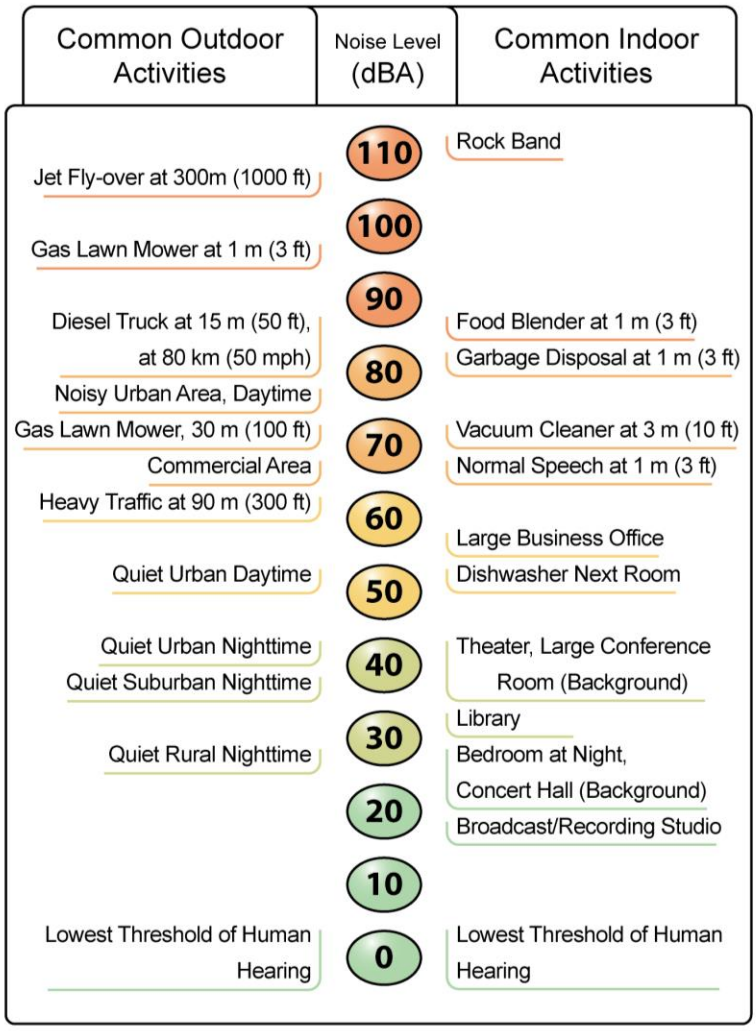


Figure 27. Noise Levels of Common Activities

According to the Department's *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more) or when the future noise level with the project approaches or exceeds the NAC. A noise level is considered to approach the NAC if it is within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project

plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

The Department's *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. Noise abatement must be predicted to reduce noise by at least 5 dB at an impacted receptor to be considered feasible from an acoustical perspective. It must also be possible to design and construct the noise abatement measure for it to be considered feasible. Factors that affect the design and constructability of noise abatement include, but are not limited to, safety, barrier height, topography, drainage, access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and maintenance of the abatement measure. The overall reasonableness of noise abatement is determined by the following three factors: 1) the noise reduction design goal of 7 dB at one or more impacted receptors; 2) the cost of noise abatement; and 3) the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

AFFECTED ENVIRONMENT

This section summarizes the results of the Construction Noise Analysis completed for this proposed project (Caltrans 2024b).

Since the proposed project is not a Type I per 23 CFR 772, noise abatement does not need to be considered, therefore a traffic noise study is not required. Type 1 projects include the construction of a new highway or involve the addition of traffic lanes, interchange lanes, ramps, the substantial physical alteration of a highway, restriping, or the addition a weigh station, rest stop, ride share lot, or toll plaza.

However, there are sensitive receptors located in proximity to areas where noisy construction activities may be taking place. The analysis method used to determine whether adverse construction noise impacts in the project area would arise is the FHWA Roadway Construction Noise Model (RCNM).

The Roadway Construction Noise Model (RCNM) was used to estimate the noise levels during construction. RCNM is the Federal Highway Administration's (FHWA) national model for the prediction of construction noise. RCNM includes representative sound levels for the most common types of construction equipment and the estimated usage factor of each equipment. The usage factor represents the percentage of time that the equipment would be operating at full power. Vehicles and equipment likely to be used during each phase of construction were input into RCNM to estimate the maximum (Lmax) and the average hourly noise levels (Leq) at various distances.

Lmax is the highest instantaneous noise level during a specified time. Leq is the averaged level equivalent in energy to the time-varying noise levels during the same

period. In some instances, maximum noise levels estimated can be slightly lower than the average noise levels. This occurs because maximum noise levels generated in short bursts by multiple pieces of construction equipment are not likely to occur at the same moment. Hourly average noise levels resulting from multiple pieces of construction equipment would be additive resulting in slightly higher calculated noise levels. While geometric spreading (increased distance) is considered in the model, noise reduction due to other factors such as ground absorption or shielding along the path are not figured in. For this reason, the model tends to overestimate the noise levels for locations at longer distance or where obstructions (i.e. buildings) are present. Therefore, the predicted sound level results are conservative.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

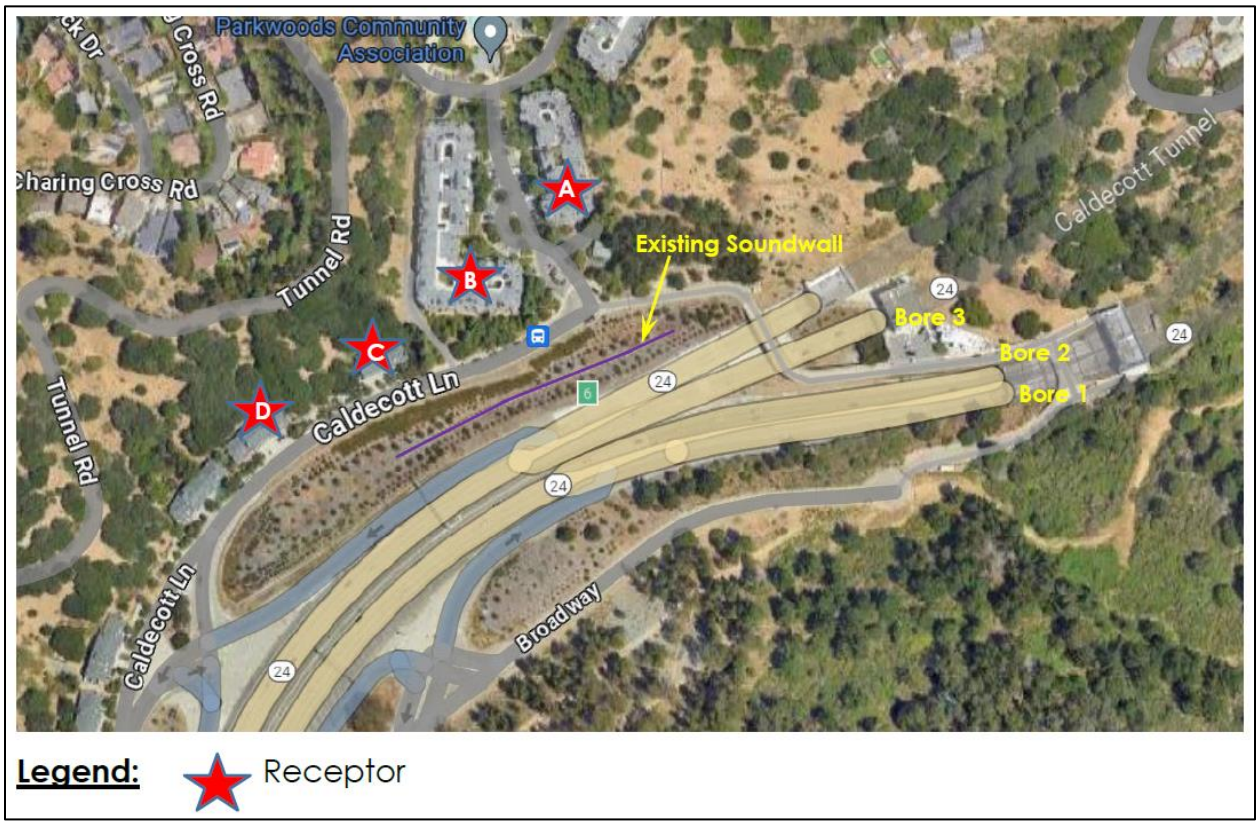


Figure 28. Map of Noise Monitoring Sites.

Table 3. Summary of Construction Noise Results from RCNM for Bores 1, 2 & 3

Bore #	Locations	Receptor Type	Receptor Distance (ft)	Remove Type 60 Concrete Barrier & Install Safety Shape Barrier		Remove Curbed Island & Install Type 60 Concrete Barrier		Roadway Work/ Remove Concrete Pavement	
				Lmax (dBA)	Leq (dBA)	Lmax (dBA)	Leq (dBA)	Lmax (dBA)	Leq (dBA)
1	Receptor A 180 Caldecott Ln, Oakland, CA 94618	Residential	710	66.5	65.0	-	-	-	-
1 & 2			520	-	-	69.2	67.8	-	--
3			355	-	-	-	-	72.6	71.2
1	Receptor B 320 Caldecott Ln, Oakland, CA 94618	Residential	770	65.8	64.3				
1 & 2			540	-	-	69.9	67.4	-	-
3			245	-	-	-	-	75.8	74.5
1	Receptor C 158 Caldecott Ln, Oakland, CA 94618	Residential	950	64.0	62.5	-	-	-	-
1 & 2			705	-	-	66.6	65.1	-	-
3			255	-	-	-	-	75.4	74.1
1	Receptor D 152 Caldecott Ln, Oakland, CA 94618	Residential	1150	62.3	60.9	-	-	-	-
1 & 2			905	-	-	64.4	62.9	-	-
3			290	-	-	-	-	74.3	73.0
1	50 ft from the construction zone	-	50	**89.6**	**88.1**	-	-	-	-
1 & 2				-	-	**89.6**	**88.1**	-	-
3				-	-	-	-	**89.6**	**88.3**
1	100 ft from the construction zone	-	100	83.6	82.1	-	-	-	-
1 & 2				-	-	83.6	82.1	-	-
3				-	-	-	-	83.6	82.3
1	200 ft from the construction zone	-	200	77.5	76.1	-	-	-	-
1 & 2				-	-	77.5	76.1	-	-

Figure 28 shows a map of noise monitoring locations A, B, C, and D at the west end of the Caldecott Tunnel. Table 3 shows the summary results of the RCNM analysis. Construction noise due to activities occurring inside the tunnels were assumed to have no impacts on the nearby sensitive receptors. Therefore, noise impacts due to activities occurring near the exits/ outside of the tunnels only were analyzed. A separate run was done for each major phase (activities): 1) remove Type 60 concrete barrier and install safety shaped barrier at west end of Bore 1 2) remove curbed island between Bore 1 & 2 on the west end and install Type 60 concrete barrier 3) remove expansive soil below the roadway section on the west end of Bore 3. Construction equipment for each phase was input into the RCNM to estimate the maximum (Lmax) and the average hourly (Leq) noise levels at receptor locations and at hypothetical non-specific locations. The steps in performing an RCNM analysis are as follows:

- Enter construction equipment anticipated to be used during construction
- Input receptors and distances
- Export results to Excel for processing

The Caltrans 2023 Standard Specifications 14-8.02 requires Lmax not to exceed 86 dBA at 50 feet from the job site from 9:00 p.m. to 6:00 a.m. Based on the results of Table 3, the noisiest operations will be to remove Type 60 concrete barrier, remove curbed island and remove expansive soil below the roadway section at 50 ft from the activities.

There are no sensitive receptors present at the east end of the tunnels, however, there are sensitive receptors at the west end. Using the Google Maps measuring tool, it was determined that the closest residential receptor, Receptor B (as shown in Figure 28) is within 245 to 770 feet from all job site activities. There is an existing soundwall to the north of Route 24 that shields receptors A, B & C. As shown in Table 3, the modeled construction noise levels at all the Receptors A, B, C & D due to any type of construction activity is considerably below 86 dBA, therefore the residential receptors will not be impacted. In addition, the existing soundwall will further attenuate the noise levels by up to 8 dBA.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to noise.

AVOIDANCE, MINIMIZATION, AND/OR ABATEMENT MEASURES

The following Avoidance and Minimization Measures, also listed in Appendix C, would be implemented:

AMM-NOI-1: Daytime Construction: Any operation exceeding 86 dBA shall not be allowed at nighttime from 9:00 p.m. to 6 a.m.

AMM-NOI-2: Public Outreach: Public outreach shall be required throughout the project duration of construction to update nearby residents, businesses, and other project stakeholders on upcoming construction activities and any changes to the project construction timeline.

AMM-NOI-3: Scheduling: Schedule noisy operations within the same time frame. The total noise level will not be significantly greater than the level produced if operations are performed separately.

AMM-NOI-4: Prevent Idling: Prevent idling of equipment within 100 feet of sensitive receptors.

AMM-NOI-5: Staging and Storage Areas: Locate all stationary noise-generating construction equipment as far as practical from noise-sensitive receptors or provide baffled housing or sound aprons to equipment when sensitive receptors adjoin or are near a construction project area.

AMM-NOI-6: Alternative Methods or Equipment: Use quieter alternative methods or equipment, if feasible. (e.g. “quiet” air compressors and other “quiet” equipment where such technology exists). Equip all internal combustion engine driven equipment with manufacturer recommended intake and exhaust mufflers that are in good condition and appropriate for the equipment.

AMM-NOI-7: Equipment Delivery: No construction equipment will be delivered and dropped off before 6:00 a.m.

AMM-NOI-8: Internal Combustion Engine Maintenance: Maintain all internal combustion engine properly to minimize noise generation.

2.3.7 Energy

REGULATORY SETTING

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

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

AFFECTED ENVIRONMENT

The following section summarizes the Construction-Related Energy Analysis prepared for the proposed project (Caltrans 2024c). Additional information is pulled from the Construction Greenhouse Gas (GHG) Emissions Analysis and the Draft Project Report for the project as well as Section 2.2.2, Traffic and Transportation/Pedestrian and Bicycle Facilities.

The proposed project is located along SR-24, an eight-lane divided freeway. The corridor serves local traffic from the Interstate (I) 580/I-980 interchange in Oakland to the I-680 junction in Walnut Creek. As of 2021, the Caldecott Tunnel has an Annual Average Daily Traffic count of 160,000 vehicles.

CEQA guidelines require that an EIR should include an analysis of a project's potential for significant environmental effects resulting from wasteful, inefficient, or unnecessary use of energy. A quantitative analysis is required for projects that increase capacity or provide congestion relief, both of which could affect the ability of a transportation facility to accommodate existing and future traffic demand. The proposed project was not classified as a capacity increasing project and is not expected to change the existing vehicle mix. Examples of capacity increasing projects include new highways, added travel or auxiliary lanes, and new or reconfigured interchanges.

Energy will be consumed during construction, operation, and maintenance of the tunnel. Activities that consume energy also generate by-products. Greenhouse Gases (GHGs) are the most closely studied by-products of energy consumption because they are linked to climate change. To assess gasoline, diesel and electricity consumed by construction equipment and vehicles, the Construction Emissions Tool 2021 (CAL-CET 2021), version 1.0, developed by the California Department of Transportation was used to quantify the fuel volumes and electricity. Energy usage in terms of fuel consumption and electricity are shown in Table 4.

Table 4. Construction Equipment/Vehicles Fuel and Electricity Consumption

BUILD ALTERNATIVE	TOTAL FUEL CONSUMPTION		
	DIESEL (gallons)	GASOLINE (gallons)[a]	ELECTRICITY (kWh)
TOTAL	120,001	43,816	16,920

Carbon dioxide (CO2) is the single most important GHG pollutant due to its abundance when compared with other vehicle-emitted GHG, including methane (CH4), nitrous oxide (N20), hydrofluorocarbon (HFCs) and black carbon (BC).

Based on project information available for environmental studies, the construction-related GHG emissions were calculated using the Construction Emissions Tool 2021 (CAL-CET 2021), version 1.0, developed by the California Department of Transportation. It was estimated that for construction of this project, the total amount of CO2 produced due to construction would be 1,779 tons.

The table below summarizes the construction related emissions, including the total CO2e emission:

Table 5. Summary of Construction-Related GHG Emissions

Project Location: Contra Costa County on Route 24, PM R0.1	PARAMETERS			PROJECT TOTAL
	CO2 (tons)	CH4 (tons)	N2O (tons)	CO2e (metric tons)
TOTAL EMISSIONS	1,779	0.039	0.097	1,740

There will be different phases in construction and energy use will be dependent on construction equipment being used per activity of each phase.

Because construction activities are short-term, the increase of consumption within the proposed project area will also be short-term. The use of construction best management practices will minimize energy consumption from construction activities, including but not limited to:

1. Regular vehicle and equipment maintenance
2. If feasible, recycle non-hazardous waste and excess materials to reduce disposal offside

In addition, with innovations such as longer pavement lives, improvement in traffic management and changes in materials, energy consumption can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

Because construction activities are short-term, the GHG emissions resulting from construction activities would not result in long-term adverse effects. Implementation of

Caltrans Standard Specifications, such as complying with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract and the use of construction best management practices, would result in reducing GHG emissions from construction activities.

In addition, with innovations such as longer pavement lives, improvement in traffic management and changes in materials, construction-related GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

The tunnel rehabilitation may result in smoother pavement surfaces, which would improve vehicle operations, reduce emissions, and reduce energy consumption. The Proposed Build Alternative will not conflict with the regional/ statewide goals on climate change, air quality and petroleum reduction.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to energy emissions.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No energy-related avoidance, minimization, and/or mitigation measures would be required for the proposed project. The following Project Features, also listed in Appendix B, would be implemented:

PF-GHG-1: Emissions Reductions: Implementation of Caltrans Standard Specifications, such as complying with air-pollution-control rules, regulations, ordinances, and statutes that apply to work performed under the Contract and the use of construction best management practices, would result in reducing GHG emissions from construction activities, including but not limited to:

1. Regular vehicle and equipment maintenance.
2. Limit idling of vehicles and equipment onsite.
3. If practicable, recycle nonhazardous waste and excess material. If recycling is not practicable, dispose of material.
4. Use solar-powered signal boards, if feasible.

2.4 BIOLOGICAL ENVIRONMENT

Caltrans prepared a Natural Environment Study (NES) to provide technical information to determine the extent that the proposed project would affect plants, wildlife, and natural communities, including special-status species, potentially jurisdictional wetlands and waters/creeks, and protected natural plant communities. The biological resources and determinations within the NES are detailed in the following subsections.

As summarized below and in Appendix C, **Avoidance and Minimization Measures (AMMs) BIO-1 through BIO-14** are incorporated into the project. Appendix H includes the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), California Natural Diversity Database (CNDDB), and California Native Plant Society (CNPS) Species Lists. Caltrans conducted a field visit on August 2nd, 2024, to review the existing biological site conditions and assess impacts associated with the proposed project activities. The Caltrans biologist concluded that with the implementation of AMMs BIO-1 through BIO-14 the proposed project would not result in affects to natural communities, including special-status species, potentially jurisdictional wetlands and waters, and protected natural plant communities. No federal or state endangered species act consultations or agency permits would be required for the proposed project.

AMM-BIO-1: Preconstruction Wildlife Surveys: In areas adjacent to oak woodland and immediately prior to any initial or ongoing ground disturbance, including staging of equipment or materials, preconstruction surveys would be conducted by a qualified biologist. These surveys would consist of walking surveys of the accessible portions of the BSA and PCA to determine presence of wildlife species, nesting birds and any special-status species. In the highly unlikely event that a special-status species is observed within the PCA, all construction activities within the appropriate buffer would cease and the agencies would be notified. Construction activities would not resume without approval from a qualified biologist. Under no circumstances would the capture, handling or relocation of special-status species occur unless expressly authorized by the agencies.

AMM-BIO-2: Preconstruction Surveys for Nesting Birds: Clearing and grubbing of vegetation should occur outside of the nesting bird season (February 1 to September 30), to the degree possible. If tree and vegetation removal or clearing and grubbing must occur prior to or during nesting bird season, preconstruction surveys for nesting birds will be conducted by a qualified biologist no more than 72 hours prior to the start of construction.

AMM-BIO-3: Non-Disturbance Buffer: If work is to occur near active raptor nests or active passerine nests, an appropriately determined non-disturbance buffer would be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance. Buffer size would be determined in cooperation with a qualified biologist. Non-disturbance buffers may also need to be established for other special-status species and would be determined in cooperation with a qualified biologist.

AMM-BIO-4: Covering of Trenches and Excavated Holes: To prevent inadvertent entrapment of wildlife during construction excavated holes or electrical trenches more than one-foot-deep with walls steeper than 30 degrees would be covered by plywood or similar materials at the close of each working day. Alternatively, an additional four-foot-high vertical barrier, independent of exclusionary fences, would be used to further prevent the inadvertent entrapment of wildlife. If it is not feasible to cover an excavation or provide an additional four-foot-high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earth fill or wooden planks would be installed. Before such holes or trenches are filled, they would be thoroughly inspected for trapped animals. If at any time a trapped special-status species is discovered, the department biologist would immediately place escape ramps or other appropriate structures to allow the animal to escape or the agencies would be contacted by telephone for guidance.

AMM-BIO-5: Work on Previously Disturbed Areas and Vehicle Use: To the extent practicable, work will remain on paved surfaces or on previously disturbed areas. Project employees would be required to comply with guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards. Vehicles would remain on paved roads to the maximum extent practicable, and speeds would be limited to 10 miles per hour when off the pavement.

AMM-BIO-6: Preconstruction Surveys for Bats: Prior to construction at work sites where structures would be removed or otherwise disturbed prior to the initiation of construction, preconstruction surveys for bats will be conducted by a qualified biologist no more than 72 hours prior to the start of construction. If bats or suitable bat roosting habitat is detected, CDFW shall be notified immediately for consultation and possible on-site monitoring if bats are day roosting in trees or buildings within the BSA, construction activity cannot begin until 30 minutes after sunset as established by U.S. Naval Observatory Astronomical Applications Department.

AMM-BIO-7: Protected Species in Work Zone: The resident engineer would immediately contact the qualified Project biologist(s) in the event that a special-status species gains access to the PCA. If a special-status species is discovered within the work area, a non-disturbance buffer will be established at a distance sufficient to minimize disturbance based on the species or nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance. The resident engineer would suspend construction activities within the non-disturbance buffer of the animal that could reasonably result in a take of the special-status species until the animal leaves the site voluntarily.

AMM-BIO-8: Trash: All food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed weekly from the work area.

AMM-BIO-9: Firearms: No firearms would be allowed in the BSA except for those carried by authorized security personnel, or local, state, or federal law enforcement officials.

AMM-BIO-10: Pets: To prevent harassment, injury, or mortality of sensitive species, no pets would be permitted in the BSA.

AMM-BIO-11: Caltrans Standard Best Management Practices (BMPs): The potential for adverse effects to water quality will be avoided by implementing temporary and permanent BMPs outlined in Section 7-1.01G of the Caltrans Standard Specifications. Caltrans erosion control BMPs will be used to minimize any wind or water-related erosion. The State Water Resources Control Board has issued a National Pollution Discharge Elimination System Statewide Storm Water Permit to Caltrans to regulate storm water and non-storm water discharges from Caltrans facilities. A Storm Water Pollution Prevention Program (SWPPP) or Water Pollution Control Program (WPCP) will be developed for the Project, as required. The SWPPP or WPCP complies with the Caltrans Storm Water Management Plan (SWMP). The SWMP includes guidance for Project design staff to include provisions in construction contracts to include measures to protect sensitive areas and to prevent and minimize storm water and non-storm water discharges.

The SWPPP or WPCP will reference the Caltrans Construction Site BMPs Manual. This manual is comprehensive and includes many other protective measures and guidance to prevent and minimize pollutant discharges and can be found at the following website:

http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm

Protective measures will be included in the contract, including, at a minimum:

- No discharge of pollutants from vehicle and equipment cleaning are allowed into storm drains or water courses.
- Vehicle and equipment fueling and maintenance operations must be at least 50 feet away from water courses.
- Concrete wastes are collected in washouts and water from curing operations is collected and disposed of and not allowed into water courses.
- Dust control would be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require.
- Coir rolls would be installed along or at the base of slopes during construction to capture sediment and temporary organic hydro-mulching would be applied to all unfinished disturbed and graded areas.
- Work areas where temporary disturbance has removed the pre-existing vegetation would be restored and re-seeded with a native seed mix.
- Graded areas would be protected from erosion using a combination of silt fences, fiber rolls along toe of slopes or along edges of designated staging areas, and erosion-control netting (such as jute or coir) as appropriate.

A Revegetation Plan would be prepared for restoration of temporary staging areas.

AMM-BIO-12: Monofilament Netting: To prevent wildlife from being entangled, trapped or injured, erosion control materials with plastic mono-filament netting would not be used within the BSA.

AMM-BIO-13: Asphalt Waste: All grindings and asphaltic-concrete waste would be stored within previously disturbed areas absent of habitat and at a minimum of 150 feet from any aquatic habitat, culvert, or drainage feature.

AMM-BIO-14: Replanting with Native Species: All staging areas that are temporarily affected during construction would be revegetated with native plant species appropriate to the habitat that was disturbed in order to restore habitat values. Invasive, exotic plants would be controlled within the PCA to the maximum extent practicable, pursuant to Executive Order 13112 (Invasive Species).

2.4.1 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on migratory corridors, fish passage and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in the Threatened and Endangered Species Section 2.4.5. Wetlands and other waters are also discussed below in Section 2.4.2.

AFFECTED ENVIRONMENT

The biological study area (BSA) was established to evaluate the effects of the proposed project on natural communities and other biological and regulated resources. The BSA contains the project footprint as well as a buffer to include areas that project construction activities may directly or indirectly impact. Direct impacts may occur from the construction of project elements or the use of areas for staging and access. Indirect impacts are a result of construction activities associated with the construction of the proposed project and typically includes vibration, noise, visual disturbance and nighttime illumination (Figure 30). For the proposed project, the BSA consists of approximately 71.56 acres and includes the section of SR 24 from PM 5.65 in Alameda County to PM 0.65 in Contra Costa Country. Vegetation and landcover classification and mapping for the BSA was completed using aerial imagery. Preliminary technical studies and focused site visits were conducted to evaluate the potential for wetlands and jurisdictional waters/creeks, confirm land classifications based on aerial imagery and review the BSA for potential habitat for natural communities and special-status species.

Six landcover type classifications were identified within the BSA, four of which are considered as not naturally occurring (barren, road, underground and urban/landscaped) and do not support natural communities. The remaining two landcover types are natural vegetation communities (oak woodland and naturalized grassland) and occur around and above the tunnel portals.

Vegetation Communities

Sensitive vegetation communities are defined as those that are considered vulnerable, imperiled, or critically imperiled, in California. These categories contain native plant communities that are regarded by CDFW as having special significance under CEQA. The following describes the vegetation communities in the BSA, along with each community's suitability as wildlife habitat.

Oak Woodland

Oak woodland totals 5.54 acres of the BSA. Oak woodland overstory consists of deciduous and evergreen hardwoods. Stands vary from upland savannas and woodlands to bottomland, riparian forests with closed tree canopies. The understory is variable; sometimes composed of shrubs from adjacent chaparral or coastal shrub which forms a dense, almost impenetrable understory. The dense understory and thick layer of leaf litter common to this woodland type provide habitat for many common species of amphibian, reptile, and small mammal. Special-status species that may occur in oak woodland habitats include California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), Alameda whipsnake (*Masticophis lateralis euryxanthus*), and pallid bat (Antrozous pallidus).

The oak woodland within the BSA is predominately coast live oak (*Quercus agrifolia*) with an understory of French broom (G*enista monspessulana*), snowberry (*Symphoricarpos albus*), mint (*Mentha sp.),* and non-native forbs. Coast live oak woodland borders barren and urban/landscaped landcover types at the Oakland portal on the western end of the Caldecott tunnels. Portions of the oak woodland identified in the BSA occur within USFWS designated critical habitat for Alameda whipsnake and do contain the physical and biological features necessary to support a population of that species. As the oak woodland identified in the BSA at the western portal contains the habitat requirements for Alameda whipsnake, there is a moderate potential for Alameda whipsnake to occur or disperse within this specific area of BSA. Oak woodland occurring above the Caldecott tunnels but was not included in the BSA.

Naturalized Grassland

Natural grassland totals 1.63 acres of the BSA, and only occurs on the Orinda side of the tunnel near adjacent to the eastbound Fish Ranch Road looped off-ramp. Many wildlife species use grasslands for foraging, such as the Alameda whipsnake, but some require special habitat features such as cliffs, caves, ponds, or chaparral for breeding,

resting, and refugia. Characteristic reptiles that breed in annual grassland habitats include the western fence lizard (*Sceloporus occidentalis*), common garter snake (*Thamnophis sirtalis),* and western rattlesnake (*Crotalus oregonus*). Mammals typically found in this habitat include the black-tailed jackrabbit (*Lepus californicus),* California ground squirrel (*Otospermophilus beechyi*), Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), and coyote (*Canis latrans).* Birds commonly known to breed in annual grasslands include the western meadowlark (*Sturnella neglecta*). This habitat also provides important foraging habitat for turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), and prairie falcon (*Falco mexicanus*).

The naturalized grassland in the BSA is low quality due to the steepness of the cut slope and its immediate proximity to the Fish Ranch off-ramp/frontage road. This area of naturalized grassland occurs within USFWS designated critical habitat for Alameda whipsnake but does not contain the essential physical and biological features necessary to support a resident population or other special-status species. As this area occurs in the outside shoulder of the Caltrans ROW, there is the low potential that this area could be used by special-status species for dispersal.

Urban/Landscaped

The urban/landscaped areas (13.46 acres) of the BSA are dominated by mowed and wood mulched groundcover with the sporadic planting of landscaped trees and shrubs. These tree and shrub plantings are associated with residential, commercial and transportation uses (e.g., horticultural plantings, golf courses, and irrigated lawns) and are often subject to ongoing maintenance. A handful of mature oak and pine landscape trees and shrubs are interspersed within these areas. Due to the disturbed nature of this habitat, it is not generally considered to have the physical and biological conditions suitable for special-status species. In addition to the lack of suitable habitat, the urban/landscaped areas identified in the BSA are surrounded by on- and off-ramps, local city streets, frontage roads and SR-24. These roads greatly reduce the potential for species-status species to access these areas for foraging or dispersal. Although not suitable for special-status species, urban/landscape areas can provide habitat for wildlife species and select species of nesting birds that have adapted to this manmade environment.

Barren/Road/Underground

The BSA is mostly comprised of paved roadways, including the roadway within the tunnel. Road surfaces comprise 13.53 acres within the BSA and Underground comprises 21.14 acres. Barren landcover comprises 0.33 acre within the BSA and occurs within the unpaved shoulder adjacent to the roadway on both the east and west end of the BSA. Due to the disturbed nature of these habitats, they are not considered to have the physical and biological conditions suitable for special-status species.

Fish Passage

No barriers to fish were identified in the BSA.

Migratory Corridors

The natural vegetation communities and urban/landscaped areas of the BSA may provide habitat for mammals, birds, small reptiles, amphibians and invertebrates. These species include coyote, gray fox (*Urocyon cinereoargenteus*), common garter snake (*Thamnophis sirtalis*), great blue heron (*Ardea herodias*), Pacific tree frog (*Pseudacris regilla*), California vole, pocket gopher (*Thomomys bottae*), and raptors. Wildlife may use the natural vegetation communities and urban landscape area as migration corridors to other terrestrial habitats.

Current barriers in the BSA at the tunnel portals include buildings, fencing, road berms, steep road shoulders, and metal guardrails that can impede migration. The area above the Caldecott tunnel between the portals allows for north south movement of special-status and other wildlife species such as mountain lion to cross SR-24. East Bay Regional Parks has identified the Caldecott as integral to the Bay Area “critical linkages” habitat connectivity program and connects “islands” of open space on either side of Highway 24 such as Claremont Canyon Regional Preserve and Tilden Regional Park to the north, and Sibley and Huckleberry Regional Preserves to the south.

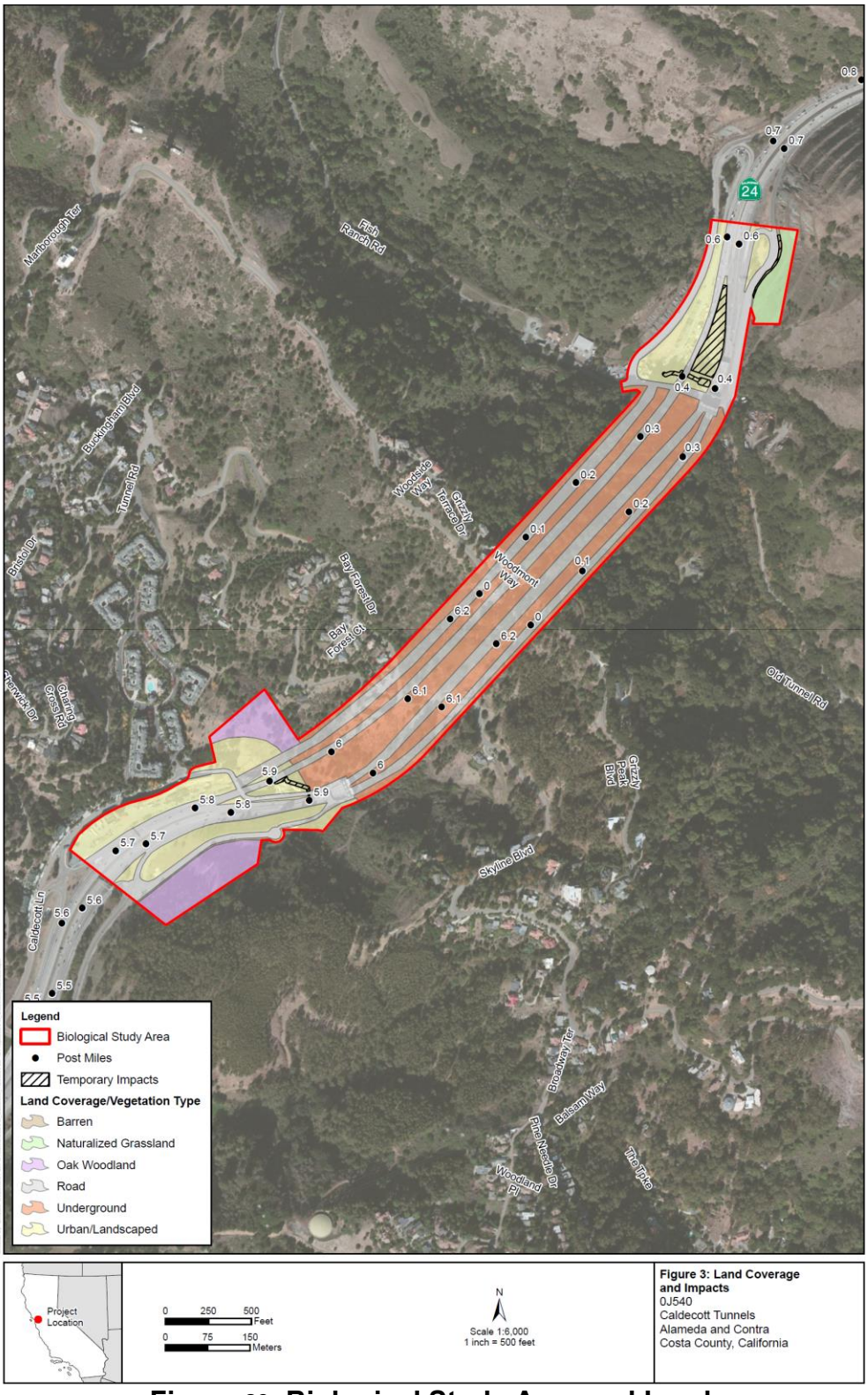


Figure 29. Biological Study Area and Land

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

The proposed project, access and staging will all occur within the Project Construction Area (PCA). The PCA includes all areas of direct temporary and permanent impacts The PCA occurs entirely with the BSA which is buffered to capture any indirect impacts to plants, wildlife, and natural communities, including special-status species, potentially jurisdictional wetlands and waters, and protected natural plant communities.

Work within the PCA that may impact biological resources would include trenching or horizontal directional drilling for new electrical service at both portals, excavation and concrete pouring for new electrical cabinets at the eastern portal, and minor tree trimming of one oak tree at the eastern portal to facilitate the installation of a security fence. Vegetation clearing may also be necessary at the proposed stating area. All direct temporary impacts associated with the proposed project will only occur in areas designated as urban/landscape, road and barren.

Vegetation Communities

As the PCA does not overlap with oak woodland or naturalized grassland, no natural vegetation communities will be directly impacted by the proposed project. Potential project impacts to special-status species associated with vegetation removal and tree trimming within urban/landscaped areas are further discussed in Section 2.4.2, 2.4.3 and 2.4.4.

Urban/landscaped areas within the BSA and PCA do not have suitable habitat for special-status species, however there are a number of other wildlife animals and birds such as dusky footed woodrat that may inhabit landscaped areas within the PCA. To minimize the impacts of any vegetation clearing or grubbing on animal species, Caltrans would implement **AMM-BIO-1 through AMM-BIO-6** and **AMM-BIO-14.** Once construction of either build alternative is complete, the width of existing roadways would remain the same as existing conditions, there would be no impacts to wildlife corridors, and there would be no habitat fragmentation. Neither option of the Proposed Build Alternative would result in permanent impacts to natural communities.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to natural communities.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No natural communities-related mitigation measures would be required for the proposed project the following avoidance and minimization measures listed below would be required.

As discussed, due to lack of habitat, special-status species are not expected to occur in the PCA. However, to avoid impacts to migratory birds, nesting birds, other wildlife species within landscaped areas and avoid indirect impacts to special-status species which have the potential to occupy areas of oak woodland within the BSA, preconstruction surveys and a series of biological avoidance measures will be implemented. Avoidance and minimization measures **AMM-BIO-1 through AMM-BIO-6, and AMM-BIO-14**, listed above in Chapter 2.4 and in Appendix C, were recommend by the NES.

2.4.2 Wetlands and Other Waters

REGULATORY SETTING

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark (OHWM), in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

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

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 11990 states that a federal agency, such as FHWA and/or the Department, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCBs) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see Water Quality, Section 2.3.1, for more details.

AFFECTED ENVIRONMENT

Two potential culverted jurisdictional drainages (unnamed) occur at the eastern tunnel portal. Both culverts are underground with no daylighted portion occurring in the BSA. Conclusions presented in this section are based on the NES (Caltrans 2024c).

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

The proposed project will occur on existing pavement or previously disturbed areas within the BSA. A staging area is proposed in a gore adjacent to one of the culverted drainages. This area has been developed and is highly disturbed. No work is proposed within this culverted drainage. Therefore, no impacts to jurisdictional waters, wetlands or creeks are anticipated. Caltrans's standard Best Management Practices (BMPs), and **AMM-BIO-11**, will be implemented to protect water quality during construction. The build alternative would not result in any temporary or permanent impacts to wetlands, waterways, or creeks.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to wetlands or waterways.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No wetlands-related mitigation measures would be required for the proposed project. No impacts to wetlands, creeks, any bodies of water or waters of the State are anticipated. Avoidance and minimization measure **AMM-BIO-11**, listed above in Chapter 2.4 and in Appendix B, related to waters of the US would be implemented**.**

2.4.3 Plant Species

REGULATORY SETTING

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special-status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act

(CESA). Please see the Threatened and Endangered Species section 2.4.5 in this document for detailed information about these species.

This section of the document discusses all other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), found at California Public Resources Code, Sections 21000-21177.

AFFECTED ENVIRONMENT

Of the special-status plant species considered for the NES, only four occurrences (two California Native Plant Society (CNPS) plants listed as rare, threatened, or endangered in California were identified in the California Natural Diversity Database (CNDDB) search that overlaps the BSA and PCA. Suitable habitat for western leatherwood (*Dirca occidentalis*) may occur within the oak woodland portion of the BSA, but as western leatherwood does not occur in disturbed landscaped area, the potential for the species to occur in the PCA is low. Most beautiful jewelflower (*steptanthus albidus ssp. Peroenus*) only occurs in chaparral woodland on serpentine outcrops. As the BSA is lacking areas of chaparral, this species is not expected to occur within the BSA.

Habitat conditions within the PCA, which consists of roadway, barren and maintained landscaped areas, are not suitable for special-status plant species identified during the database searches and literature review. This was further confirmed by site visits by biologists and attributed to existing paved surfaces and human disturbance via maintenance. traffic. No special-status plant species or rare plants are expected to occur within the PCA.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

Given the lack of suitable habitat within the PCA and the low probability of occurrences, the Proposed Build Alternative is not expected to result in direct or indirect impacts on special-status plant species during construction. Construction will occur within the tunnels, urban landscaped areas at the tunnel portals and staging will occur within previously disturbed areas identified an urban/landscaped. However, in the very unlikely even that special-status plant species are discovered during construction in the PCA,

construction will halt in the immediate vicinity of the plans and consultation with the appropriate agencies would be initiated. To promote native plants and shrubs species **AMM-BIO-14**, will be employed to any areas temporarily affected by construction activities to restore habitat values.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to plant species.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No special-status plant species related mitigation measures would be required for the proposed project. Avoidance and minimization measure **AMM-BIO-14**, listed above in Chapter 2.4 and in Appendix B, for native species would be implemented in staging areas**.**

2.4.4 Animal Species

REGULATORY SETTING

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in the Threatened and Endangered Species Section 2.4.5 below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

AFFECTED ENVIRONMENT

Several common animal species are expected to use habitat in the BSA. California vole, California ground squirrel, and Gilbert's skink were some of the species observed in the during field surveys. Oak woodland provides nesting habitat for birds such as oak titmouse and black phoebe, breeding habitat for northern pacific rattlesnakes, and foraging and nesting habitat for some raptor species such as red-tailed hawk. The urban buildings and landscaped trees in the BSA could also provide suitable habitat for roosting bats that have a high tolerance to human activity.

Caltrans Biologists concluded that seven special-status species have low to moderate potential to occur in the BSA but are not expected to occur within the PCA. These species with low to moderate potential to occur were determined through literature and database searches, historical occurrences, familiarity with the region, and site visits to assess potential habitat. Areas of oak woodland and naturalized grassland with the BSA had a low to moderate potential for the occurrence special-status species. Areas of with a classification of urban/landscape has a low potential for special-status species to occur. *Migratory Birds*

Habitat within the BSA is of marginal nesting quality due to continual human disturbance from SR-24. All land cover types within the BSA except for paved roads may be used by one or more bird species for nesting. Raptors and smaller bird species may nest in the trees within the BSA, and many other birds may nest among grassland land cover types. Urban areas may also provide suitable nesting habitat in street trees and landscape plantings. In addition to common bird species, the NES reports that two special-status bird species have low potential to travel, forage and/or nest within the BSA with CNDDB records occurrences of within two miles of the BSA:

- Golden eagle (*aquila chyrsaetos*)
- American peregrine falcon (*Falco peregrinus anatum*)

The Golden eagle is protected under the Bald and Golden Eagle Protection Act, is a Fully Protected Species under California Fish and Game Code. The American peregrine falcon was formerly Federally listed as Threatened or Endangered, however is a Fully Protected Species under California Fish and Game Code

Roosting Bats

Bats are widespread within California and may be found in any habitat. Different bat species have different roosting requirements, and roosts can be found in a variety of habitats and locations. The NES reports that three special-status bat species have a low potential to occur within the BSA based on recorded CNDDB occurrences in the region:

- Hoary bat (*Lasiurus cinereus*)
- Pallid bat (*Antrozous pallidus*)

- Townsend's big-eared bat (*Corynorhinus townsendii*)

The Hoary bat is included on the California Department of Fish and Wildlife's (CDFW) Special Animal List. The Pallid bat and Townsend's big eared bat are both CDFW Species of Special Concern (SSC).

Alameda Whipsnake

There are seven CNDDB occurrences of Alameda whipsnake within 2 miles of the BSA. The closest and only CNDDB occurrence that overlaps the BSA is at the northeast end of the proposed project. The area surrounding the BSA at the northeast end consists of oak woodlands, grassland and rocky outcrops, and chaparral. Alameda whipsnake is considered to have a moderate potential to occur within the oak woodland portion of the BSA but is not expected to occur in urban/landscaped areas due to lack of suitable habitat locations of CNDDB occurrences, and the presence of dispersal barriers. Although, the area within the BSA contains a small portion of naturalized grassland at the east end of the BSA which could support Alameda whipsnake ; this area is of poor quality due to the proximity to the roadway and existing disturbances, and does not contain the physical and biological elements needed for the species to inhabit or to maintain a population of Alameda whipsnake.

Monarch Butterfly

The BSA contains low potential for roosting, foraging and migration habitat for Monarch Butterflies (*Danaus plexippus*). The BSA does not contain large stands of eucalyptus or host plants. Larval host plants include at least 13 species of milkweed (*Asclepias* spp.) in the western US. There are no known roosting sites within the BSA, however individuals may travel through the BSA.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

As discussed in the NES, construction activity would occur on pavement, barren and existing landscaped areas. The project would avoid tree removal, particularly by alternating between open trenching and HDD trenching to avoid impacts to trees and shrubs. One oak tree within an urban/landscaped area is proposed to be trimmed to accommodate the installation of a security fence. Clearing and grubbing of landscaped vegetation may be necessary in potential staging areas or where trenching may occur within the 1.49 acres of the PCA.

Migratory Birds

Project-related activities have the potential to temporarily impact nesting or foraging migratory birds and their habitat. Construction activities such as tree trimming, vegetation

clearing and other project-related ground disturbances or equipment operation associated with the proposed project could affect raptors nesting in vegetation in or adjacent to work areas. Tree trimming could result in direct loss of active nest sites, if nest sites are present within the PCA. Project construction activities, particularly noise and vibration, also could result in temporary disturbances to active nests or individuals foraging in areas near the BSA that could cause individuals to avoid using adjacent areas or cause nests to be abandoned. However, implementing **AMM-BIO-1 through AMM-BIO-3** would minimize impacts to nesting birds or raptors.

Roosting Bats

The proposed project could result in the disturbance of suitable roosting sites for the pallid bat, hoary bat, and Townsend's big-eared bat. Disruption of suitable roosting and nesting sites could have a temporary negative effect on bats; however, the proposed project would not permanently remove bat habitat, and with implementation of **AMM-BIO-6**, there would be no long-term negative effect on bats. If daytime or maternity roosts are identified, additional buffers, and a work window will be implemented to avoid and minimize impacts on roosts.

Alameda whipsnake

Portions of the oak woodland identified in the BSA occur within USFWS designated critical habitat for Alameda whipsnake and do contain the physical and biological features necessary to support a population of that species. As the oak woodland identified in the BSA at the western portal contains the habitat requirements for Alameda whipsnake, there is a moderate potential for Alameda whipsnake to occur or disperse within this specific area of BSA. Alameda whipsnake are not expected to occur within the PCA due to a lack of suitable habitat. In the highly unlikely event that an Alameda whipsnake is observed during the implementation of implementing **AMM-BIO-1 through AMM-BIO-3** within the PCA, all construction activities within the appropriate buffer would cease and the agencies would be notified.

Monarch Butterfly

There are no CNDDB occurrences of Monarch Butterflies within the BSA. Monarch butterflies are a Candidate for listing under the Federal Endangered Species Act. The NES discusses that monarch butterflies are considered to have low potential to occur with the BSA. There are no known roosting sites within the BSA, however they may travel through the BSA. Preconstruction surveys **AMM-BIO-1** will be implemented to avoid potential impacts to any monarch butterflies that may travel through the BSA during migration and could potentially overwinter in the trees above the tunnels.

In order to avoid and minimize effects to potential special-status species and their habitats within the BSA , **AMM-BIO-1 through AMM-BIO-3 and AMM-BIO-6 through AMM-BIO-7** would require work windows and preconstruction surveys for nesting birds and bats, and **AMM-BIO-4, AMM-BIO-5, and AMM-BIO-12** would also aid in helping to avoid

entrapment, entanglement, or injury of wildlife. As described in **AMM-BIO-11 and AMM-BIO-14**, in the event that clearing and grubbing are necessary during construction, those areas would be revegetated with appropriate species after the project is constructed.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to animal species.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No animal species-related mitigation measures would be required for the proposed project. Avoidance and minimization measures **AMM-BIO-1 through AMM-BIO-14**, listed above in Chapter 2.4 and in Appendix C, would be implemented.

2.4.5 Threatened and Endangered Species

REGULATORY SETTING

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA) (and the Department, as assigned), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take Statement or a Letter of Concurrence. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of

the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

AFFECTED ENVIRONMENT

The NES determined that federally designated critical habitat for Alameda whipsnake (Unit C04A) occurs within the BSA at the eastern tunnel portal but that no work would occur within the unit. Additionally, the report does not anticipate injury or mortal take of federally or state-listed species, and that there will be no temporary or permanent impacts to protected species habitat associated with the proposed project. Due to the small amount of marginal habitat on-site and implementation of AMMs, no take of listed species is anticipated.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

As no construction activities are proposed for areas designated as critical habitat and the PCA does not overlap with any areas within the BSA that has suitable habitat for federally protect species, Caltrans has determined that this proposed project would have “no effect” on federally listed species, their habitats, or federally protected communities. The AMM’s described above will further reduce potential for effects. Adverse impacts to any federally designated critical habitat would not occur as a result of project activities given that impacts are taking place within the existing roadway. The “no effect” determination has been made for all federally listed species identified in the official USFWS species list and the official NMFS species list requested for this project.

The proposed project will have no effects to federally listed anadromous fish, critical habitat, or their Essential Fish Habitat regulated by FESA (16 USC § 1531) and

Magnuson-Stevens Fishery Conservation and Management Act [Public Law 94 – 265]). No effects to any other federally listed or candidate species are anticipated.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to threatened and endangered species.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

As discussed in Chapter 2.4.4 above, no threatened or endangered species-related mitigation measures would be required for the proposed project. Avoidance and minimization measures **AMM-BIO-1 through AMM-BIO-14**, listed above in Chapter 2.4 and in Appendix C, would be implemented.

2.4.6 Invasive Species

REGULATORY SETTING

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State’s invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

AFFECTED ENVIRONMENT

Vegetation along some portions of the roadway is the result of landscaping with both native and non-native species, while other disturbed portions have been colonized by pioneer species, both native and non-native. Some of these have the potential to be invasive. The introduction and spread of invasive plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. The infestation of the BSA by these species primarily occurs along the roadway and within the channel banks. Through site visits and database searches, no invasive plant species have been identified in the BSA.

ENVIRONMENTAL CONSEQUENCES

Proposed Build Alternative

The Proposed Build Alternative is anticipated to have minimal effects on the spread of invasive species within the proposed project's BSA. There have not been any invasive species identified within the BSA and the proposed improvements are not expected to result in the colonization of additional species. Caltrans would implement **Avoidance and Minimization Measure BIO-14**, ensuring that all areas temporarily affected during construction would be revegetated with native species and that invasive species would be controlled to the maximum extent practicable.

No Build Alternative

Under the No Build Alternative, the tunnel would remain in its current condition. There would be no impacts to the spread of invasive species.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No invasive species-related mitigation measures would be required for the proposed project. Avoidance and minimization measure **AMM-BIO-14**, listed above in Chapter 2.4 and in Appendix B, would be implemented.

2.5 CUMULATIVE IMPACTS

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts 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 agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for

an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR) Section 1508.7.

As described above, the proposed project would have no effect on growth, recreation, population and housing, land use planning, mineral resources, energy, air quality, agriculture and forest resources, geology and soils, or hydrology and water quality.

In addition, the proposed project would have less than significant effects to aesthetics, biological resources, community character or community resources, noise, utilities and service systems, public services, hazardous wastes and hazardous materials, greenhouse gases (GHGs), transportation, tribal cultural resources, wildfires, and mandatory findings of significance.

The proposed project would have less than significant effects to cultural resources with proposed **Mitigation Measure CUL-1** incorporated.

The following projects have been or are proposed to be implemented by Caltrans along SR-24 near the Caldecott Tunnel. There are no housing or other development projects planned by the City of Oakland, City of Orinda, Alameda County, or Contra Costa Counties near the project area.

Table 6. Implemented or Planned Projects in Project Area

Project EA Number	Postmiles	Project Name and Description	Year Implemented/To Be Implemented
04-1Q840	0.010/0.010	Director's Orders for maintenance at Caldecott Tunnel	2020
04-1Y090	0.010/0.010	Highway maintenance at Caldecott Tunnel	2023
04-1X260	0.100/0.100	Director's Orders for maintenance at Caldecott Tunnel	2024

As all of the above projects are maintenance projects with no significant impacts, and because this project is not anticipated to have any significant impacts on resources, there are no anticipated cumulative impacts.

Chapter 3 California Environmental Quality Act (CEQA) Evaluation

3.1 DETERMINING SIGNIFICANCE UNDER CEQA

The proposed project is a joint project by the California Department of Transportation (Department) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated May 27, 2022, and executed by FHWA and Caltrans. The Department is the lead agency under CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or a lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require the Department to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA ENVIRONMENTAL CHECKLIST

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular

resource. A NO IMPACT answer in the last column reflects this determination. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices (BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.2.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

Question	CEQA Determination
a) Have a substantial adverse effect on a scenic vista?	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Less Than Significant Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	No Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less Than Significant Impact

CEQA Significance Determinations for Aesthetics

a) **No Impact –** Under the Proposed Build Alternative, it is not anticipated that there will be any permanent impacts to scenic vistas (views of the Oakland/Berkeley hills) or scenic resources (if mature trees and shrubs are protected from damage). Temporary visual impacts will be addressed by **Project Feature-AES-1 through PF-AES-5.**

b) **Less than Significant Impact -** The installation of the Saccardo Nozzle/Jet fan ventilation system casings would introduce a new man-made feature to each of the affected tunnel bores as shown in Figures 20 through 26 of Section 2.2.3 above. However, with an aesthetic treatment applied onto the tunnel walls that mimics the existing aesthetics in color and pattern, **AMM-AES-1**, the rehabilitation of the bores would visually blend in with the existing structure of Bore 4. Similarly, if the new roadway paving and striping resembles what motorists see along the freeway, then all elements are anticipated to result in moderate-low visual impacts. There is a potential for temporary light and glare impacts during nighttime construction operation.

   Additionally, as SR-24 is a scenic highway **AMM-AES-2** replacement highway planting will be installed where feasible in areas where existing trees and shrubs are removed to maintain Classified Landscaped Free-ways and Designated State Scenic Highway with three years Plant Establishment Period (PEP), to ensure a successful planting to support the aesthetics of the corridor.

c) **No Impact –** The proposed project is located in an urbanized area. Under the Proposed Build Alternative, the project would not conflict with applicable zoning and other regulations governing scenic quality.

d) **Less than Significant Impact –** Under the Proposed Build Alternative, the project would not create a permanent, new source of light or glare. During construction, lighting would likely be used during nightwork, introducing a new source of light in the project area. However, construction lighting during nightwork would be limited to the immediate vicinity of active work and utilize shielding to avoid light trespass, as outlined in **Project Feature AES-4**. Implementation of this Project Feature would further reduce potential temporary impacts from light and glare. Therefore, impacts from light and glare would be less than significant.

PFs, AMMs and/or MMs:

The proposed project would implement **Project Features AES-1 through PF-AES-5** and **Avoidance and Minimization Measure AES-1** and **AMM-AES-2** to avoid or minimize the proposed Project's visual effects (see Appendix B and Appendix C).

3.2.2 Agriculture and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental

effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

Question	CEQA Determination
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	No Impact

CEQA Significance Determinations for Agriculture and Forestry Resources

Would the project:

a) **No Impact –** There are no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) within the project area.
b) **No Impact –** There are no parcels under Williamson Act contract within the project limits.

c) **No Impact –** There are no forest or timberlands within the proposed project limits.

d) **No Impact -** There are no forest or timberlands within the proposed project limits.

e) **No Impact –** There are no other changes anticipated to farmland or forest lands.

PFs, AMMs and/or MMs:

No impacts are anticipated; therefore, no measures are proposed.

3.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:

Question	CEQA Determination
a) Conflict with or obstruct implementation of the applicable air quality plan?	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	No Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	No Impact

CEQA Significance Determinations for Air Quality

a) No Impact – The proposed project is exempt from the requirement to determine conformity per 40 CFR 93.126 (Table 2 of CRF 93.126– Widening narrow pavements or reconstructing bridges (no additional travel lanes), therefore an air quality study is not required and there would be no impact to air quality. The project would not conflict with or obstruct any applicable air quality plans, would not result in a cumulatively considerable net increase of criteria pollutants, or result in other emission that would adversely affect a substantial number of people.

b) No Impact – See a) above.

c) No Impact – See a) above.

d) No Impact – See a) above.

PFs, AMMs and/or MMs:

The proposed project would implement **Project Feature GHG-1** to further reduce air quality impacts from construction activities (see Appendix B).

3.2.4 Biological Resources

Would the project:

Question	CEQA Determination
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?	Less Than Significant Impact
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?	No Impact
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?	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact

CEQA Significance Determinations for Biological Resources

a) **Less Than Significant Impact -** Literature reviews and database searches were conducted to determine the presence of special-status plant and wildlife species with potential to occur with the proposed project's BSA. 30 wildlife species and 23 plant species were considered to have potential to be present within the BSA. However, due to the lack of suitable habitat present within the highly disturbed and urban BSA, only seven of these species have a low potential to occur, and none are expected to be impacted by this project. Migratory birds, bats, and Alameda whipsnake may be present within the BSA. **AMM-BIO-1 through AMM-BIO-3 and AMM-BIO-6 through AMM-BIO-7** would require work windows and preconstruction surveys for nesting birds and bats, and **AMM-BIO-4, AMM-BIO-5, and AMM-BIO-12** would also aid in helping to avoid entrapment,

entanglement, or injury of wildlife. As described in **AMM-BIO-11 and AMM-BIO-14**, the areas where clearing and grubbing are necessary would be revegetated with appropriate species after the project is constructed.

b) No Impact – The proposed project's BSA contains little vegetation or suitable habitat, and the vegetation that is present lacks connectivity to natural area. While construction activities may result in minor vegetation removal, this would not impact any riparian vegetation or wildlife corridors. To minimize the impacts from vegetation clearing and grubbing and tree removal, Caltrans would implement **AMM-BIO-11, AMM-BIO-14**, **and AMM-AES-2** which would require revegetation of areas disturbed by construction activities with native species to the maximum extent practicable. There are also no wetlands present within the project's BSA. Caltrans would also implement **AMM- BIO-13**, which would require storage of all asphalt waste a minimum of 150 feet away from any aquatic habitat, culvert, or drainage feature. **AMM-BIO-11 and Project Feature PF-WQ-1** would include the use of temporary BMPs during construction activities. Therefore, there would be no impact to sensitive habitats, wildlife corridors, wetlands, or waterways and the project would not conflict with local policies or conservation plans.

c) No Impact – See b) above.

d) No Impact – See b) above.

e) No Impact – See b) above.

f) No Impact – See b) above.

PFs, AMMs and/or MMs:

The proposed project would implement **Project Feature WQ-1** and **Avoidance and Minimization Measures BIO-1 through AMM-BIO-14 and AMM-AES-2** to avoid or minimize the proposed Project's impacts on biological (see Appendix B and Appendix C).

3.2.5 Cultural Resources

Would the project:

Question	CEQA Determination
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	Less Than Significant with Mitigation Incorporated

Question	CEQA Determination
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	No Impact

CEQA Significance Determinations for Cultural Resources

a) Less than Significant Impact with Mitigation Incorporated – As described in the Cultural Resources section of Chapter 2 (Section 2.2.4), the Caldecott Tunnel Bores 1, 2, and 3 were listed as a City of Oakland Landmark in 1980, and Bores 1 and 2 were further determined eligible for the National Register of Historic Places (NRHP) in 1998. Bores 1 and 2 are a significant resource under CEQA. Bore 3 was determined to be ineligible for the NRHP. No archaeological resources have been identified within the Area of Potential Effects (APE).

A stakeholder meeting took place on February 27, 2024, and was attended by OHA President Daniel Levy and board member Naomi Schiff, and Donna Baarsch from the City of Orinda, as well as Caltrans representatives from OCRS. The meeting included discussion of two Caltrans Tunnels and Tubes projects, EA 0J540 (Caldecott Bores 1, 2 and 3) and EA 2Y780 (Posey Tube and Webster Tube Ventilation Upgrade Project) because of the similarity of the projects. The OHA's primary concern was maintaining the integrity of the portal buildings. They had no concerns regarding the ventilation upgrades. The City of Orinda's primary interest was traffic and road closures associated with construction. Both organizations requested updates as the project progresses.

The addition of the jet fans or Saccardo Nozzle under the Proposed Build Alternative, including the removal of sections of the plenum, would have a significant impact on Bores 1 and 2. Under **Mitigation Measure CUL-1**, Caltrans will produce a Historic Property Survey Report (HPSR) and Finding of Adverse Effect (FOE) report, pursuant to Stipulation X.C.1 of the PA. OCRS will continue consultation with the Section 106 stakeholders to advise them of the project's finding under Section 106 and to solicit their input regarding mitigation strategies. A Memorandum of Agreement will be developed by Caltrans, in consultation with the stakeholders, and the State Historic Preservation Officer (SHPO).

With implementation of the above measures, the impacts to the historical resource will be less than significant with mitigation incorporated.

b) No Impact - No archaeological resources have been recorded in the area that will be affected by the proposed project.

c) No Impact – There are no known interred human remains within the proposed project vicinity.

PFs, AMMs, and/or MMs:

The proposed project would implement **Project Features CUL-1 through CUL-2** and **Mitigation Measure CUL-1** to further reduce cultural impacts from construction activities (see Appendix B and Appendix C).

3.2.6 Energy

Would the project:

Question	CEQA Determination
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact

CEQA Significance Determinations for Energy

a) **No Impact** – The Proposed Build Alternative would not result in temporary or permanent wasteful, inefficient, or unnecessary consumption of energy resources. Construction activities would result in short-term energy consumption from the use of petroleum fuels by off-road construction equipment, and from on-road vehicles used by construction workers to travel to and from the site during construction and to deliver construction materials (Caltrans 2024c). With the implementation of **PF-GHG-1**, Caltrans would implement construction best management practices including ensuring regular vehicle and equipment maintenance, limiting vehicle idling, recycling nonhazardous wastes, and using solar-powered signal boards, if feasible. The project is not a capacity-increasing transportation project and would not increase use of energy resources. The project would not conflict with state and local plans for renewable energy and energy efficiency. There would be no impact.

b) **No Impact** – See a) above.

PFs, AMMs, and/or MMs:

The proposed project would implement **Project Feature GHG-1** to further reduce energy impacts from construction activities (see Appendix B).

3.2.7 Geology and Soils

Would the project:

Question	CEQA Determination
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	No Impact
ii) Strong seismic ground shaking?	No Impact
iii) Seismic-related ground failure, including liquefaction?	No Impact
iv) Landslides?	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No Impact

CEQA Significance Determinations for Geology and Soils

a) **No Impact –** The Proposed Build Alternative would be designed and constructed in accordance with Caltrans' Geotechnical Design Standards, current Seismic Design Criteria, and Standard Specifications. The project would not expose the public to additional hazards due to strong ground shaking, fault rupture, liquefaction, slope instability, soft soils, or expansive soils. The project would implement erosion control measures and Best Management Practices (BMPs) under Project Feature WQ-1 to further minimize any soil erosion of loss of topsoil.

b) **No Impact –** See a) above.

c) **No Impact –** See a) above.

d) **No Impact –** See a) above.

e) **No Impact –** See a) above.

f) **No Impact –** See a) above.

PFs, AMMs, and/or MMs:

The proposed project would implement **Project Feature WQ-1** to further reduce geologic impacts from construction activities (see Appendix B).

3.2.8 Greenhouse Gas Emissions

Would the project:

Question	CEQA Determination
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less Than Significant Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less Than Significant Impact

CEQA Significance Determinations for Greenhouse Gas Emissions

a) **Less than Significant Impact -** Caltrans has used the best available information based to the extent possible on scientific and factual information, to describe, calculate, or estimate the amount of greenhouse gas emissions that may occur related to this project. The analysis included in the climate change section of this document provides the public and decision-makers as much information about the project as possible. The proposed project would implement **PF-GHG-1** to reduce GHG emissions for all construction activities.

b) **Less than Significant Impact -** It is Caltrans' determination that in the absence of statewide-adopted thresholds or GHG emissions limits, it is too speculative to make a significance determination regarding an individual project's direct and indirect impacts with respect to global climate change. Caltrans remains committed to implementing measures to reduce the potential effects of the project. These measures are outlined in the climate change section that follows in Section 3.3.

PFs, AMMs and/or MMs:

The proposed project would implement **Project Feature GHG-1** and **Avoidance and Minimization Measure BIO-11** to further reduce construction-related emissions and impacts from construction activities (see Section 1.8 and Appendix B).

3.2.9 Hazards and Hazardous Materials

Would the project:

Question	CEQA Determination
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two nautical miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No Impact

CEQA Significance Determinations for Hazards and Hazardous Materials

Would the project:

a) No Impact - In 2013 and 2014, the supply and exhaust ventilation shafts of Bores 1, 2, and 3 were cleaned of the lead-containing dust and particulates that accumulated from vehicle exhaust inside the tunnel bores. With lead not having

been used as a fuel additive since the 1980s, the ventilation shafts have remained free of lead since that cleanup. The project area does not contain any sites known to contain hazardous materials. The project is also not located within an airport land use plan or within 2 miles of a public airport. The project would not create a hazard to the public or the environment.

b) No Impact – See a) above.

c) No Impact – See a) above.

d) No Impact – See a) above.

e) No Impact – See a) above.

f) Less than Significant Impact – Construction and operation of either of the project build alternatives would not interfere with any emergency evacuation or response plan. During construction of alternative, there would be necessary lane closures that may pose temporary traffic impacts to emergency services. However, Caltrans would implement **Project Feature TRA-1** to create a TMP in coordination with emergency service providers to provide notice to the public and maintain emergency access during construction. Therefore, the impact would be less than significant.

g) No Impact – The project is located in an area classified as being a very high fire severity zone. However, the project would not require any installation of infrastructures that may exacerbate fire risks or pose ongoing impacts to the environment. The project would not expose people or structures to effects of wildland fires. There would be no impact.

PFs, AMMs and/or MMs:
The proposed project would implement **Project Feature TRA-1** to ensure continuity of emergency evacuation and response plans. No additional project features or avoidance and minimization or mitigation measures are required to reduce hazardous waste impacts from construction activities (see Appendix B).

3.2.10 Hydrology and Water Quality

Would the project:

Question	CEQA Determination
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	No Impact

Question	CEQA Determination
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in substantial erosion or siltation on- or off-site;	No Impact
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	No Impact
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	No Impact
(iv) impede or redirect flood flows?	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No Impact

CEQA Significance Determinations for Hydrology and Water Quality

a) No Impact – The project, under the Proposed Build Alternative, would result in disturbed soil area (DSA) that is less than 1 acre. As a result, construction activities are not subject to the Construction General Permit (CGP). However, a water pollution control plan (WPCP) would be prepared to control all potential temporary construction impacts. As part of the WPCP, various temporary construction site best management practices (BMPs) would be included to reduce pollutants both during and after construction to the maximum extent practicable (MEP). BMPs include job site management, concrete waste management, sediment and erosion control measures, storm drain inlet protection, etc. With implementation of these BMPs as outlined in **Project Feature WQ-1**, the impacts on surface and groundwater would be less than significant.

b) No Impact - The amount of DSA as a result of the project is estimated to be less than 1 acre under either alternative. Once constructed, the amount of new impervious surface is estimated to be minimal at less than 1 acre as well. As a result, post-construction storm water treatment measures are not required. In addition, there are no proposed dewatering activities needed during construction.

There is also no temporary alteration or diversion of waterways or drainage patterns proposed during or after construction. Implementation of **Project Feature WQ-1** includes BMPs related to storm drain inlet protection to reduce sediment from entering the storm drainage system. Therefore, there would be no impact to drainage patterns, groundwater supplies or groundwater discharge, and any groundwater management plans.

c) No Impact – See b) above.

d) No Impact – See b) above.

No Impact – See b) above.

PFs, AMMs and/or MMs:
The proposed project would implement **Project Feature WQ-1** to further reduce water quality impacts from construction activities (see Appendix B).

3.2.11 Land Use and Planning

Would the project:

Question	CEQA Determination
a) Physically divide an established community?	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No Impact

CEQA Significance Determinations for Land Use and Planning

a) No Impact – The project would not physically divide an established community. The proposed project would not conflict with Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) Plan Bay Area 2050, Alameda County Transportation Commission (ACTC) Countywide Transportation Plan, Alameda County General Plan, City of Oakland General Plan, City of Oakland Department of Transportation (OakDOT) Strategic Plan, the Contra Costa County General Plan, and the City of Orinda General Plan. There would be no impact to any land use plans or policies.

b) No Impact – See a) above.

PFs, AMMs and/or MMs:
No impacts are anticipated; therefore, no measures are proposed.

3.2.12 Mineral Resources

Would the project:

Question	CEQA Determination
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	No Impact
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No Impact

CEQA Significance Determinations for Mineral Resources

a) No Impact – Loss of availability of any locally-important mineral resources is not anticipated in the proposed Project.

b) No Impact – See a) above.

PFs, AMMs and/or MMs:
No impacts are anticipated; therefore, no measures are proposed.

3.2.13 Noise

Would the project result in:

Question	CEQA Determination
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Less Than Significant Impact
b) Generation of excessive groundborne vibration or groundborne noise levels?	Less Than Significant Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two nautical miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact

CEQA Significance Determinations for Noise

a) Less than Significant Impact – The modeled construction noise levels at Receptors A, B, C & D as described in the Noise section of Chapter 2 (Section

2.3.6) is considerably below 86 dBA. In addition, the existing soundwall will further decrease the noise levels by up to 8 dBA. However, to further minimize the public noise disturbance resulting from the construction activities, **AMM's NOI-1 through NOI-8** will be implemented.

The project is not a capacity-increasing project and would not add additional travel lanes to local streets or to SR-24, so traffic noise levels would remain the same as existing once construction is completed. The noise impacts from this proposed project are due only to temporary construction activities. With implementation of the described Project Features, the project would not expose people residing or working in the project area to excessive noise levels during construction. The impact would be less than significant.

b) Less than Significant Impact – See a) above.

c) No Impact – The project is not located within the vicinity of an airport land use plan or within 2 miles of a public or private airport or airstrip. There would be no impact.

PFs, AMMs and/or MMs:

The proposed project would implement **Avoidance and Minimization Measures AMM-NOI-1 through AMM-NOI-8** to further reduce noise impacts from construction activities (see Appendix C).

3.2.14 Population and Housing

Would the project:

Question	CEQA Determination
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact

CEQA Significance Determinations for Population and Housing

Would the project:

a) No Impact - The project is a non-capacity increasing project and does not introduce new utilities to the area and so would not induce unplanned population

growth. The project would also not result in any property acquisitions or displacement of residents or businesses. There would be no impact.

b) No Impact – See a) above.

PFs, AMMs and/or MMs:

No impact is anticipated, and no additional measures are proposed.

3.2.15 Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

Question	CEQA Determination
a) Fire protection?	Less Than Significant Impact
b) Police protection?	Less Than Significant Impact
c) Schools?	No Impact
d) Parks?	Less Than Significant Impact
e) Other public facilities?	No Impact

CEQA Significance Determinations for Public Services

Less than Significant Impact - The project would not result in a use that would directly or indirectly induce population and employment growth in the City of Oakland, Alameda County, the City of Orinda, or Contra Costa County or permanently alter any of these public services. However, during construction of the Proposed Build Alternative there would be necessary lane closures and detours that may temporarily impact fire protection and police services. However, these temporary traffic impacts including detours would be reduced through implementation of a TMP, under **Project Feature TRA-1**. The TMP will include strategies to inform both the local community and wider region of alternate routes and detour to maintain access for emergency services. All closure plans will be notified to the public prior to construction via press releases/media alerts, paid advertisements, and the project website. Signs specifying closure times of the ramps will be posted at least 72 hours in advance. All closures will be coordinated with the CHP, local agencies of jurisdiction, and emergency services.

a)

b) Less than Significant Impact – See a) above.

c) No Impact – The proposed project would not result in a use that would directly or indirectly induce population and employment growth in the City of Oakland, Alameda County, the City of Orinda, or Contra Costa County or permanently alter any of these public services. There are no schools or other public facilities in the immediate vicinity of the project area. There would be no impacts.

d) Less than Significant Impact - During construction of the Proposed Build Alternative there would be necessary lane closures and detours. These lane closures and detours may temporarily impact access to the East Bay Regional Parks District properties located near the project area. However, these temporary traffic impacts would be reduced through implementation of a TMP, under Project Feature TRA-1, to maintain access for emergency services and provide adequate noticing and detours for the community.

e) No Impact – The project would not result in a use that would directly or indirectly induce population and employment growth in the City of Oakland, Alameda County, the City of Orinda, or Contra Costa County or permanently alter any of these public services. There are no schools or other public facilities in the immediate vicinity of the project area. There would be no impacts.

PFs, AMMs and/or MMs:

The proposed project would implement **Project Feature TRA-1** to further reduce emergency service availability impacts from construction activities (see Appendix B).

3.2.16 Recreation

Question	CEQA Determination
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact

CEQA Significance Determinations for Recreation

a) **No Impact -** The proposed project would not increase current highway or roadway capacity or induce population and employment growth in the City of Oakland, Alameda County, the City of Orinda, or Contra Costa County.

b) **No Impact -** The proposed project does not propose any expansion of recreational facilities and does not result in any use of public recreation areas. There would be no impact to recreational facilities.

PFs, AMMs and/or MMs:

No impacts are anticipated and no additional measures are proposed.

3.2.17 Transportation

Would the project:

Question	CEQA Determination
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No Impact
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No Impact
d) Result in inadequate emergency access?	Less Than Significant Impact

CEQA Significance Determinations for Transportation

a) **No Impact –** As described in the Human Environment of Chapter 2, the proposed project would not conflict with any local or regional program, plan, ordinance, or policy addressing transit or bicycle and pedestrian facilities.

b) **No Impact -** The proposed project would not include the addition of through traffic lanes on existing highways or roadways, so the Project would not conflict with CEQA Guidelines section 15064.3, subdivision (b).

c) **No Impact -** The proposed project would also not substantially increase any hazards due to geometric design features.

Less than Significant Impact - The proposed project would not result in inadequate emergency access. There are necessary lane closures that would be

needed during construction of the Proposed Build Alternative. However, these impacts would be temporary, and Caltrans would implement a TMP under **Project Feature TRA-1** to minimize temporary impacts to emergency access vehicles and services. The impact would be less than significant.

PFs, AMMs and/or MMs:

The proposed project would implement **Project Feature TRA-1** to further reduce impacts to emergency access from construction activities (see Appendix B).

3.2.18 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:

Question	CEQA Determination
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	Less Than Significant Impact
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less Than Significant Impact

CEQA Significance Determinations for Tribal Cultural Resources

a) **Less Than Significant** - The summary memo prepared by Caltrans Professionally Qualified Staff for this project identified a tribal sensitivity area within the project area or APE (Caltrans 2024f). Caltrans is currently participating in coordination efforts with Costanoan Rumsen Carmel Tribe and will continue to coordinate with the Tribal representatives throughout the project. If the project changes, the Office of Cultural Resource Studies (OCRS) would notify Tribal representatives. Caltrans would implement **Project Features CUL-1 and CUL-2** that would halt all construction activities if previously unidentified human remains or cultural resources are unearthed during construction until a qualified archaeologist can assess the discovery.

Caltrans contacted the Native American Heritage Commission (NAHC) on January 19, 2024, requesting a search of their Sacred Lands File (SLF) to determine if there are historically significant or sacred sites within or near the Project area. The NAHC responded that the project area was negative for cultural sites and provided a list of individuals from eleven indigenous groups for additional consultation. Letters initiating Section 106 of the National Historic Preservation Act (NHPA) and AB 52 were sent to each of the contacts on July 11, 2024. The Tribes contacted included: Amah Mutsun Tribal Band of Mission San Juan Bautista, Amah Mutsun Tribal Band, Confederated Villages of Lisjan Nation, Costanoan Rumsen Carmel Tribe, Guidiville Rancheria of California, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the SF Bay Area, North Valley Yokuts Tribe, The Ohlone Indian Tribe, Wilton Rancheria, and the Wuksachi Indian Tribe / Eshom Valley Band.

Muwekma Ohlone Indian Tribe of the SF Bay Area responded on July 15, 2024 with information about the tribe and the area. They concluded that formal tribal consultation is not necessary relative to this specific project and request to be notified in the future should any ancestral remains or signification subsurface features be uncovered. Caltrans will notify the Tribe of any changes or finds. Confederated Villages of Lisjan Nation responded on July 15, 2024 and would like to be notified of any changes to the project. Caltrans will notify the Tribe of any changes or finds. The Costanoan Rumsen Carmel Tribe responded on July 15 and requested consultation. A field meeting with the Tribe occurred on September 18, 2024 and the Tribe has requested to monitor construction. Consultation is ongoing and the Tribe has requested to be involved until the conclusion of the project.

b) **Less than Significant Impact –** See a) above.

PFs, AMMs and/or MMs:

Caltrans will implement **Avoidance and Minimization Measure TCR-1 and TCR-2** to minimize impacts to Tribal cultural resources from construction activities. In addition, the proposed project would implement **Project Features TCR-1, CUL-1, and CUL-2** to further reduce impacts to Tribal cultural resources from construction activities (see Appendix B and Appendix C).

3.2.19 Utilities and Service Systems

Would the project:

Question	CEQA Determination
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less Than Significant Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No Impact
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	No Impact

CEQA Significance Determinations for Utilities and Service Systems

a) Less than Significant Impact - Construction of the Proposed Build Alternative may require protections, adjustments, or relocations of PG&E, AT&T, and water facilities. Final verifications of utilities would be performed during the project's Design phase, which may reveal additional utility relocations needed. For utilities that require relocation, it is anticipated that these utilities would be relocated prior to construction. Implementation of **Project Features UTIL-1**, trash management, **and UTIL-2**, notifying utilities of construction schedule, would further reduce any impacts to utilities during construction. As plans are further developed during the design phase, should any utility impacts be identified, additional Avoidance and Minimization measures may be applied.

b) No Impact - The Proposed Build Alternative would not directly increase the number of residents in the area because residential land uses are not proposed.

c) **No Impact -** The project would not increase the demand for additional water or wastewater treatment.

d) **No Impact -** The project also would not generate excess solid waste or interfere with solid waste-related regulations.

PFs, AMMs and/or MMs:

The proposed project would implement **Project Features UTIL-1 and UTIL-2** to further reduce impacts to utility services from construction activities (see Section 1.8 and Appendix B).

3.2.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Question	CEQA Determination
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No Impact

CEQA Significance Determinations for Wildfire

a) **Less than Significant Impact -** The project would not result in impairment of an adopted emergency response plan or emergency evacuation plan. However, construction of the Proposed Build Alternative would require lane closures that may pose traffic impacts to emergency services in the area. These impacts would be temporary, and Caltrans would implement a TMP under **Project Feature TRA-1** to minimize temporary impacts to emergency access vehicles and services. The impact would be less than significant.

b) No Impact - The project is located in an area classified as being a very high fire severity zone. However, the project would not exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

c) No Impact – The project is located in an area classified as being a very high fire severity zone. However, the project would not require any installation of infrastructure that may exacerbate fire risks or pose ongoing impacts to the environment.

d) No Impact - The project would not expose people or structures to other risks such as flooding or landslides.

PFs, AMMs and/or MMs:

The proposed project would implement **Project Feature TRA-1** to further reduce impacts to wildfire risk from construction activities (see Appendix B).

3.2.21 Mandatory Findings of Significance

Question	CEQA Determination
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	Less Than Significant with Mitigation Incorporated
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	Less Than Significant Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	Less Than Significant Impact

CEQA Significance Determinations for Mandatory Findings of Significance

a) Less than Significant Impact with Mitigation Incorporated - As described in Section 2.4, Biological Resources, due to the lack of suitable habitat present within

the highly disturbed and urban BSA, only seven of these special-status animal species have a low potential to occur, and none are expected to be impacted by this project. Migratory birds, bats, monarch butterfly, and Alameda whipsnake have potential to occur within the BSA, but the project would implement **Avoidance and Minimization Measures BIO-1 through BIO-4** that would require pre-construction surveys, non-disturbance buffers around any active nests found, and that vegetation removal be avoided during the nesting season. **Avoidance and Minimization Measures BIO-5 through BIO-14** would further reduce impacts to natural communities, plant and animal species, and other biological resources during construction.

Section 2.2.4, Cultural Resources, describes the historic resource, Bores 1 and 2 of the Caldecott Tunnel, within the APE prepared for the project. There are no archaeological resources identified within the project area. The project includes **Project Features CUL-1 and CUL-2** to halt all construction activities in the event that human remains or other cultural resources are found until an archaeologist can assess the discovery. With implementation of these project Features found in Appendix B, impacts would be reduced to a less than significant level. The project also includes **Mitigation Measure CUL-1** for the historic bores.

b) Less than Significant Impact - The project proposes improvements to existing transportation infrastructure within the project area. With incorporation of project Features and avoidance and minimization measures, construction and operation of the project under either alternative would not result in a substantial contribution to a cumulatively considerable impact.

c) Less than Significant Impact - The proposed project would not result in significant environmental impacts with implementation of Project Features and several avoidance and minimization measures (AMMs). The Project Features and AMMs identified in Chapter 1, Chapter 2, and Appendix B would address the potential impacts of the project that could affect human beings. **AMM's NOI-1 through NOI-8** would collectively address the potential noise impacts during construction. While this project is exempt from determining air quality conformity per 40 CFR 93.123 and so would not result in impacts to air quality, the project would still incorporate **Project Feature GHG-1** to reduce emissions. With implementation of these Project Features and AMMs included in Appendix B and C, respectively, the project would not have a substantial direct or indirect impact on the human environment, and impacts would be less than significant.

3.3 CLIMATE CHANGE

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the Earth's climate system. The Intergovernmental Panel on Climate Change, established by the United Nations and World Meteorological Organization in 1988, is devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy. Climate change in the past has generally occurred gradually over millennia, or more suddenly in response to cataclysmic natural disruptions. The research of the Intergovernmental Panel on Climate Change and other scientists over recent decades, however, has unequivocally attributed an accelerated rate of climatological changes over the past 150 years to GHG emissions generated from the production and use of fossil fuels.

Human activities generate GHGs consisting primarily of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; while it is a naturally occurring and necessary component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2 that is the main driver of climate change. In the U.S. and in California, transportation is the largest source of GHG emissions, mostly CO_2.

The impacts of climate change are already being observed in the form of sea level rise, drought, extended and severe fire seasons, and historic flooding from changing storm patterns. The most important strategy to address climate change is to reduce GHG emissions. Additional strategies are necessary to mitigate and adapt to these impacts. In the context of climate change, "mitigation" involves actions to reduce GHG emissions to lessen adverse impacts that are likely to occur. "Adaptation" is planning for and responding to impacts to reduce vulnerability to harm, such as by adjusting transportation design standards to withstand more intense storms, heat, and higher sea levels. This analysis will include a discussion of both in the context of this transportation project.

3.3.1 Regulatory Setting

For a full list of laws, regulations, and guidance related to climate change (GHGs and adaptation), please refer to Caltrans' Standard Environmental Reference (SER), Chapter 16, Climate Change.

3.3.1.1 Federal

To date, no nationwide numeric mobile-source GHG reduction targets have been established; however, federal agencies are mandated to consider the effects of climate change in their environmental reviews.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) is the basic national charter for protection of the environment which establishes policy, sets goals, and provides direction for carrying out the policy. NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project. In May 2024, the White House Council on Environmental Quality (CEQ) issued the National Environmental Policy Act Implementing Regulations Revisions Phase 2 (89 Fed. Reg. 35442). The CEQ regulations do not establish numeric thresholds of significance, but mandate that federal agencies consider the effects of climate change in their environmental reviews, including direct, indirect, and cumulative impacts. The CEQ regulations further require that agencies quantify greenhouse gas emissions, where feasible, from the proposed action and alternatives. The regulations also direct agencies to identify reasonable alternatives that reduce climate change-related effects.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea level rise, 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 2022). 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.

Early efforts by the federal government to improve fuel economy and energy efficiency to address climate change and its associated effects include The Energy Policy and Conservation Act of 1975 (42 USC Section 6201); and Corporate Average Fuel Economy (CAFE) Standards. The U.S. Department of Transportation’s National Highway Traffic and Safety Administration (NHTSA) sets and enforces corporate average fuel economy (CAFÉ) standards for on-road motor vehicles sold in the United States. The Environmental Protection Agency (U.S. EPA) calculates average fuel economy levels for manufacturers, and also sets related GHG emissions standards for vehicles under the Clean Air Act. Raising CAFE standards leads automakers to create a more fuel-efficient fleet, which improves our nation’s energy security, saves consumers money at the pump, and reduces GHG emissions (U.S. DOT 2014). These standards are periodically updated and published through the federal rulemaking process.

3.3.1.2 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).

In 2005, EO S-3-05 initially set a goal to reduce California's GHG emissions to 80 percent below year 1990 levels by 2050, with interim reduction targets. Later EOs and Assembly and Senate bills refined interim targets and codified the emissions reduction goals and strategies. The California Air Resources Board (ARB) was directed to create a climate change scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Ongoing GHG emissions reduction was also mandated in Health and Safety Code (H&SC) Section 38551(b). In 2022, the California Climate Crisis Act was passed, establishing state policy to reduce statewide human-caused GHG emissions by 85 percent below 1990 levels, achieve net zero GHG emissions by 2045, and achieve and maintain negative emissions thereafter.

Beyond GHG reduction, the State maintains a climate adaptation strategy to address the full range of climate change stressors, and passed legislation requiring state agencies to consider protection and management of natural and working lands as an important strategy in meeting the state's GHG reduction goals.

3.3.2 Environmental Setting

The proposed project is in an urban/suburban area of Alameda and Contra Costa County with a well-developed road and street network. The project area is mainly vacant residential land, single family residential homes, and East Bay Regional Park District land. The land owned by the East Bay Regional Park District covers the top of the tunnel and will not be impacted by the project's rehabilitation work. The tunnel in the project area is heavily used during peak hours. The Metropolitan Transportation Commission's Regional Transportation Plan (RTP)/ Sustainable Communities Strategy (SCS), also known as Plan Bay Area 2050, guides transportation and housing development in Alameda County, Contra Costa County, and the larger San Francisco Bay Area. The City of Oakland's Equitable Climate Action Plan and the Municipal Climate Action Plan address GHGs and air pollution in the project area.

3.3.2.1 GHG Inventories

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. U.S. EPA is responsible for documenting GHG emissions nationwide, and the ARB does so for the state of California, as required by H&SC Section 39607.4. Cities and other local jurisdictions may also conduct local GHG inventories to inform their GHG reduction or climate action plans.

National GHG Inventory

The annual GHG inventory submitted by the U.S. EPA to the United Nations provides a comprehensive accounting of all human-produced sources of GHGs in the United

States. Total national GHG emissions from all sectors in 2022 were 5,489.0 million metric tons (MMT), factoring in deductions for carbon sequestration in the land sector. (Land Use, Land Use Change, and Forestry provide a carbon sink equivalent to 15% of total U.S. emissions in 2022 [U.S. EPA 2024a].) While total GHG emissions in 2022 were 17% below 2005 levels, they increased by 1% over 2021 levels. Of these, 80% were CO_2, 11% were CH_4, and 6% were N_2O; the balance consisted of fluorinated gases. From 1990 to 2022, CO_2 emissions decreased by only 2% (U.S. EPA 2024a).

The transportation sector's share of total GHG emissions remained at 28% in 2022 and continues to be the largest contributing sector (Figure 30). Transportation activities accounted for 37% of U.S. CO_2 emissions from fossil fuel combustion in 2022. This is a decrease of 0.5% from 2021 (U.S. EPA 2024a, 2024b)).

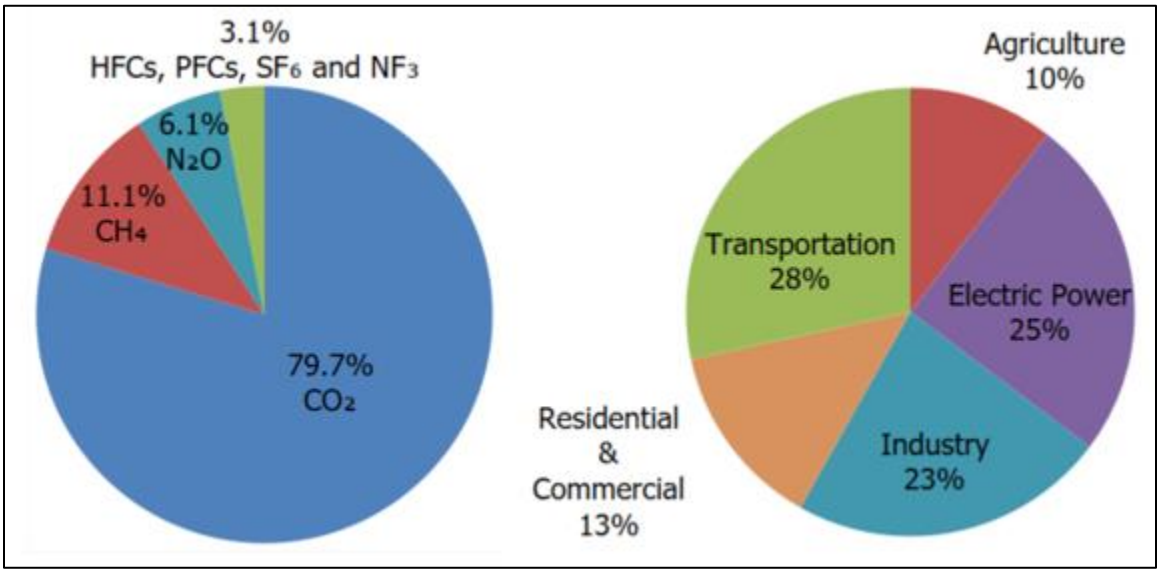
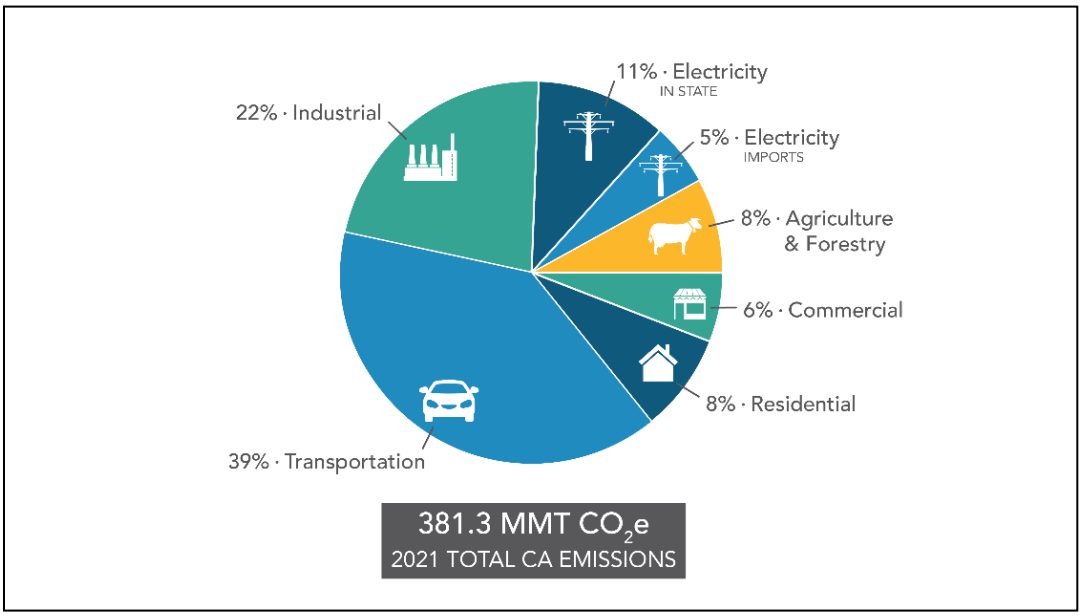


Figure 30. U.S. 2022 GHG Emissions

(Source: U.S. EPA 2024b)

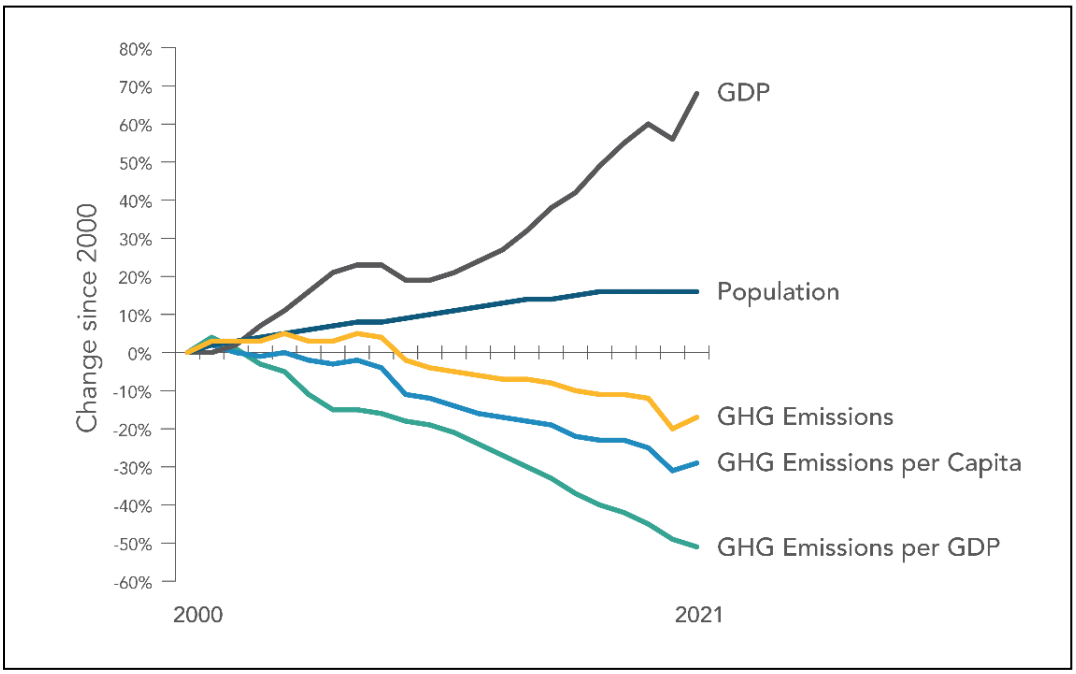
State GHG Inventory

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. Overall statewide GHG emissions declined from 2000 to 2021 despite growth in population and state economic output (Figure 31). Transportation emissions remain the largest contributor to GHG emissions in the state (Figure 32) (ARB 2023).



(Source: ARB 2023)

Figure 31. California 2021 Greenhouse Gas Emissions by Economic Sector



(Source: ARB 2023)

Figure 32. Change in California GDP, Population, and GHG Emissions since 2000

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. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions. 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 *2022 Scoping Plan for Achieving Carbon Neutrality,* adopted September 2022, assesses progress toward the statutory 2030 reduction goal and defines a path to reduce human-caused emissions to 85 percent below 1990 levels and achieve carbon neutrality no later than 2045, in accordance with AB 1279 (ARB 2022a).

3.3.2.2 Regional Plans

ARB sets regional GHG reduction targets for California's 18 metropolitan planning organizations (MPOs) to achieve through planning future projects that will cumulatively achieve those goals, and reporting how they will be met in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The proposed project is included in the RTP/SCS for the Metropolitan Transportation Commission (MTC). The regional reduction target for MTC is 19 percent by 2035 (ARB 2021b).

Table 7. Regional and Local Greenhouse Gas Reduction Plans

Title	GHG Reduction Policies or Strategies
Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) - Plan Bay Area 2050 (adopted October 2021)	• Expand commute trip reduction programs at major employers. • Expand clean vehicle initiatives. • Expand transportation demand management initiatives. • Build a Complete Streets network. • Advance regional Vision Zero policy through street design and reduced speeds. • Enhance local transit frequency, capacity, and reliability. • Expand and modernize the regional rail network. • Build an integrated regional express lanes and express bus network.
City of Oakland - 2030 Equitable Climate Action Plan [ECAP] (adopted in Jul 2020)	• Shift to 100% carbon-free energy. • Eliminate fossil fuels from building heating systems. • Improve building insulation and windows.

	• Significantly shift people away from private auto trips. • Accelerate the electrification of vehicles.
Contra Costa County Municipal Climate Action Plan/Envision Contra Costa 2040 (adopted in 2015, currently undergoing revision)	• Achieve GHG emissions reduction target of 15% below baseline levels by 2020. • Support employee carpool and vanpool programs. • Direct digital control for heating, ventilation, and air conditioning systems in County buildings. • Support flexible employee work schedules.

3.3.3 Project Analysis

GHG emissions from transportation projects can be divided into those produced during operation and use of the State Highway System (SHS) (operational emissions) and those produced during construction. The primary GHGs produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. CO_2 emissions are a product of burning gasoline or diesel fuel in internal combustion engines, along with relatively small amounts of CH_4 and N_2O. A small amount of HFC emissions related to refrigeration is also included in the transportation sector. (GHGs differ in how much heat each traps in the atmosphere, called global warming potential, or GWP. CO_2 is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent", or CO_2e. The global warming potential of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2.)

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.

3.3.3.1 Operational Emissions

The purpose of the proposed project is to rehabilitate the Caldecott Tunnel, and it will not increase the vehicle capacity of the roadway. This type of project generally causes minimal or no increase in operational GHG emissions. Because the project would not increase the number of travel lanes on SR-24, no increase in vehicle miles traveled (VMT) would occur. While some GHG emissions during the construction period would be unavoidable, no increase in operational GHG emissions is expected.

3.3.3.2 Construction Emissions

Construction GHG emissions would result from material processing and transportation, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. While construction GHG emissions are only produced for a short time, they have long-term effects in the atmosphere, so cannot be considered “temporary” in the same way as criteria pollutants that subside after construction is completed.

Use of long-life pavement, improved traffic management plans, and changes in materials can also help offset GHG emissions produced during construction by allowing longer intervals between maintenance and rehabilitation activities.

Caltrans prepared a Construction Greenhouse Gas (GHG) Analysis (Caltrans 2024a) for the project. The results of the GHG emissions analysis are shown below in Table 8. The construction-related GHG emissions were calculated using the Construction Emissions Tool 2021 (CAL-CET 2021), version 1.0, developed by the California Department of Transportation. It was estimated that for construction of this project, the total amount of CO2 produced due to construction would be 1,779 tons.

Table 8. Summary of Construction-Related GHG Emissions

Project Location: Contra Costa County on Route 24, PM R0.1	PARAMETERS			PROJECT TOTAL
	CO2 (tons)	CH4 (tons)	N2O (tons)	CO2e (metric tons)
TOTAL EMISSIONS	1,779	0.039	0.097	1,740

All construction contracts include Caltrans Standard Specifications related to air quality. Section 7-1.02A and 7 1.02C, Emissions Reduction, requires contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all ARB emission reduction regulations. Section 14-9.02, Air Pollution Control, requires

contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

3.3.3.3 CEQA Conclusion

While the proposed Project would result in GHG emissions during construction, it is anticipated that the project would not result in any increase in operational GHG emissions. 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.

3.3.4 Greenhouse Gas Reduction Strategies

3.3.4.1 Statewide Efforts

In response to Assembly Bill 32, the Global Warming Solutions Act, California is implementing measures to achieve emission reductions of GHGs that cause climate change. Climate change programs in California are effectively reducing GHG emissions from all sectors of the economy. These programs include regulations, market programs, and incentives that will transform transportation, industry, fuels, and other sectors to take California into a sustainable, cleaner, low-carbon future, while maintaining a robust economy (ARB 2022b).

Major sectors of the California economy, including transportation, will need to reduce emissions to meet 2030 and 2050 GHG emissions targets. The Governor's Office of Planning and Research identified five sustainability pillars in a 2015 report: (1) Increasing the share of renewable energy in the State's energy mix to at least 50 percent by 2030; (2) Reducing petroleum use by up to 50 percent by 2030; (3) Increasing the energy efficiency of existing buildings by 50 percent by 2030; (4) Reducing emissions of short-lived climate pollutants; and (5) Stewarding natural resources, including forests, working lands, and wetlands, to ensure that they store carbon, are resilient, and enhance other environmental benefits (OPR 2015).

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). Reducing today's petroleum use in cars and trucks is a key state goal for reducing greenhouse gas emissions by 2030 (California Environmental Protection Agency 2015).

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Subsequently, Governor Gavin Newsom issued Executive Order N-82-20 to combat the crises in climate change and biodiversity. It instructs state agencies to use existing authorities and resources to identify and implement near- and long-term actions to accelerate natural removal of carbon and build climate resilience in our forests, wetlands, urban greenspaces, agricultural soils, and land conservation activities in ways that serve all communities and in particular low-income, disadvantaged, and vulnerable communities. To support this order, the California Natural Resources Agency released *Natural and Working Lands Climate Smart Strategy* (California Natural Resources Agency 2022).

3.3.4.2 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.

Climate Action Plan for Transportation Infrastructure

The California Action Plan for Transportation Infrastructure (CAPTI) builds on executive orders signed by Governor Newsom in 2019 and 2020 targeted at reducing GHG emissions in transportation, which account for more than 40 percent of all polluting emissions, to reach the state's climate goals. Under CAPTI, where feasible and within existing funding program structures, the state will invest discretionary transportation funds in sustainable infrastructure projects that align with its climate, health, and social equity goals (California State Transportation Agency 2021).

California Transportation Plan

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. It serves as an umbrella document for all the other statewide transportation planning documents. The CTP 2050 presents a vision of a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health. The plan's climate goal is to achieve statewide GHG emissions reduction targets and increase resilience to climate change. It demonstrates how GHG emissions from the transportation sector can be reduced through advancements in clean fuel technologies; continued shifts toward active travel, transit,

and shared mobility; more efficient land use and development practices; and continued shifts to telework (Caltrans 2021a).

Caltrans Strategic Plan

The *Caltrans 2020–2024 Strategic Plan* includes goals of stewardship, climate action, and equity. Climate action strategies include developing and implementing a Caltrans Climate Action Plan; a robust program of climate action education, training, and outreach; partnership and collaboration; a VMT monitoring and reduction program; and engaging with the most vulnerable communities in developing and implementing Caltrans climate action activities (Caltrans 2021b).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) established a policy to ensure coordinated efforts to incorporate climate change into Caltrans decisions and activities. Other Director's policies promote energy efficiency, conservation, and climate change, and commit Caltrans to sustainability practices in all planning, maintenance, and operations. *Caltrans Greenhouse Gas Emissions and Mitigation Report* (Caltrans 2020) provides a comprehensive overview of Caltrans' emissions and current Caltrans procedures and activities that track and reduce GHG emissions. It identifies additional opportunities for further reducing GHG emissions from Department-controlled emission sources, in support of Caltrans and State goals.

3.3.4.3 Project-Level GHG Reduction Strategies

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

Construction contractors would comply with Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Some construction best management practices (BMPs) that would be implemented, as part of **Project Feature GHG-1**, include providing regular vehicle and equipment maintenance, limiting idling of vehicles and equipment at the job site, recycling nonhazardous waste and excess material, and using solar-powered signal boards if feasible.

Project Features AES-1 and Avoidance and Minimization Measure AES-2 requires Caltrans to minimize vegetation removal and engage in replacement tree and vegetation planting. Likewise, **Avoidance and Minimization Measure BIO-14** also requires vegetation replanting with native species. Project Features are included in Appendix B.

3.3.5 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. Furthermore, the combined effects of transportation projects and climate stressors can exacerbate the impacts of both on vulnerable communities in a project area. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

3.3.5.1 Federal Efforts

Under NEPA Assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The *Fifth National Climate Assessment*, published in 2023, presents the most recent science and "analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; [It] analyzes current trends in global change, both human-induced and natural, and projects major trends for the subsequent 25 to 100 years … to support informed decision-making across the United States." Building on previous assessments, it continues to advance "an inclusive, diverse, and sustained process for assessing and communicating scientific knowledge on the impacts, risks, and vulnerabilities associated with a changing global climate" (U.S. Global Change Research Program 2023).

The U.S. Department of Transportation recognizes the transportation sector's major contribution of GHGs that cause climate change and has made climate action one of the department's top priorities (U.S. DOT 2023). FHWA's policy is 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 fosters resilience to climate effects and sustainability at the federal, state, and local levels (FHWA 2022).

The National Oceanic and Atmospheric Administration provides sea level rise projections for all U.S. coastal waters to help communities and decision makers assess

their risk from sea level rise. Updated projections through 2150 were released in 2022 in a report and online tool (NOAA 2022).

3.3.5.2 State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. A number of state policies and tools have been developed to guide adaptation efforts.

California's Fourth Climate Change Assessment (Fourth Assessment) (2018) provides information to help decision makers across sectors and at state, regional, and local scales protect and build the resilience of the state's people, infrastructure, natural systems, working lands, and waters. The Fourth Assessment reported that if no measures are taken to reduce GHG emissions by 2021 or sooner, the state is projected to experience an up to 8.8 degrees Fahrenheit increase in average annual maximum daily temperatures; a two-thirds decline in water supply from snowpack resulting in water shortages; a 77% increase in average area burned by wildfire; and large-scale erosion of up to 67% of Southern California beaches due to sea level rise. These effects will have profound impacts on infrastructure, agriculture, energy demand, natural systems, communities, and public health (State of California 2018).

Sea level rise is a particular concern for transportation infrastructure in the coastal zone. Major urban airports will be at risk of flooding from sea level rise combined with storm surge as early as 2040; San Francisco airport is already at risk. Miles of coastal highways vulnerable to flooding in a 100-year storm event will triple to 370 by 2100, and 3,750 miles will be exposed to temporary flooding. The Fourth Assessment's findings highlight the need for proactive action to address these current and future impacts of climate change.

To help actors throughout the state address the findings of California's Fourth Climate Change Assessment, AB 2800's multidisciplinary Climate-Safe Infrastructure Working Group published *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. This report provides guidance on assessing risk in the face of inherent uncertainties still posed by the best available climate change science. It also examines how state agencies can use infrastructure planning, design, and implementation processes to respond to the observed and anticipated climate change impacts (Climate-Safe Infrastructure Working Group 2018).

EO S-13-08, issued in 2008, directed state agencies to consider sea level rise scenarios for 2050 and 2100 during planning to assess project vulnerabilities, reduce risks, and increase resilience to sea level rise. It gave rise to the 2009 *California Climate Adaptation Strategy*, the Safeguarding California Plan, and a series of technical reports on statewide sea level rise projections and risks, including the *State of California Sea-Level Rise Guidance Update* in 2018. The reports addressed the full range of climate change impacts and recommended adaptation strategies. The current *California*

Climate Adaptation Strategy incorporates key elements of the latest sector-specific plans such as the *Natural and Working Lands Climate Smart Strategy*, *Wildfire and Forest Resilience Action Plan*, *Water Resilience Portfolio,* and the CAPTI (described above). Priorities in the 2023 *California Climate Adaptation Strategy* include acting in partnership with California Native American Tribes, strengthening protections for climate-vulnerable communities that lack capacity and resources, implementing nature-based climate solutions, using best available climate science, and partnering and collaboration to best leverage resources (California Natural Resources Agency 2023).

EO B-30-15 recognizes that effects of climate change threaten California's infrastructure and requires state agencies to factor climate change into all planning and investment decisions. Under this EO, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies*, to encourage a uniform and systematic approach to building resilience.

SB 1 Coastal Resources: Sea Level Rise (Atkins 2021) established statewide goals to "anticipate, assess, plan for, and, to the extent feasible, avoid, minimize, and mitigate the adverse environmental and economic effects of sea level rise within the coastal zone." As the legislation directed, the Ocean Protection Council collaborated with 17 state planning and coastal management agencies to develop the *State Agency Sea-Level Rise Action Plan for California* in February 2022. This plan promotes coordinated actions by state agencies to enhance California's resilience to the impacts of sea level rise (California Ocean Protection Council 2022).

3.3.5.3 Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans completed climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects of precipitation, temperature, wildfire, storm surge, and sea level rise.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments guide analysis of at-risk assets and development of Adaptation Priority Reports as a method to make capital programming decisions to address identified risks.

Caltrans Sustainability Programs

The Director's Office of Equity, Sustainability and Tribal Affairs supports implementation of sustainable practices at Caltrans. The *Sustainability Roadmap* is a periodic progress report and plan for meeting the Governor's sustainability goals related to EOs B-16-12, B-18-12, and B-30-15. The Roadmap includes designing new buildings for climate

change resilience and zero-net energy and replacing fleet vehicles with zero-emission vehicles (Caltrans 2023).

3.3.5.4 Project Adaptation Analysis

Sea Level Rise

The proposed project is outside the coastal zone and not in an area subject to sea level rise. Accordingly, direct impacts to transportation facilities due to projected sea level rise are not expected.

Precipitation and Flooding

The proposed project is not located within base floodplains, and direct impacts to transportation facilities due to flooding are not expected.

Wildfire

The proposed project is located in an area classified as being a very high fire severity zone. However, the project would not exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Temperature

The Caltrans District 4 Climate Change Vulnerability Assessment does not indicate temperature changes during the project's design life that would require adaptive changes in pavement design or maintenance practices.

Chapter 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 have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, stakeholder meetings, 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.

4.1.1 NATIVE AMERICAN TRIBAL CONSULTATION

Caltrans contacted the Native American Heritage Commission (NAHC) on January 19, 2024, requesting a review of their Sacred Lands File (SLF) to determine if there were known cultural resources within or near the APE. The results of the SLF, were negative and a list of Native American contacts affiliated with fifteen tribes with potential interest or information was provided. The individuals from eleven tribes were sent Section 106 of the National Historic Preservation Act (NHPA) and AB 58 consultation letters regarding the proposed project. The Tribes contacted included: Amah Mutsun Tribal Band of Mission San Juan Bautista, Amah Mutsun Tribal Band, Indian Canyon Mutsun Band of Costanoan, Chicken Ranch Rancheria of Me-Wuk Indians, Costanoan Rumsen Carmel Tribe, Guidiville Rancheria of California, Confederated Villages of Lisjan Nation, Muwekma Ohlone Indian Tribe of the SF Bay Area, Nashville Enterprise Miwok-Maidu-Nishinam Tribe, North Valley Yokuts Tribe, The Ohlone Indian Tribe, Tamien Nation, Tule River Indian Tribe, Wilton Rancheria, and the Wuksachi Indian Tribe / Eshom Valley Band. Consultation is ongoing.

4.1.2 STAKEHOLDER CONSULTATION

On February 1, 2024, Caltrans Office of Cultural Resource Studies sent Section 106 consultation letters via email to Section 106 stakeholders with an invitation to attend a Section 106 stakeholder meeting scheduled for February 27, 2024.

Caltrans contacted Daniel Levy, President, Oakland Heritage Alliance (OHA); Elizabeth McElligott, Assistant Deputy Director, County of Alameda Parks, Recreation and Historical Commission; Tim Mollette-Parks, Acting Chair, City of Oakland Landmarks Preservation Advisory Board; Dominique Vogelpohl, Project Planner, Contra Costa County Historical Landmarks Advisory Committee; Donna Baarsch, Planning Technician, City of Orinda Historic Landmarks Committee; Ralph Anderson, President, Alameda County Historical Society; Cindy Heitzman, Executive Director, California

Preservation Foundation (CPF); John Burgh, President, Contra Costa County Historical Society; Alison Burns, President, Orinda Historical Society; and Mary McCosker, President, Lafayette Historical Society. On February 12, 2024, Caltrans contacted Betty Marvin, Planner III, Historic Preservation, Oakland Cultural Heritage Survey. Follow-up emails and phone calls were made on February 14 and February 15 to organizations that had not replied.

Ms. McElligott replied on February 14 stating that the county reviewed the information Caltrans provided, and had no comments regarding the projects; Betty Marvin of the Oakland Cultural Heritage Survey replied on February 12 on behalf of the Advisory Board stating she did not expect to attend the meeting; Jon Haeber stated on February 15 that CPF might take part in the stakeholder meeting online, but ultimately did not attend; Contra Costa County Historical Society Executive Director Leigh Ann Davis expressed interest in the project but did not attend; Alison Burns stated on February 15 that the Orinda Historical Society board did not have any concerns about the project; Ms. McCosker replied on February 14 and said that she appreciated being invited to the meeting but did not feel the need to attend.

No replies were received from the Contra Costa County Historical Landmarks Advisory Committee or the Alameda County Historical Society.

The stakeholder meeting took place on February 27, 2024, and was attended by OHA President Daniel Levy and board member Naomi Schiff, and Donna Baarssh from the City of Orinda. Caltrans was represented by Lindsay Busse, Helen Blackmore, and Charles Palmer from the OCRS. The meeting included discussion of two Caltrans Tunnels and Tubes projects, EA 0J540 (Caldecott Bores 1, 2 and 3) and EA 2Y780 (Posey Tube and Webster Tube Ventilation Upgrade Project) because of the similarity of the projects. The OHA's primary concern was maintaining the integrity of the portal buildings. They had no concerns regarding the ventilation upgrades. The City of Orinda's primary interest was traffic and road closures associated with construction. Both organizations requested updates as the project progresses.

4.1.3 PUBLIC INVOLVEMENT PROCESS FOR DED

Prior to initiating the public review period, Caltrans published a notice of the Draft Environmental Document's (DED's) availability in the Contra Costa Times and Alameda Times-Star and on the Caltrans website (https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs). In addition, the notice was distributed through mailers to the local community and businesses within the immediate project area in early November 2024. The public comment period began once the DED was circulated to the public on January 6, 2025, and will last for 30 days, ending on February 6, 2025. A virtual public meeting will be held during the public comment period on January 22, 2025.

After the public comment period, all comments will be considered, and Caltrans will select a preferred alternative and make the final determination of the effect on the environment. Under the California Environmental Quality Act (CEQA), if no unmitigable significant adverse impacts are identified, Caltrans will prepare a Negative Declaration (ND) or Mitigated ND. Similarly, if Caltrans, as assigned by the Federal Highway Administration (FHWA), determines the National Environmental Policy Act (NEPA) action does not significantly impact the environment, Caltrans will issue a Finding of No Significant Impact (FONSI).

A Notice of Completion was submitted to the State Clearinghouse at the beginning of the public comment period on January 6, 2025. The project was then assigned a State Clearinghouse number. The State Clearinghouse will subsequently distribute copies of the DED to agencies for comments.

Chapter 5 List of Preparers

The following Caltrans staff and consultants contributed to the preparation and review of this IS-MND and EA are included below in Table 9.

Table 9. List of Preparers

Agency/Company	Name	Role
Environmental Analysis		
Caltrans	Larry Bonner	Office Chief, Office of Environmental Analysis
Caltrans	Wahida Rashid	Branch Chief, Alameda and Contra Costa, Environmental Analysis
Aesthetics		
Caltrans	Lydia Mac	Branch Chief, Office of Landscape Architecture
Caltrans	Felix Onukwugha	Landscape Architect
Caltrans	Diana Pink	Landscape Architect
Air Quality/Noise		
Caltrans	Shilpa Mareddy	Branch Chief, Office of Air and Noise
Caltrans	Radhika Mothkuri	Transportation Engineer, Air and Noise
Biology		
Caltrans	Matthew Rechs	Branch Chief, Office of Biological Science and Permits
Caltrans	Terence Jarrell	Biologist
Cultural Resources		
Caltrans	Helen Blackmore	Branch Chief, Architectural History
Caltrans	Kristina Montgomery	Branch Chief, Archaeology
Caltrans	Charles Palmer	Senior Environmental Scientist (Architectural History)
Caltrans	Lindsay Busse	Senior Environmental Scientist (Archaeology)
Geology and Soils, Paleontology		
Caltrans	Christopher Risden	Branch Chief, Office of Geotechnical Design
Caltrans	Adam Menke	Geotechnical Engineer
Caltrans	Jim Allen	Senior Engineer Specialist (Paleontology)
Hazardous Waste		
Caltrans	Christopher Wilson	District Branch Chief, Office of Environmental Analysis

Agency/Company	Name	Role
Hydrology and Water Quality		
Caltrans	Guang-Ru Li	Branch Chief, Alameda County, Office of Hydraulic Engineering
Caltrans	Mojgan Osooli	Branch Chief, Office of Water Quality
Caltrans	Mostafa Faghihi	Transportation Engineer, Water Quality
Right of Way		
Caltrans	Ping Tsai	Associate Right-of-Way Agent
Traffic Safety		
Caltrans	Ganesh Karkee	Senior Transportation Engineer
Caltrans	Junlin Chen	Transportation Engineer
Caltrans	Thet Oo	Transportation Engineer
Utilities		
Caltrans	Bryan Chew	Utilities Engineer
Design		
Caltrans	Jay Fong	Design Senior, Design Contra Costa County
Caltrans	Kendall Kitamura	Design Senior, Design Alameda County
Caltrans	Laura Marji	Project Engineer
Project Management		
Caltrans	Kenneth Puth	Project Manager, Division of Program/Project Management - East
Caltrans	Lawrence Fleming	Environmental Program Project Management
Caltrans	Byron Lim	Asset Management
AECOM		
AECOM	Syed Kazmi	Bridge Department Manager
AECOM	Dilip Shah	Mechanical Senior Manager
AECOM	Hailu Keremo	Electrical Manager
AECOM	Tyler Blauvelt	Electrical Design
Kleinfelder		
Kleinfelder	Cherish Cartagena	Biologist
Kleinfelder	Justin Castells	Architectural Historian
Kleinfelder	Denis Coghlan	Biologist
Kleinfelder	Amanda Jones Taylor	Architectural Historian (Section 4(f))

Agency/Company	Name	Role
Kleinfelder	Layal Nawfal	Associate Environmental Planner
Kleinfelder	Claire Yancey	Associate Environmental Planner

Chapter 6 Distribution List

Federal and Statewide Elected Officials

The Honorable Alex Padilla
United States Senate
333 Bush Street, Suite 3225
San Francisco, CA 94101

The Honorable Adam B. Schiff
United States Senate
One Post Street, Suite 2450
San Francisco, CA 94104

The Honorable Lateefah Simon
United States Congress (CA-12)
1 Kaiser Plaza, Suite 1010
Oakland, CA 94612

The Honorable Mark Desaulnier
United States House of Representatives (CA-10)
3100 Oak Road, Suite 110
Walnut Creek, CA 94597

The Honorable Jesse Arreguín
California State Senate, District 7
1515 Clay Street, Suite 2202
Oakland, CA 94612

The Honorable Tim Grayson
California State Senate, District 9
51 Moraga Way, Suite #2
Orinda, CA 94563

The Honorable Buffy Wicks
California State Assembly, District 14
1515 Clay Street, Suite 2201
Oakland, CA 94612

Alameda County Elected Officials
The Honorable Nate Miley
President of the Board
Alameda County Board of Supervisors, District 4
1221 Oak Street, Suite 536
Oakland, CA 94612

The Honorable David Haubert
Vice President of the Board
Alameda County Board of Supervisors, District 1
1221 Oak Street, Suite 536
Oakland, CA 94612

The Honorable Elisa Márquez
Alameda County Board of Supervisors, District 2
1221 Oak Street, Suite 536
Oakland, CA 94612

The Honorable Lena Tam
Alameda County Board of Supervisors, District 3
1221 Oak Street, Suite 536
Oakland, CA 94612

Contra Costa County Elected Officials

The Honorable John M. Gioia
Contra Costa County Board of Supervisors, District 1
1025 Escobar Street
Martinez, CA 94553

The Honorable Candace Andersen
Contra Costa County Board of Supervisors, District 2
309 Diablo Road
Danville, CA 94526

The Honorable Diane Burgis
Contra Costa County Board of Supervisors, District 3
1025 Escobar Street
Martinez, CA 94553

The Honorable Ken Carlson
Contra Costa County Board of Supervisors, District 4
1025 Escobar Street
Martinez, CA 94553

The Honorable Shanelle Scales Preston
Contra Costa County Board of Supervisors, District 5
1025 Escobar Street
Martinez, CA 94553

City of Oakland Elected Officials

Mayor Sheng Thao
City of Oakland
City Hall
1 Frank H. Ogawa Plaza #3
Oakland, CA 94612

Council President
City of Oakland Council
1 Frank H. Ogawa Plaza
Oakland, CA 94612

Zac Unger
Councilmember
City of Oakland Council District 1
1 Frank H. Ogawa Plaza
Oakland, CA 94612

Carroll Fife
Councilmember
City of Oakland Council District 3
1 Frank H. Ogawa Plaza
Oakland, CA 94612

Janani Ramachandran
Councilmember
City of Oakland Council District 4
1 Frank H. Ogawa Plaza, 2nd Floor
Oakland, CA 94612

Noel Gallo
Councilmember
City of Oakland Council District 5
1 Frank H. Ogawa Plaza, 2nd Floor
Oakland, CA 94612

Kevin Jenkins
Councilmember
City of Oakland Council District 6
1 Frank H. Ogawa Plaza, 2nd Floor
Oakland, CA 94612

Ken Houston
Councilmember
City of Oakland Council District 7
1 Frank H. Ogawa Plaza, 2nd Floor
Oakland, CA 94612

Rowena Brown
Councilmember
City of Oakland Council At-Large
1 Frank H. Ogawa Plaza, 2nd Floor
Oakland, CA 94612

City of Orinda Elected Officials

The Honorable Darlene K. Gee
Orinda City Council
22 Orinda Way
Orinda, CA 94563

Latika Malkani
Vice Mayor
22 Orinda Way
Orinda, CA 94563

Brandyn Iverson
Councilmember
22 Orinda Way
Orinda, CA 94563

Cara R. Hoxie
Councilmember
22 Orinda Way
Orinda, CA 94563

Janet Riley
Councilmember
22 Orinda Way
Orinda, CA 94563

Federal Agencies
U.S. Fish and Wildlife Service (USFWS)
2800 Cottage Way W-2605
Sacramento, CA 95825

U.S. Army Corps of Engineers (USACE)
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102

National Marine Fisheries Services (NMFS)
777 Sonoma Avenue Room 325
Santa Rosa, CA 95404

State Agencies

California Air Resources Board (CARB)
1001 I Street, Suite 2828
P.O. Box 2815
Sacramento, CA 95814

California Department of Conservation
801 K Street, MS 24-01
Sacramento, CA 95814

California Department of Fish & Wildlife (CDFW), Region 3
2825 Cordelia Road, Suite 100
Fairfield, CA 94534

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

California Native American Heritage Commission (NAHC)
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

California Natural Resources Agency
1416 9th Street, Suite 1311
Sacramento, CA 958114

California Transportation Commission
1120 N Street
Sacramento, CA 95814

Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812-3044

San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

State Clearinghouse, Executive Officer
1400 Tenth Street, Room 156
P.O. Box 3044 Sacramento, CA 95812

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

California Highway Patrol Area Office
3601 Telegraph Avenue
Oakland, CA 94609

Regional and Local Agencies

Alameda-Contra Costa Transit District (AC Transit)
1600 Franklin Street
Oakland, CA 94612

Association of Bay Area Governments (ABAG)
375 Beale Street
San Francisco, CA 94105

Bay Area Air Quality Management District (BAAQMD)
Chief Executive Officer
375 Beale Street, Suite 600
San Francisco, CA 94105

Metropolitan Transportation Commission (MTC)
375 Beale Street
San Francisco, CA 94105

Oakland Fire Department Administration
150 Frank H Ogawa Plaza Ste 3354
Oakland, CA 94612

Moraga-Orinda Fire Protection District
1280 Moraga Way
Moraga, CA 94556

Section 106 Stakeholders

Daniel Levy
President, Oakland Heritage Alliance
446 17th Street, Suite 301
Oakland, Calif. 94612

Elizabeth McElligott
Assistant Deputy Director
County of Alameda Parks, Recreation, and Historical Commission
224 West Winton Avenue, Room 111
Hayward CA 94544

Tim Mollette-Parks
Acting Chair
City of Oakland Landmarks Preservation Advisory Board
1 Frank H. Ogawa Plaza
Oakland, CA 94612

Dominique Vogelpohl
Project Planner
Contra Costa Historic Landmarks Committee
30 Muir Road
Martinez, CA 94553

Ralph Anderson
President
Alameda County Historical Society
P.O. Box 13145
Oakland, CA 94661

Cindy Heitzman
Executive Director
California Preservation Foundation
P.O. Box 192203
San Francisco, CA 94119

John Burgh
President
Contra Costa Historical Society

724 Escobar St
Martinez, CA 94553

Mary McCosker
President
Lafayette Historical Society
P.O. Box 133
Lafayette, CA 94549

Betty Marvin
Planner III
Historic Preservation, Oakland Cultural Heritage Survey
1 Frank H. Ogawa Plaza
Oakland, CA 94612

Appendix A Section 4(f)

Caldecott Tunnel Bores 1, 2, and 3 Rehabilitation and Ventilation Upgrade Project

Draft Individual Section 4(f) Evaluation

Alameda County & Contra Costa County, California
District 4, State Route 24, PM RO.01
EFIS: 0414000011, EA: 04-0J540

Prepared by:
State of California, Department of Transportation

October 2024

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

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1.0 Introduction

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

(1) There is no prudent and feasible alternative to using that land, and (2) the project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires coordination among the Department of the Interior in developing transportation projects and programs that use land protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer (SHPO) is also needed.

The California Department of Transportation (Caltrans) is the federal lead agency for National Environmental Policy Act and Section 4(f), pursuant to 23 USC 326 and 23 USC 327 and the Memorandum of Understanding dated May 27, 2022, and executed by the Federal Highway Administration (FHWA) and Caltrans. Responsibility for compliance with Section 4(f) has been assigned to Caltrans, including determinations and approval of Section 4(f) evaluations as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by the project action.

This document is the Draft Section 4(f) Evaluation. It is being circulated for comment at the same time as the Draft Environmental Assessment for this project. Caltrans will review comments made during the circulation period and input received by the officials with jurisdiction of the Section 4(f) resources and take them into account in the preparation of the Final Section 4(f) Evaluation.

The Draft Section 4(f) Evaluation compares the proposed build alternative presented in the Draft Environmental Assessment with the other alternatives as required by 23 Code of Federal Regulation (CFR) 774. If there is no feasible and prudent alternative that avoids use of the 4(f) property, the analysis and identification of the alternative that will cause the least overall harm will be documented in the Final Section 4(f) Evaluation, in addition

to identifying all possible planning that will be included in the action in order to minimize harm to the 4(f) properties.

2.0 Project Description

Caltrans proposes to rehabilitate Bores 1, 2, and 3 of the Caldecott Tunnel at postmile R5.80/R6.24 and R0.00/R0.60 on SR-24 in Alameda and Contra Costa. The project will preserve the structural integrity of the tunnel, improve ventilation performance and fire-fighting operational response, and extend its service life. Additional project information can be found in Section 2.3 below.

2.1 Purpose and Need

The purpose of this project is to rehabilitate Caldecott Tunnel Bores 1, 2, and 3. The project will preserve the structural integrity of the tunnel, improve ventilation performance and fire-fighting operational response, and extend its service life.

The project is needed because Headquarters Structure Maintenance and Investigation (SM&I) and District 4 identified deficiencies during inspection and concluded that the three bores required upgrades. If not addressed, the deficiencies would trigger more frequent maintenance and lead to more extensive repairs in the future. An independent consultant, WSP, was tasked by the Division of Engineering Services (DES) and District 04 to perform a risk analysis exploring the ventilation capacities of the Complex Tunnel/Tubes within the State of California to address smoke from vehicle fires of current commercial vehicles. The risk analysis concluded that Caldecott Tunnel Bores 1, 2, and 3 are of the top risk priority in the State and recommended ventilation upgrades.

2.2 Project Background and Existing Conditions

The Caldecott Tunnel Bores 1 and 2 were built in the 1930s to connect the Bay Area with rural Contra Costa County. The tunnel opened in 1937. Bores 1 and 2 consist of single barrel cast-in-place reinforced concrete horseshoe shaped tunnels on reinforced concrete slab-on-grade with lighting, ventilation, and fire and life safety functional systems. Bore 1 is 3616’ long with a vertical clearance of 14.2’. The roadway width is 20.8’ for two lanes of traffic. Bore 2 is 3610’ long and features the same construction and configuration as Bore 1, except for a clearance of 14.8’. Bore 3 was constructed in 1965 and is 3371’ long with a vertical clearance of 14.9’. Bore 3 is also a single barrel cast-in-place reinforced concrete horseshoe shaped tunnel. It has reinforced concrete cross passages and slab-on-grade with lighting, ventilation, and fire and life safety functional systems. The roadway width is 28’ for two lanes of traffic. The average annual daily traffic (AADT) count for the Caldecott Tunnel was 178,286 vehicles in 2021.

There is an additional Operations Maintenance and Control (OMC) building on the west end, or west portal, of the Caldecott Tunnel. This building also contains offices, storage rooms, and electrical equipment. This building is used to monitor safety within all bores of the Caldecott Tunnel.

Caldecott Tunnel Bore 4 was constructed in 2012 and is not part of this project.

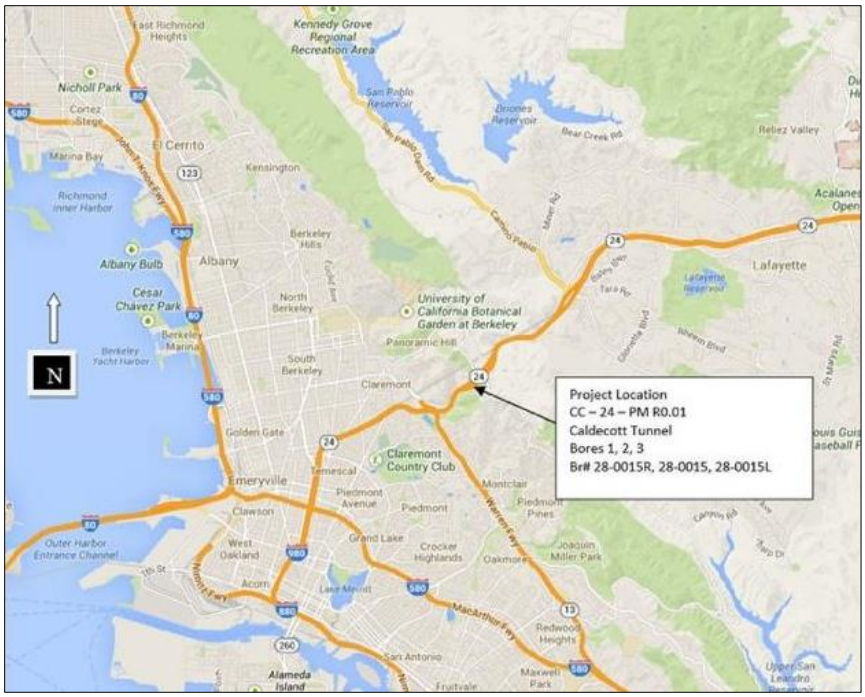

Figure 33. Project Location

This project was initiated in response to Structure Maintenance and Investigations (SM&I) in-depth inspection of the Caldecott Tunnel Bores 1, 2, and 3 in May 2020. The inspection identified that Bores 1, 2, and 3 required maintenance, repair, and rehabilitation, particularly of the concrete tunnels and slabs, which exhibited cracking, delamination, spalling, and efflorescence. The inspection also showed that the current ventilation systems require upgrades and included fans that are past their maintenance service life.

On December 27, 2021, WSP, an environmental consulting firm, finalized a Statewide Risk Assessment Report for Caltrans Road Tunnels. This report identifies Caldecott Tunnel Bores 1, 2, and 3 at a higher risk level for overall fire-life safety in terms of prioritizing improvement options based on the before improvement fire risk score (FRS) of 10.3 for Bore 3 and the FRS score of 10.0 for Bores 1 and 2, which are the second highest risk score in relative to a common benchmark tunnel (NFPA 502 compliant tunnel, half a mile long, 2400 vehicles per hour, traffic mix the same as Posey-Weber Tube).

Existing Conditions

Bores 1, 2, and 3 of the Caldecott Tunnel consist of two main components, or chambers. The lowest chamber is the driving lane, or roadway tunnel, which is the area of the tunnel used and seen by the public. The chambers positioned above the roadway tunnels are known as the plenum, or open-air space. Within Bores 1 and 2, the plenum is divided in half horizontally (Figure 2), and in Bore 3, the plenum is divided in half vertically (Figure 3).

For Bores 1 and 2, the exhaust plenum is located immediately above the ceiling of the roadway tunnel. This plenum is used to blow out smoke or other airborne debris from the tunnel. The fresh

air plenum is situated above the exhaust plenum. This chamber is used to bring in outside air to circulate through the tunnel (Figure 2).

For Bore 3, both the exhaust and fresh air supply plenums are located immediately above the roadway tunnel. The exhaust plenum is on the left side, and the fresh air supply plenum is on the right side (Figure 3).

The existing ventilation system in Bores 1 and 2 consists of eight total fans. There are two exhaust fans and two fresh air supply fans located in each of the east and west portal buildings. The fans circulate air through the plenums that run the length of the tunnel. Each of the eight fans is equipped with an automated damper, or flap, that can be used to separate the tunnel plenum from the portal building. There are air holes along the north wall of the fresh air supply plenum that connect the fresh air supply plenum to the roadway tunnel below.

In Bore 3, the existing ventilation system consists of four total fans. There are two exhaust fans and two fresh air supply fans within the west portal building. Each fan is equipped with a damper to separate the tunnel plenum from the portal building. There are air holes spaced every 15 feet along the length of the exhaust and fresh air supply plenum ceilings that allow the air to circulate throughout the roadway tunnel. Each of these air holes is also equipped with a damper that can open and close to regulate air flow. As Figure 2 and Figure 3 below are examples of what is found within the length of the tunnel, these fans are not shown. As described above, the existing fans for all three bores are located only within the portal buildings.

In addition to the fire and smoke protection provided by the ventilation systems, there is also a fire protection system that includes fire water supplies located throughout each tunnel bore and within each portal building. This fire water supply consists of two main pumps located at the west end of Bore 3. There is also a sprinkler system in the OMC building.

Within the lowest section of each bore, the roadway tunnel, there are cross passages running horizontally between the bores, also called adits. These cross passages are used to allow emergency personnel or maintenance personnel to easily cross between and access each bore. There are three cross passages between Bores 1 and 2 and one cross passage between Bores 3 and 4. These cross passages are not shown in the diagram below, but they are accessible from the driving lanes and are visible via illuminated signs with exit arrows.

The walls of the tunnel, the plenums, and the adits are made of concrete slabs. To prevent water buildup within the tunnel, there are drainage inlets on the north and south sides of all three bores that feed into a reinforced concrete pipe. There are 12 manholes along the centerline of each bore.

There is one electrical power distribution system that supplies power to all four bores of the Caldecott Tunnel. This power distribution system has two 12 kilovolt substations, one on the west portal end of the tunnel and one on the east portal end.

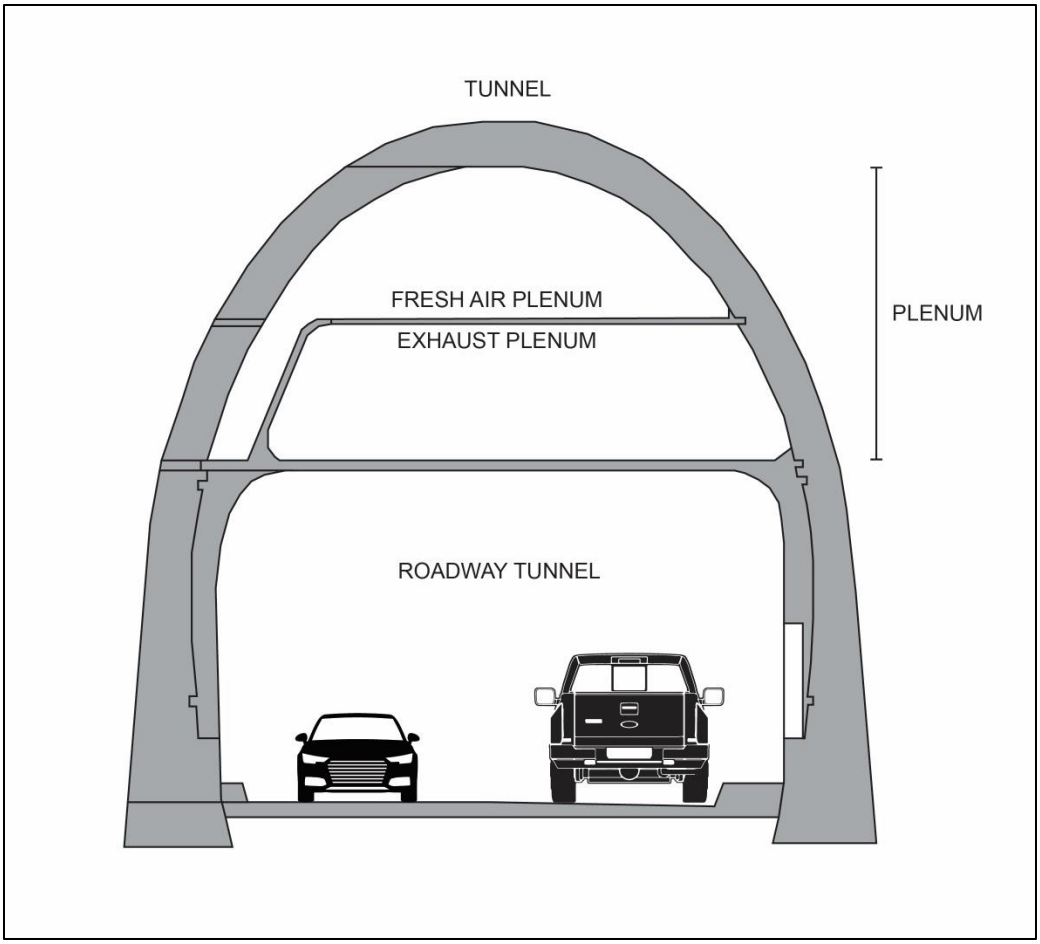

Figure 34. Cross Section of Existing Conditions for Bores 1 and 2.

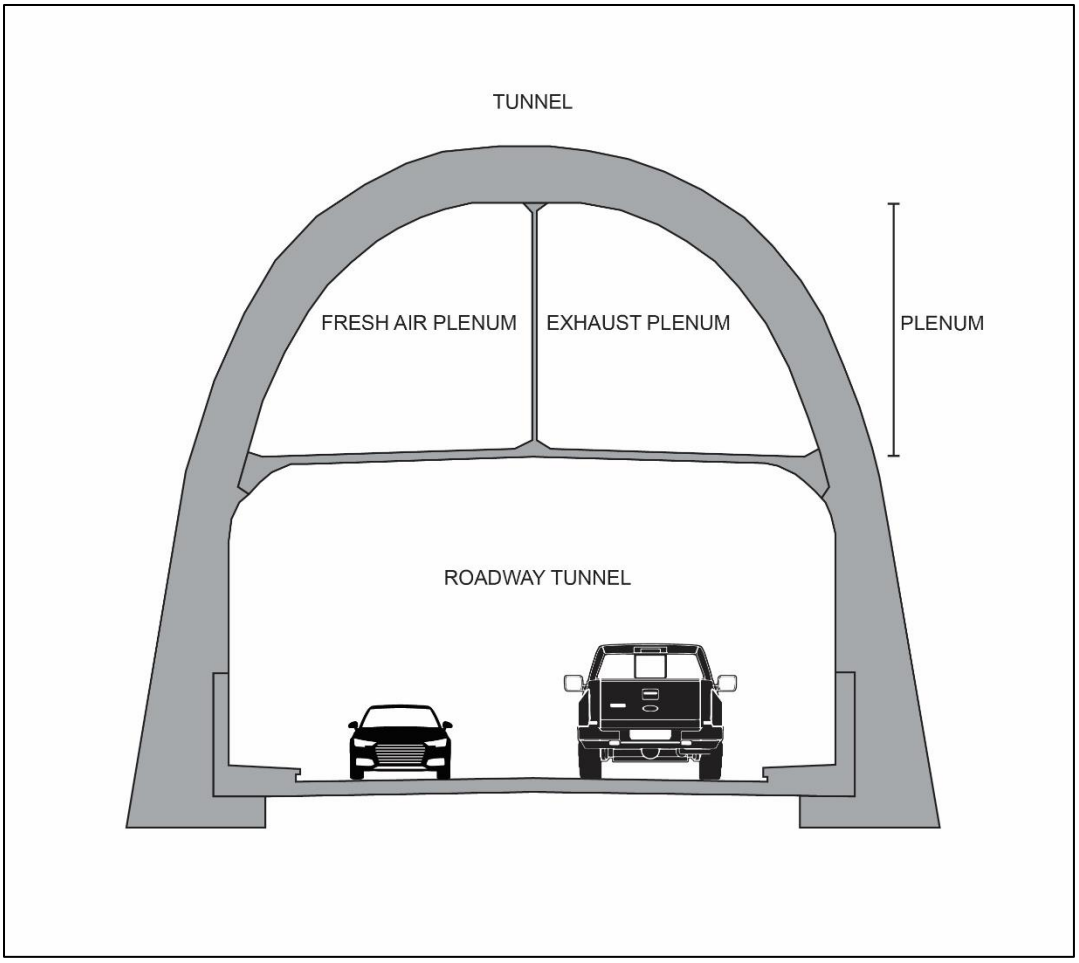

Figure 35. Cross Section of Existing Conditions for Bore 3.

2.3 Project Alternatives

2.3.1 No Build Alternative

The No Build Alterative would take no action. If the project is not constructed, continued and accelerated deterioration of the concrete pavement, drainage, and delineation markers in Bores 1, 2, and 3 will occur. If not addressed, this aging tunnel could trigger more frequent maintenance, and lead to more extensive repairs in the future. This alternative does not meet the purpose and need of the project.

2.3.2 Build Alternative

All work for this project will be the same across Bores 1, 2, and 3, except for the two design options for ventilation improvements. Build Alternative Option 1 will install Saccardo Nozzles in Bores 1 and 2. Build Alternative Option 2 will install jet fans in Bores 1 and 2. Both options will install jet fans in Bore 3.

The Build Alternative would rehabilitate Caldecott Tunnel Bores 1, 2, and 3 and provide additional fire system, ventilation, and electrical upgrades.

Common Design Features

Ventilation System Upgrades

The proposed project would upgrade the existing ventilation system for Bores 1, 2, and 3 to improve smoke management for egress and firefighting in the event of a fire related emergency. There are different two design options for ventilation improvements in Bores 1 and 2. Option 1 will install Saccardo Nozzles in Bores 1 and 2. Option 2 will install jet fans in Bores 1 and 2. Both options will involve the installation of jet fans in Bore 3.

Tunnel Repairs

The proposed project will repair and patch any cracking or fragmented concrete. Any unsound concrete will be removed. Weepholes, which are small openings used to allow water to escape the tunnel, will be cleaned out. Any other cracking, rust, or salt deposits will be cleaned and removed. Concrete curbs and metal guardrails will also be replaced. These repairs will cover an area of approximately 8,500 square feet for Bore 1, 8,800 square feet for Bore 2, and 5,500 square feet for Bore 3.

Plenum Repairs

The proposed project will rehabilitate and repair all plenums in Bores 1, 2, and 3. Repairs will include rehabilitation of the floor slabs for each plenum and replacement of the slab with thicker, sturdier cement.

Adit Repairs

The proposed project will conduct rehabilitation work on the adits, or tunnel cross passages. The existing adits do not have adequate lighting or ventilation systems. Caltrans will also repair the adit floors and walls as well as remove any lead contaminants found within.

Safety Updates

The proposed project will incorporate a number of safety updates throughout Bores 1, 2, and 3. Updates will include installing a new sprinkler system; repairing or replacing all lane markers and safety markers to ensure visibility; upgrading the existing call boxes, fire extinguishers and fire extinguisher boxes, and carbon dioxide sensors; installing a public address (PA) system; upgrading the lighting system; and upgrading the changeable message signs (CMS) at the west portal.

Electrical System Upgrades

For the west portal, the proposed project will place a new transformer and motor control center (MCC) in the existing Bore 3 portal building. The two pads for the new electrical equipment will measure approximately 31’ by 3.10’ and 31’ by 6.6’. A 4” conduit will be placed along the existing roadway or existing conduit pathway to connect the transformer and MCC to the West Bore 1 and Bore 2 ventilation room. Any trenching required will be a combination of horizontal directional drilling (HDD) and open trenching.

For the east portal, the proposed project will place a new transformer and motor control center (MCC) adjacent to the existing electrical equipment pad east of the portal entrance. This equipment will require two concrete pads, one measuring approximately 31’ by 3.10’ and 31’ by 6.6’. A 4” conduit will be placed using open trenching along the existing roadway or existing conduit pathway to connect the transformer and MCC to the power substation near the east entrance of Bores 1 and 2. All trenching will be completed by hand or using a mini excavator. All trenches will be backfilled and placed to avoid existing trees and other vegetation.

Build Alternative Option 1, Saccardo Nozzle Ventilation System: Bores 1 and 2

This option would install a Saccardo Nozzle Ventilation System using supply fans to improve smoke management and to facilitate the safe exit by the traveling public from the tunnel during a fire, as well as to help firefighting efforts by managing the smoke from a fire (Figure 4, Figure 5, and Figure 6). This system includes one Saccardo Nozzle, with an opening approximately 22’ long by 7.5’ wide, to be placed at an angle in the fresh air plenum. This nozzle placement would also require an approximately 6.5’ high by 7’ wide duct to be placed in the fresh air plenum. Placement of the Saccardo Nozzle would be finalized during the next phase of this project, the Design Phase.

The Saccardo Nozzle would require the use of an existing fan or the construction of new fans. The Saccardo Nozzle would provide air flow in a single direction. Upgrading the existing system to include the Saccardo Nozzle would allow for additional ventilation along the length of the tunnel that is not possible with the existing fan layout.

The scope of work for this option includes the following modifications inside each tunnel and portal building:

    1. Cut openings in the roadway tunnel ceiling to construct a Saccardo Nozzle opening. The existing ceiling of the roadway would be removed to create an indentation, or niche opening, in which the Saccardo Nozzle would sit. Cutting into the existing ceiling would allow for the nozzle opening to sit flush with the existing ceiling of the tunnel.
2. Construct a dividing wall downstream from the air flow produced by the Saccardo Nozzle in the plenum. This wall would have an access door and motorized dampers for plenum ventilation.
3. Replace or refurbish the existing supply fans in the west portal fan room with new supply fans.
4. Install new motorized dampers in the fresh air and exhaust air plenum floors to ventilate the plenums.
5. Close all fresh air supply openings in the tunnel wall.
6. Close all exhaust air openings in the tunnel ceiling.
7. If the existing supply and exhaust fans at west and east portals are removed, new smaller fans would be added to ventilate the plenums.

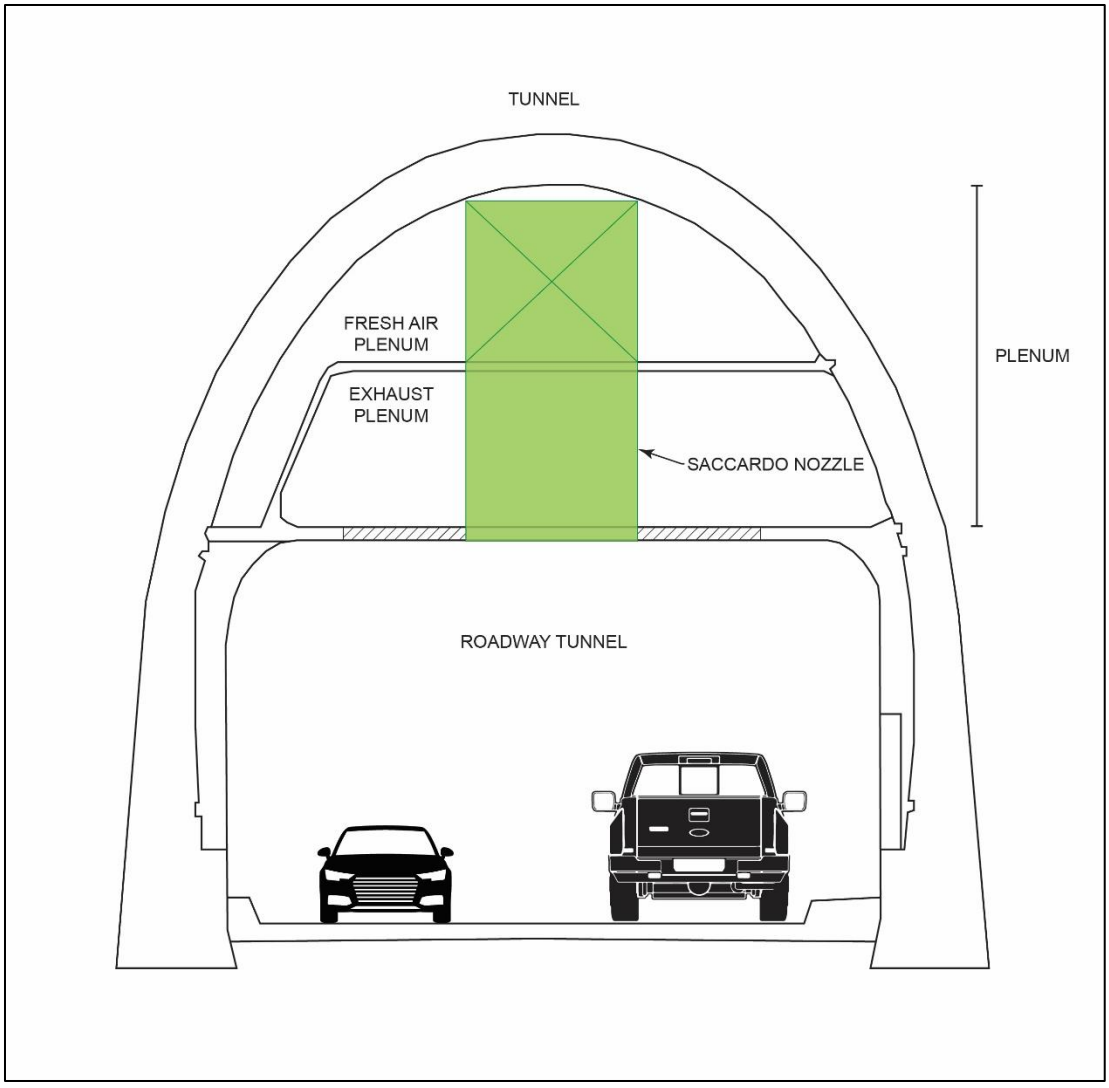

Figure 36. Cross Section of Proposed Build Alternative Option 1.

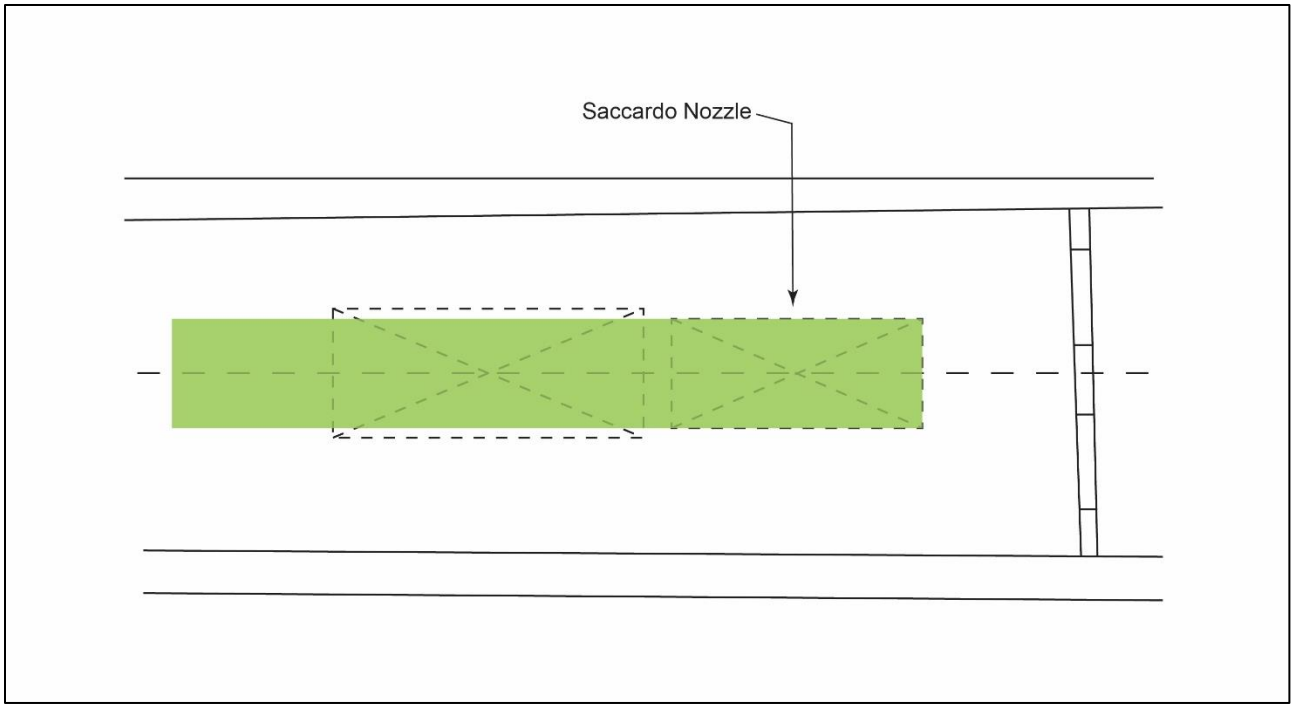

Figure 37. Plan View of Proposed Build Alternative Option 1.

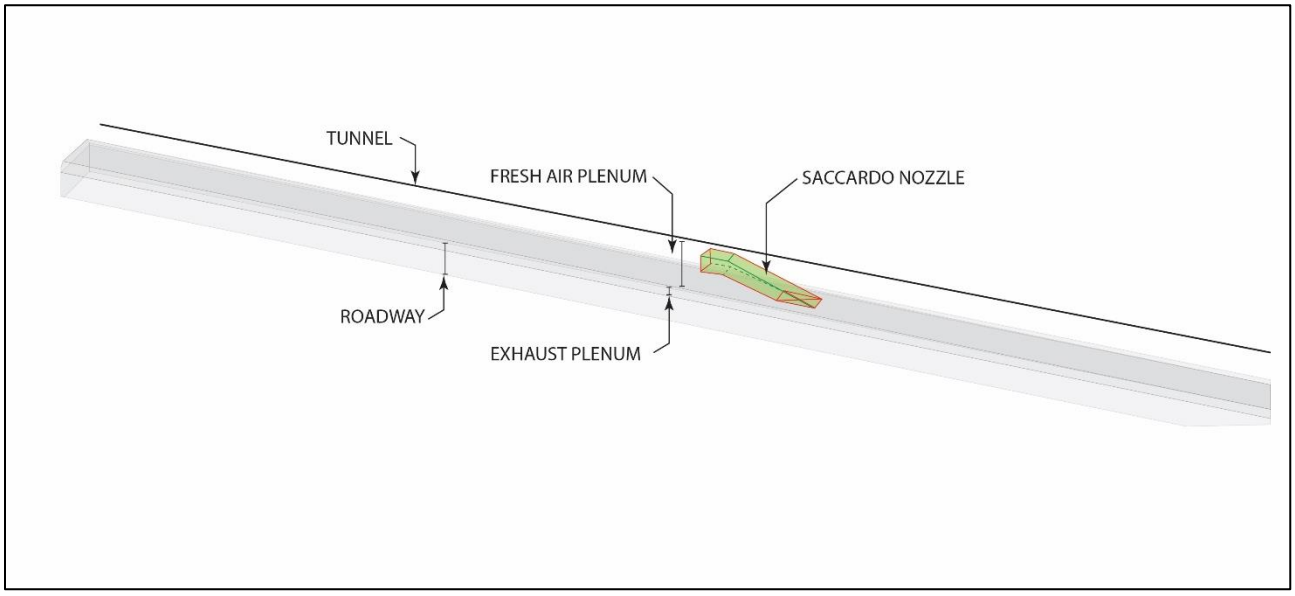

Figure 38. Oblique View of Proposed Build Alternative Option 1.

Build Alternative Option 2, Jet Fans: Bores 1 and 2

This option would install a jet fan ventilation system to improve smoke management and to facilitate the safe exit by the traveling public from the tunnel during a fire, as well as help firefighting efforts by managing the smoke from a fire (Figure 7, Figure 8, and Figure 9). This option would include approximately four rows of fans placed throughout the tunnel. There would be two fans per row, with eight fans total. Construction would be required only in the exhaust air plenum. The exact location of each fan would be determined in the next phase of this project, the Design Phase.

The jet fans are designed to provide air flow in a single direction of traffic flow but can provide reversible directional ventilation, depending on the design, to meet State Fire Marshall requirements. Reversing the direction of ventilation downhill away from the traffic flow would require additional rows of jet fans. The final number of fans would be determined during the next phase of the project, the Design Phase.

Upgrading the ventilation system to this proposed jet fan system would promote better air circulation throughout the tunnel. Spacing the fans along the length of the tunnel provides additional air flow that is not possible with the existing system.

The scope of work for this option includes the following modifications inside each tunnel and portal building:

1. Cut openings in the roadway tunnel ceiling to construct jet fan niches. The existing ceiling of the roadway would be removed to create an indentation, or niche, in which the jet fans would sit. Creating this higher ceiling in this area would allow for the jet fans to sit flush with the existing ceiling of the tunnel.
2. Seal all fresh air supply openings in the tunnel wall.
3. Seal all exhaust air openings in the tunnel ceiling.
4. Install new motorized dampers in the fresh air and exhaust air plenums floors to ventilate the plenums.
5. If the existing supply and exhaust fans at the west and east portals are removed, new smaller fans would be added to ventilate the plenums.

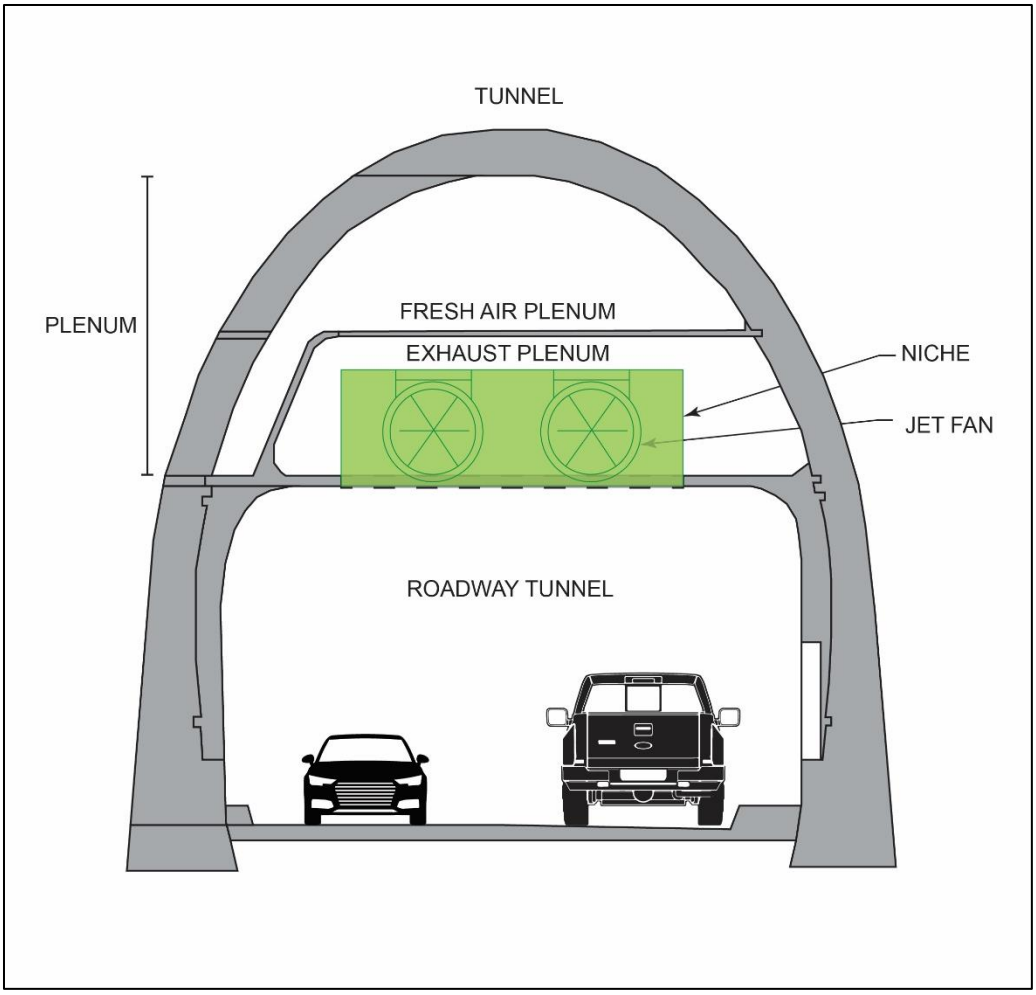

Figure 39. Cross Section of Proposed Build Alternative Option 2.

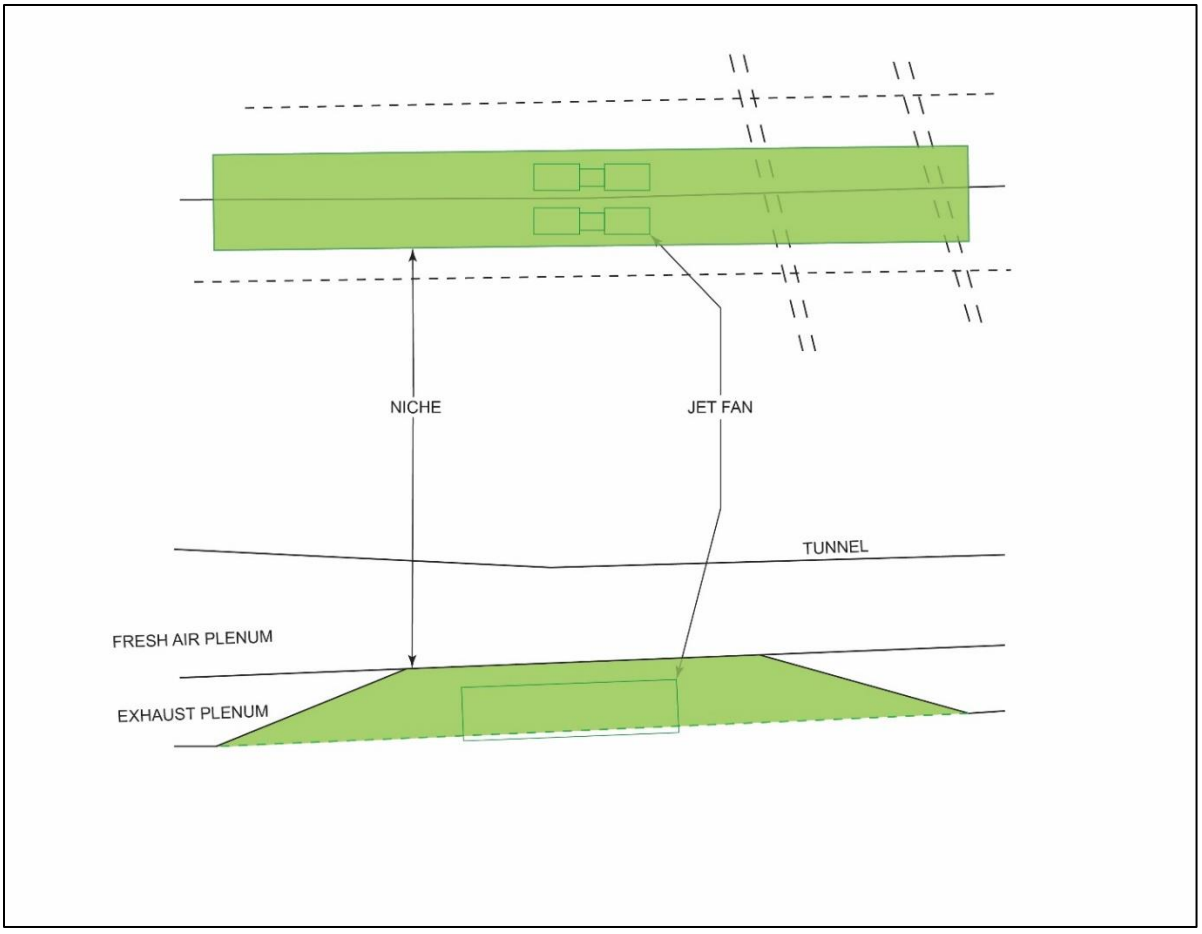

Figure 40. Plan view (top) and side view (bottom) of Proposed Build Alternative Option 2.

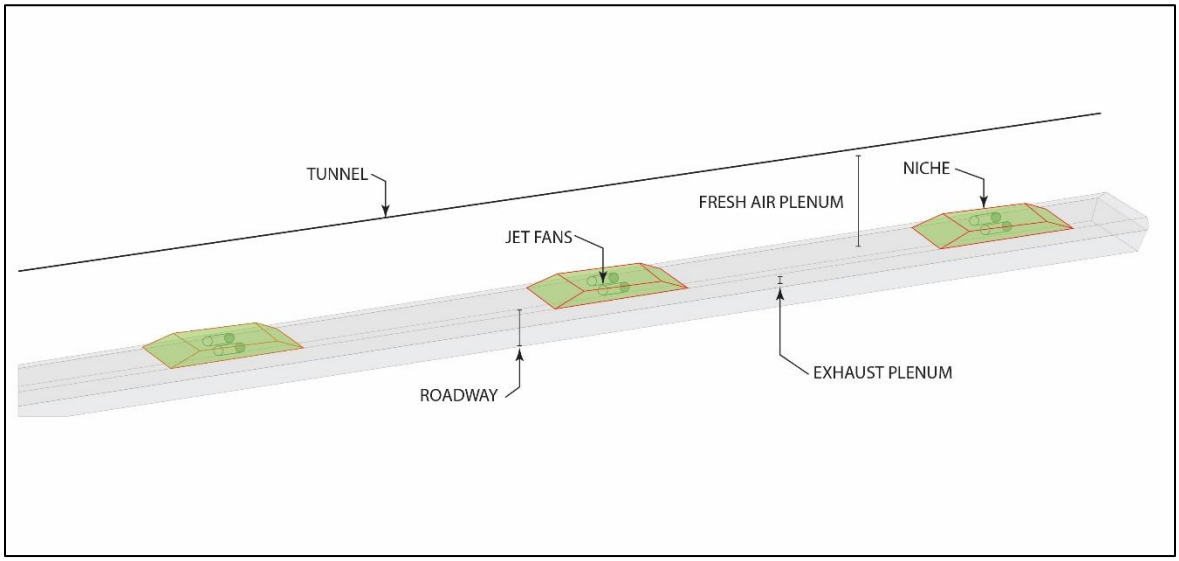

Figure 41. Oblique view of Proposed Build Alternative Option 2.

Both Build Alternative Options, Jet Fans: Bore 3

For Bore 3, the proposed project would install approximately 16 jet fans in eight rows of two throughout the length of the tunnel. This jet fan ventilation system would improve smoke management and facilitate the safe exit by the traveling public from the tunnel during a fire, as well as help firefighting efforts by managing the smoke from a fire. The exact location of each fan would be determined in the next phase of this project, the Design Phase.

The jet fans are designed to provide air flow in a single direction of traffic flow but can provide reversible directional ventilation, depending on the design, to meet State Fire Marshall requirements. Reversing the direction of ventilation downhill would require additional rows of jet fans. Upgrading the ventilation system to this proposed jet fan system would promote better air circulation throughout the tunnel. Spacing the fans along the length of the tunnel provides additional air flow that is not possible with the existing system.

This scope of work includes the following modifications inside Bore 3 and its portal building (Figure 10, Figure 11, and Figure 12):

1. Cut openings in the tunnel ceiling to construct jet fan niches. The existing ceiling of the roadway would be removed to create an indentation, or niche, in which the jet fans will sit. Creating a higher ceiling in this area would allow for the jet fans to sit flush with the existing ceiling of the tunnel.
2. Remove the center wall between the fresh and exhaust air plenums at the jet fan niche locations.
3. Seal all of the supply and exhaust air openings in the tunnel ceiling.
4. Install new motorized dampers in the fresh air and exhaust air plenum floors to ventilate the plenums.
5. If the existing supply and exhaust fans at the west and east portals are removed, new smaller fans would be added to ventilate the plenums.

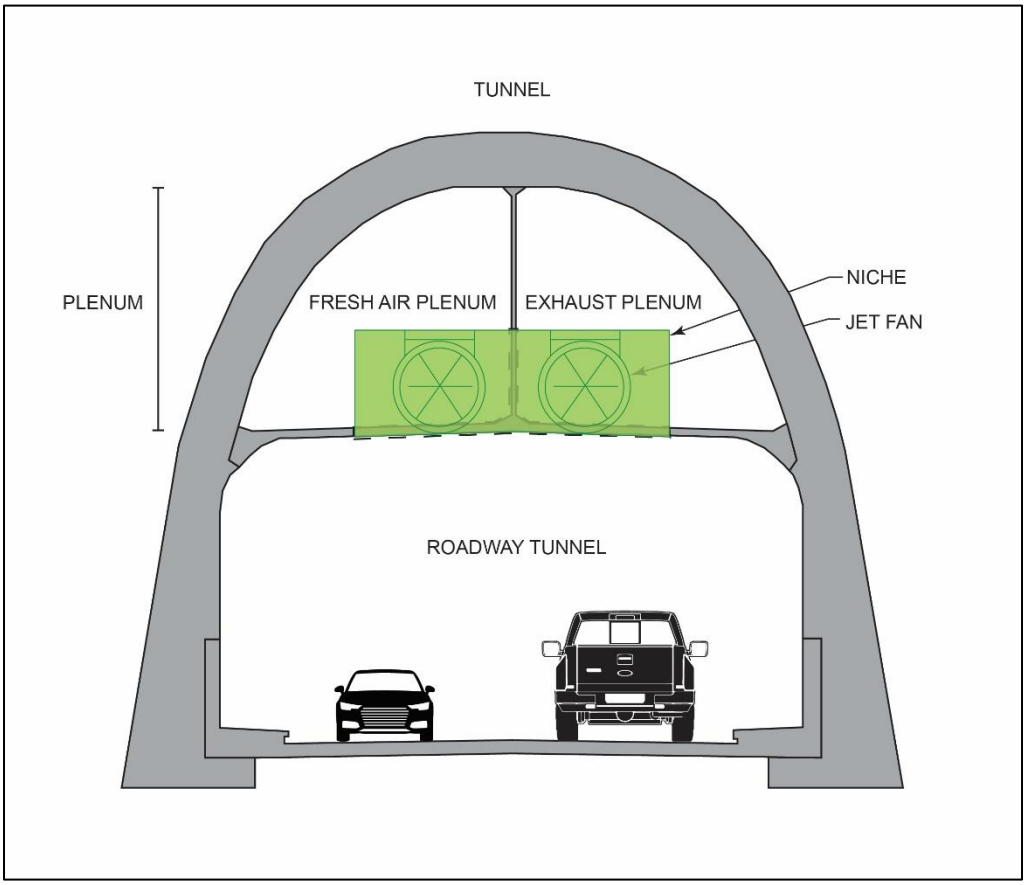

Figure 42. Cross Section of Proposed Build Alternative ventilation work for Bore 3.

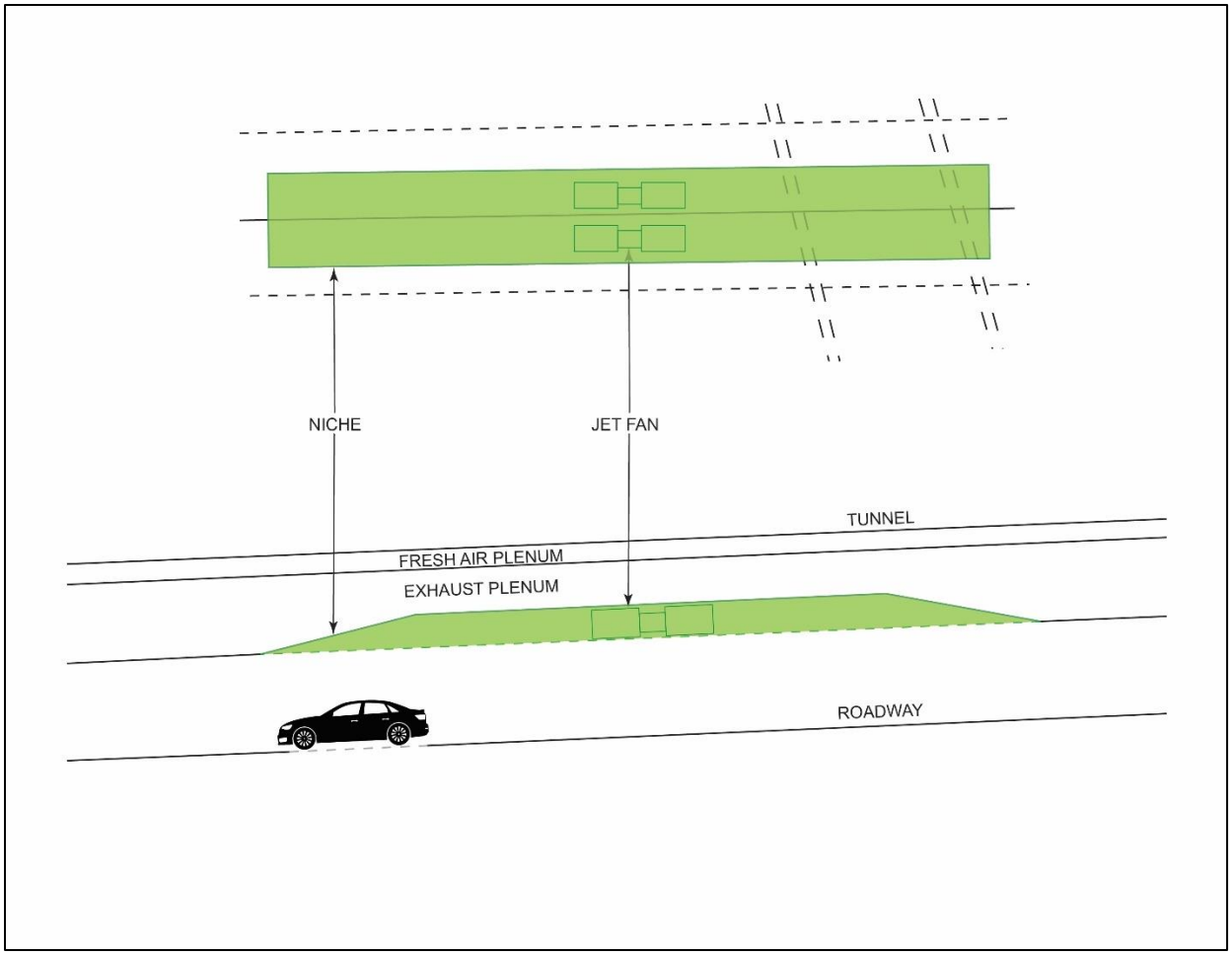

Figure 43. Plan view (top) and side view (bottom) of Proposed Build Alternative ventilation work for Bore 3.

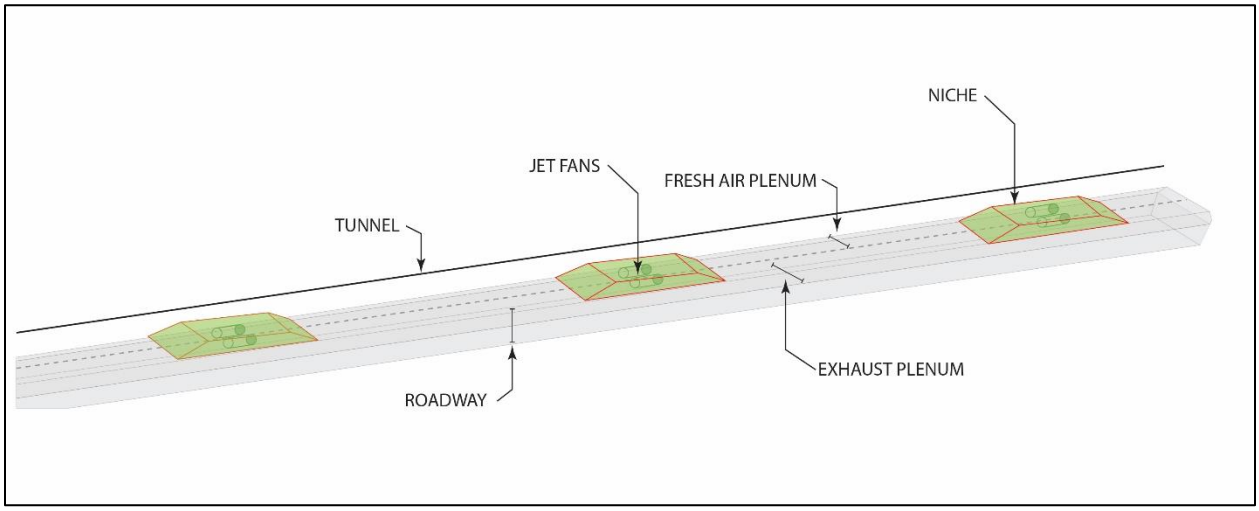

Figure 44. Oblique view of Proposed Build Alternative ventilation work for Bore 3.

Construction Schedule

Construction of the proposed project is anticipated to begin in November 2026 and would last approximately three years to November 2029, with approximately 664 working days. The estimated number of working days for the Proposed Build Alternative will be refined in the project's next phase, the Design Phase, and could vary depending on contractor resources.

Right of Way and Staging

The proposed project footprint is entirely within Caltrans right of way and primarily includes the Caldecott Tunnel and 500 feet of adjacent roadway. Additional project work will be conducted around the east and west portals of the tunnel, including at the OMC building, portal buildings, and at the on and off ramps. With the exception of the portal building and OMC building upgrades, the majority of the proposed project work will be conducted within the SR-24 mainline, which is isolated by retaining walls and fences. The existing footprint does not include transit facilities, pedestrian crossings, bicycle crossings, railroads, and waterways. Bicyclists and pedestrians are prohibited from using this freeway facility. Considering the tunnel geometry, it is infeasible to build out complete street features without modifying the tunnel structurally. Furthermore, such tunnel modification is outside of the scope of this project.

Additional right of way use is not anticipated. Railroad involvement is not anticipated. Construction staging will occur on paved areas and at the eastbound SR-24 Fish Ranch Road on and off ramp near the east end of the tunnel.

Transportation Management Plan (TMP)

Lane closures, changeable message signs (CMS), construction zone enhanced enforcement program (COZEEP), and detours will be part of the TMP. Because SR-24 is a heavily travelled corridor, it is recommended to close one bore at a time during off-peak hours to ensure safety of both drivers and construction personnel. There are two proposed detour plans for tunnel closures. The first will close the eastbound SR-24 on-ramp from Tunnel Road and redirect traffic along Broadway. The second will close the westbound SR-24 on-ramp from Fish Ranch Road and redirect traffic along Wilder Road. All closure plans will be available to the public prior to construction. Signs specifying closure times of the ramps will be posted at least 72 hours in advance. All closures will be coordinated with the local agencies of jurisdiction. Lane closures will primarily occur between 10 pm and 4 am.

Bore 1 will be closed first following the above plan for approximately nine months. Bore 2 will be closed for approximately eight months and Bore 3 will be closed for approximately one month.

Utility Relocations

Verification of utilities will be required and the need for potholing will be ascertained following the verification process. Based on the current project scope, potential protections, adjustments, or relocations include PG&E Electrical, AT&T Fiber Optic, and water facilities.

3.0 Section 4(f) Properties

3.1 Historic Property

3.1.1 Caldecott Tunnel, Bores 1 and 2

Caldecott Tunnel consists of four borings built into the Oakland-Berkeley Hills. Constructed in the 1930s utilizing New Deal funding, Caldecott Tunnel Bores 1 and 2 are two lanes each and were originally known as the Broadway Low Level Tunnel. Bore 1 measures 3,615' and Bore 2 measures 3,609'. Both bores are horseshoe shaped arched reinforced concrete tunnels that frame a 22-foot roadway with a 3.5-foot sidewalk. A portal building sits atop each end of Bores 1 and 2 to accommodate ventilation equipment. Bore 3 was constructed in 1965 and is 3,371' long with a portal building on top. The Caldecott Tunnel also includes Bore 4, which opened in 2013. Bores 1 and 2 and appurtenances, including portal buildings and approaches, retain many Art Deco-style features and elements. The portal buildings are nearly identical. They are each two level, four-bay, rectangular reinforced concrete structures with Art Deco façades. The interiors house large exhaust and fresh air fans as well as offices, storage rooms, and electrical equipment. The east portal building sits on the Fish Ranch Road Overpass and the sidewalk associated with that road sits just below the windows. The overpass and approaches feature stylized railings and light fixtures. The tunnel is a significant civil engineering feat as the state's longest highway tunnel and its construction was a major boost to efficiently transport agricultural products by vehicle and a catalyst for development in Contra Costa County. Bores 1 and 2 are eligible for listing in the National Register of Historic Places, while Bores 3 and 4 are not eligible. Bores 1 and 2 are eligible on the state level under Criterion A for Transportation and Criterion C for Engineering as the state's longest highway tunnel and for their role in improving transportation in the area, benefiting the agricultural industry and leading to increased development.

Figure 45. Caldecott Tunnel West Portal Building

4.0 Use of the Section 4(f) Property

This section discusses the concept of "use." The Federal Highway Administration regulations at 23 CFR 774.17generally addresses three forms of use:

1. Land is permanently incorporated into a transportation facility;
2. There is a temporary occupancy of land that is adverse in terms of the Section 4(f) statute's preservation purposes; and
3. There is a constructive use of the Section 4(f) property.

Utilizing the definitions of "use" set forth above, Table 1 below shows which alternative "uses" the Section 4(f) property.

Table 10. Use of Section 4(f) Resource by Alternative

	No Build	Build Alternative Option 1	Build Alternative Option 2
Caldecott Tunnel	No Use	Use	Use

The No Build alternative would not take any action and would not constitute "use" of Section 4(f) properties.

Here, the Section 4(f) property is already part of a transportation facility. Thus, the question of "use" turns on whether the 4(f) property will be adversely impacted by the undertaking/project. If the 4(f) property will be adversely impacted, there is "use" of the 4(f) property.

It appears that Build Alternative Option 1 would result in a Section 4(f) permanent use of Caldecott Tunnel Bores 1 and 2 . In order to install the Saccardo Nozzle Ventilation System, the scope of work would require adding one opening in the ceiling in both Bores 1 and 2 that is 22' long and 7.5' wide to access the fresh air plenum. The nozzle placement would require placing an approximately 6.5' high by 7' wide duct within the fresh air plenum. This action would result in the removal of 119 square feet of ceiling in each bore. It appears that this action would significantly alter the tunnel ceiling, thus, diminishing the historical integrity and character of Bores 1 and 2.

It appears that Build Alternative Option 2 would result in a Section 4(f) permanent use of Caldecott Tunnel Bores 1 and 2. In order to install the jet fans, the scope of work would require removing approximately 150' of the existing tunnel ceiling at each of the 4 jet fan row locations and installing a new sloped ceiling. This action would result in the removal of approximately 4,800 square feet of ceiling in each bore. It appears that this action would significantly alter the tunnel ceiling, thus diminishing the historical integrity and character of Bores 1 and 2.

Caltrans is currently undertaking Section 106 consultation with SHPO for the Caldecott Tunnel Bores 1, 2, and 3 Rehabilitation Project, which will include coordination regarding application of the criteria for adverse effect to Build Alternatives Option 1 and Option 2. Besides Caldecott Tunnel Bores 1 and 2, Caltrans does not anticipate the use (temporary or permanent) of any additional National Register-eligible resources.

5.0 Avoidance Alternatives Analysis

Section 4(f) requires avoidance of 4(f) properties unless there are no prudent and feasible avoidance alternatives. Section 4(f) regulations found under 23 CFR 774.17 define that an alternative is not feasible if it cannot be built as a matter of sound engineering judgement. The prudence evaluation involves applying each of the following six factors to each avoidance alternative. An alternative is not prudent if:

i. It compromises the project to a degree that is unreasonable to proceed with the project in light of its stated purpose and need.
ii. It results in unacceptable safety or operational problems.
iii. After reasonable mitigation, it still causes:
    a. Severe social, economic, or environmental impacts;
    b. Severe disruptions to established communities;
    c. Severe disproportionate impacts to minority or low-income populations; or
    d. Severe impacts to environmental resources protected by other Federal Statutes
iv. It results in additional construction, maintenance, or operational costs of an extraordinary magnitude.
v. It causes other unique problems or unusual factors.
vi. It involves multiple factors listed above that, while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

The following alternatives avoid the use of Section 4(f) properties and are analyzed below based on the standards for prudency and feasibility.

5.1 No Build

The No Build alternative would take no action to address or preserve the structural integrity of the tunnel, improve ventilation performance and fire-fighting operational response, nor extend the service life of the Caldecott Tunnel. The feasibility factor, therefore, is not relevant to the No Build Alternative.

The following addresses project components that inform the prudency factors, as listed above.

i. The No Build alternative would compromise the project to a degree that it is unreasonable to proceed with the project in light of the purpose and need because it would not address the tunnel's structural deficiencies or high-risk rating for fire-life safety. If not addressed, the current structural deficiencies, particularly concrete cracking, delamination, spalling, and efflorescence in the tunnel walls and liners, would trigger more frequent maintenance and lead to more extensive repairs in the future. Tunnel Bores 1, 2, and 3 are also approaching the end of their service life and the No Build option would not address the ability to extend this service life. In addition, the current ventilation

fans are past their maintenance service life and pose a significant firefighting and life-safety hazard if not replaced.

ii. The No Build alternative would not correct the high-risk rating for fire-life safety of the Caldecott Tunnel, which would result in unacceptable safety and operational problems. The Caldecott Tunnel Bores 1, 2, and 3 have been identified with high FRS (10.3 and 10.0) for overall fire-life safety relative to a common benchmark tunnel for ventilation capacity to address vehicle fires of current commercial vehicles. This risk analysis concluded that the Caldecott Tunnel Bores 1, 2, and 3 are of the top risk priority for the State because the current ventilation system requires upgrades, including to ventilation fans that are past their maintenance service life. Thus, not addressing these significance firefighting and life-safety hazards is an unacceptable safety and operational problem.

iii. The No Build alternative would not cause severe social, economic, or environmental impacts; severe disruptions to established communities; severe environmental justice impacts; or severe impacts to federally protected resources.

iv. The No Build alternative would not result in additional construction, maintenance, or operational costs of an extraordinary magnitude.

v. It does not cause other unique problems or unusual factors.

vi. The No Build alternative would not cumulatively result in impacts of extraordinary magnitude.

Weighing all of the circumstances, it appears the No Build alternative would not be considered as prudent in light of the factors set forth in 23 CFR 774.17 (i) and (ii), as initially analyzed above.

5.2 Rehabilitate and Ventilation Upgrade for Bore 3 Only

The Rehabilitation and Ventilation Upgrade for Bore 3 Only avoidance alternative would address the structural deficiencies and fire-life safety hazards of one bore of the Caldecott Tunnel. This alternative is feasible, as it can be built as a matter of sound engineering judgment. However, this alternative would take no action to address structural deficiencies or fire-life safety hazards of Bores 1 and 2 of the Caldecott Tunnel. Therefore, the paragraphs below discuss the six factors that inform prudency.

i. The Rehabilitate and Ventilation Upgrade for Bore 3 Only alternative would compromise the project to a degree that it is unreasonable to proceed with the project in light of the purpose and need because it would not address Bore 1 and 2's structural deficiencies or high FRS rating. If not addressed, the current structural deficiencies, particularly concrete cracking, delamination, spalling, and efflorescence in the tunnel walls and liners, would trigger more frequent maintenance and lead to more extensive repairs in the future. Tunnel Bores 1 and 2 are also approaching the end of their service life and this alternative would not address the ability to extend this service life. In addition, the current

ventilation fans are past their maintenance service life and pose a significant firefighting and life-safety hazard if not replaced.

ii. The Rehabilitate and Ventilation Upgrade for Bore 3 Only alternative would not correct the high-risk rating for fire-life safety of the entirety of the Caldecott Tunnel, which would result in unacceptable safety and operational problems. The Caldecott Tunnel Bores 1 and 2 have been identified with the second highest FRS (10.0) for overall fire-life safety relative to a common benchmark tunnel for ventilation capacity to address vehicle fires of current commercial vehicles. This risk analysis concluded that the Caldecott Tunnel Bores 1 and 2 are of the top risk priority for the State because the current ventilation system requires upgrades, including ventilation fans that are past their maintenance service life. Thus, not addressing these significance firefighting and life-safety hazards is an unacceptable safety and operational problem.

iii. The Rehabilitate and Ventilation Upgrade for Bore 3 Only alternative would not cause severe social, economic, or environmental impacts; severe disruptions to established communities; severe environmental justice impacts; or severe impacts to federally protected resources.

iv. The Rehabilitate and Ventilation Upgrade for Bore 3 Only alternative would not result in additional construction, maintenance, or operational costs of an extraordinary magnitude.

v. It does not cause other unique problems or unusual factors.

vi. The Rehabilitate and Ventilation Upgrade for Bore 3 Only alternative would not cumulatively result in impacts of extraordinary magnitude.

Weighing all of the circumstances, it appears the Rehabilitate and Ventilation Upgrade for Bore 3 Only alternative would not be considered as prudent in light of the factors in 23 CFR 774.17 (i) and (ii), as initially analyzed above.

5.3 Rehabilitate Bores 1, 2, and 3 without Ventilation Upgrades

The Rehabilitate Bores 1, 2, and 3 without Ventilation Upgrades avoidance alternative would address only the structural deficiencies of the Caldecott Tunnel. This alternative is feasible, as it can be built as a matter of sound engineering judgment. However, this alternative would take no action to address the fire-life safety hazards. Therefore, the paragraphs below discuss the six factors that inform prudency.

i. The Rehabilitate Bores 1, 2, and 3 without Ventilation Upgrades alternative would compromise the project to a degree that it is unreasonable to proceed with the project in light of the purpose and need because it would not address the tunnel's high-risk rating for fire-life safety. The current ventilation systems require updates, and the fans are past their maintenance service life. Not addressing the ventilation upgrades would pose a significant firefighting and life-safety hazard for the continued operation of Bores 1, 2, and 3 and would not meet the purpose and need.

ii. The Rehabilitate Bores 1, 2, and 3 without Ventilation Upgrades alternative would not correct the high-risk rating for fire-life safety of the Caldecott Tunnel,

which would result in unacceptable safety and operational problems. The Caldecott Tunnel Bores 1, 2, and 3 have been identified with high FRS (10.3 and 10.0) for overall fire-life safety relative to a common benchmark tunnel for ventilation capacity to address vehicle fires of current commercial vehicles. This risk analysis concluded that the Caldecott Tunnel Bores 1, 2, and 3 are of the top risk priority for the State because the current ventilation system requires upgrades, including to ventilation fans that are past their maintenance service life. Thus, not addressing these significance firefighting and life-safety hazards is an unacceptable safety and operational problem.

iii. The Rehabilitate Bores 1, 2, and 3 without Ventilation Upgrades alternative would not cause severe social, economic, or environmental impacts; severe disruptions to established communities; severe environmental justice impacts; or severe impacts to federally protected resources.

iv. The Rehabilitate Bores 1, 2, and 3 without Ventilation Upgrades alternative would not result in construction, maintenance, or operational costs of extraordinary magnitude.

v. It does not cause other unique problems or unusual factors.

vi. The Rehabilitate Bores 1, 2, and 3 without Ventilation Upgrades alternative would not cumulatively result in impacts of extraordinary magnitude.

Weighing all of the circumstances, it appears the Rehabilitate Bores 1, 2, and 3 without Ventilation Upgrades avoidance alternative would not be considered prudent in light of the factors in 23 CFR 774.17 (i) and (ii), as initially analyzed above.

5.4 Summary of Avoidance Alternatives Analysis

Section 5 analyzes whether the avoidance alternatives would meet the prudent and feasible standards as defined by 23 CFR 774.17. At this time, it appears the No Build alternative, Rehabilitation and Ventilation Upgrade for Bore 3 Only alternative, and Rehabilitate Bores 1, 2, and 3 without Ventilation Upgrades alternative would not be prudent.

None of these avoidance alternatives would meet the project's purpose and need. The No Build alternative does not take any action and would not rehabilitate Bores 1, 2, or 3 nor address the high FRS for Bores 1, 2, and 3, which does not meet the purpose and need. The Rehabilitation and Ventilation Upgrade for Bore 3 Only alternative would take no action at Bores 1 and 2 and would not address structural deficiencies or the high FRS rating, which does not meet the purpose and need. The Rehabilitate Bores 1, 2, and 3 without Ventilation Upgrades alternative would take no action to address the high FRS rating in Bores 1, 2, and 3 and therefore does not meet the purpose and need.

All three alternatives would result in unacceptable safety and operational problems. None of the avoidance alternatives would address the high FRS rating for Bores 1 and 2 and would thus leave an unacceptable safety and operational problem in place.

Therefore, it appears that none of the avoidance alternatives for this project would meet the prudent standard as defined by 23 CRF 774.17.

6.0 Measures to Minimize Harm

Where there are no feasible and prudent alternatives that avoid the use of 4(f) properties, the project approval process requires that the action include all possible planning to minimize harm to Section 4(f) properties. All possible planning means that all reasonable measures identified in the Section 4(f) evaluation to minimize harm or mitigate for adverse impacts and effects must be included in the project. Here, minimization and mitigation measures will be determined through consultation with the official with jurisdiction, the State Historic Preservation Officer (SHPO).

Caltrans seeks to minimize harm to Caldecott Tunnel through the use of in-kind replacement materials for all repair scopes of work, including concrete repair, upper and lower plenum slab, tunnel slab, tunnel pavement, and roof replacement for Portal buildings. These actions avoid the introduction of new materials and minimizes project impacts to the Section 4(f) resource.

In addition, Caltrans will minimize harm to Caldecott Tunnel Bores 1 and 2 through Mitigation Measure CUL-1, as identified in the Draft Environmental Document. This measure states that: Prior to construction, Caltrans will prepare a HAER (Historic American Engineering Record) to further document the historic engineering qualities of the two bores that ensure eligibility for the National Register. This documentation will make information about the two bores more accessible to the public and stakeholders. In consultation with Section 106 stakeholders and the SHPO, Caltrans will also develop mitigation measures specific to the Caldecott Tunnel and its significance. These mitigation measures will be captured in the Final Section 4(f) Evaluation once the Memorandum of Agreement has been negotiated between Caltrans, the stakeholders, and the SHPO. Caltrans anticipates that Caldecott Tunnel Bores 1 and 2 would remain eligible for listing on the National Register.

Lastly, additional measures to minimize harm may be pursued following the public comment period and documented in the final Section 4(f) Evaluation.

7.0 Least Overall Harm Analysis

Least harm alternative analysis is required when there is no feasible and prudent avoidance alternative. For the proposed project, both Build Alternative Option 1 and Build Alternative Option 2 would result in the use of Caldecott Tunnel Bores 1 and 2; therefore, the alternative that causes the least overall harm must be analyzed.

Section 4(f) regulation 23 CFR 774.3(c)(1) requires the evaluation and balancing of seven factors to determine the alternative that causes the least overall harm. These factors are:

i. The ability to mitigate adverse effects to each Section 4(f) property (including any measures that result in benefits to the property).
ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection.
iii. The relative significance of each Section 4(f) property.
iv. The views of the official with jurisdiction over each Section 4(f) property.
v. The degree to which each alternative meets the purpose and need for the project.
vi. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f).
vii. Substantial differences in costs among the alternatives.

The first four factors relate to the net harm that each alternative would cause to Section 4(f) property. The last three factors allow taking into account any substantial problem with any alternative on issues beyond Section 4(f).

This draft Section 4(f) Evaluation includes preliminary analysis and identification of the Build alternative option that will cause the overall least harm. After public circulation of the environmental document, and coordination and comment period with the Department of Interior and the SHPO, Caltrans will consider comments received and finalize the comparison of the seven factors listing in 23 CFR 774.3(c). The alternative that has the overall least harm will be determined in the final Section 4(f) Evaluation.

8.0 Consultation and Coordination

Caldecott Tunnel Bores 1 and 2 are eligible for listing in the National Register of Historic Places, and the State Historic Preservation Officer (SHPO) is the official with jurisdiction over the two bores. As part of the Section 106 process, public participation efforts and outreach were conducted with local historical societies and Native American tribes.

Caltrans contacted the Native American Heritage Commission (NAHC) on January 19, 2024, requesting a search of their Sacred Lands File (SLF) to determine if there are historically significant or sacred sites within or near the Project area. The NAHC responded that the project area was negative for cultural sites and provided a list of

individuals from eleven indigenous groups for additional consultation. Letters initiating Section 106 of the National Historic Preservation Act (NHPA), and AB 52 were sent to each of the contacts on July 11, 2024. The Tribes contacted included: Amah Mutsun Tribal Band of Mission San Juan Bautista, Amah Mutsun Tribal Band, Confederated Villages of Lisjan Nation, Costanoan Rumsen Carmel Tribe, Guidiville Rancheria of California, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the SF Bay Area, North Valley Yokuts Tribe, The Ohlone Indian Tribe, Wilton Rancheria, and the Wuksachi Indian Tribe / Eshom Valley Band.

The Muwekma Ohlone Indian Tribe of the San Francisco Bay Area responded on July 15, 2024, with information about the tribe and the area. They concluded that formal tribal consultation is not necessarily relative to this specific project and request to be notified in the future should any ancestral remains or signification subsurface features be uncovered. Caltrans will notify the Tribe of any changes or finds. Confederated Villages of Lisjan Nation responded on July 15, 2024, and would like to be notified of any changes to the project. Caltrans will notify the Tribe of any changes or finds. The Costanoan Rumsen Carmel Tribe responded on July 15 and requested consultation. A field meeting is planned with the Tribe. Consultation is ongoing and the Tribe has requested to be involved until the conclusion of the project.

On February 1, 2024, Caltrans Office of Cultural Resource Studies sent Section 106 consultation letters via email to Section 106 stakeholders with an invitation to attend a Section 106 stakeholder meeting scheduled for February 27, 2024.

Caltrans contacted Daniel Levy, President, Oakland Heritage Alliance (OHA); Elizabeth McElligott, Assistant Deputy Director, County of Alameda Parks, Recreation and Historical Commission; Tim Mollette-Parks, Acting Chair, City of Oakland Landmarks Preservation Advisory Board; Dominique Vogelpohl, Project Planner, Contra Costa County Historical Landmarks Advisory Committee; Donna Baarsch, Planning Technician, City of Orinda Historic Landmarks Committee; Ralph Anderson, President, Alameda County Historical Society; Cindy Heitzman, Executive Director, California Preservation Foundation (CPF); John Burgh, President, Contra Costa County Historical Society; Alison Burns, President, Orinda Historical Society; and Mary McCosker, President, Lafayette Historical Society. On February 12, 2024, Caltrans contacted Betty Marvin, Planner III, Historic Preservation, Oakland Cultural Heritage Survey. Follow-up emails and phone calls were made on February 14 and February 15 to organizations that had not replied.

Ms. McElligott replied on February 14 stating that the county reviewed the information Caltrans provided, and had no comments regarding the projects; Betty Marvin of the Oakland Cultural Heritage Survey replied on February 12 on behalf of the Advisory Board stating she did not expect to attend the meeting; Jon Haeber stated on February 15 that CPF might take part in the stakeholder meeting online, but ultimately did not attend; Contra Costa County Historical Society Executive Director Leigh Ann Davis expressed interest in the project but did not attend; Alison Burns stated on February 15 that the Orinda Historical Society board did not have any concerns about the project; Ms.

McCosker replied on February 14 and said that she appreciated being invited to the meeting but did not feel the need to attend.

No replies were received from the Contra Costa County Historical Landmarks Advisory Committee or the Alameda County Historical Society.

The stakeholder meeting took place on February 27, 2024, and was attended by OHA President Daniel Levy and board member Naomi Schiff, and Donna Baarsch from the City of Orinda, as well as Caltrans representatives from OCRS. The meeting included discussion of two Caltrans Tunnels and Tubes projects, EA 0J540 (Caldecott Bores 1, 2 and 3) and EA 2Y780 (Posey Tube and Webster Tube Ventilation Upgrade Project) because of the similarity of the projects. The OHA's primary concern was maintaining the integrity of the portal buildings. They had no concerns regarding the ventilation upgrades. The City of Orinda's primary interest was traffic and road closures associated with construction. Both organizations requested updates as the project progresses.

Prior to making the Section 4(f) approval under 23 CFR 774.3(3), the Section 4(f) Evaluation will be provided for coordination and comment to the SHPO (official with jurisdiction) and the Department of Interior for a 60-day period for receipt of comments. Coordination must occur and be documented before the Section 4(f) Evaluation can be approved.

9.0 References

California Department of Parks and Recreation, Caldecott Tunnel Bore 3 Primary Record, P-01-010128. Caltrans, November 2014.

Caltrans, Caldecott Tunnel Historic Resource Evaluation Report, October 1995. Caltrans District 4, Oakland, California.

Caltrans, Caldecott Tunnel Inspection Report, Division of Maintenance, Structure Maintenance and Investigations, May 2020.

Palmer, Charles, Office of Cultural Resources Studies, Caltrans District 4, Section 106 Summary, 04-0J540 Memorandum, to Wahida Rashid, Office of Environmental Analysis, Caltrans, District 4.

Risk Assessment of Caltrans Road Tunnels, Statewide Risk Assessment Report, 2021, Caltrans.

Water Quality Assessment Report, O4-0J540, April 2024. Caltrans District 4, Oakland, California.

Wilson, Chris R., 0J540 RFS Hazardous Waste, email communication to C. Yancey, December 7, 2024.

Appendix B Project Features

Resource Area	Project Feature Number	Description
Aesthetics and Visual Resources	PF-AES-1	**Vegetation Preservation**: Project construction activities should avoid and protect existing vegetation where feasible outside the bores from the contractor's operations, equipment, and materials storage. High visibility temporary fencing (THVF) will be placed around vegetation to be protected before roadway work begins. Truck watering for vegetation should be provided when automated irrigation is interrupted by construction.
Aesthetics and Visual Resources	PF-AES-2	**Construction Staging**: Construction staging areas should be located in paved areas if possible.
Aesthetics and Visual Resources	PF-AES-3	**Erosion Control**: After construction, all areas cleared within the Project limits for uses such as contractor access, staging, and trenching operations would be treated with appropriate erosion control measures (such as mulch, hydroseed, and fiber rolls) where required.
Aesthetics and Visual Resources	PF-AES-4	**Construction Lighting**: Construction lighting would be limited to within the area of work and avoid light trespass through the use of directional lighting and shielding as needed.
Aesthetics and Visual Resources	PF-AES-5	**Construction Waste**: Unsightly materials, equipment storage and staging should be placed so that they are not visible within the foreground of the highway corridor to the maximum extent feasible. Where such siting is unavoidable, material and equipment shall be visually screened to minimize visibility from the roadway and sensitive receptors outside the project area.
Cultural Resources	PF-CUL-1	**Discovery of Human Remains**: If remains are discovered during excavation, all work within 60 feet of the discovery would halt and Caltrans' Cultural Resource Studies office would be called. Caltrans' Cultural Resources Studies Office Staff would assess the remains and, if determined human, would contact the County Coroner as per Public Resources Code (PRC) Sections 5097.98, 5097.99, and 7050.5 of the California Health and Safety Code. If the Coroner determines the remains to be Native American, the Coroner would contact the Native American Heritage Commission who would then assign and notify a Most Likely Descendant. Caltrans would consult with the Most Likely Descendant on respectful treatment and reburial of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.
Cultural Resources	PF-CUL-2	**Discovery of Cultural Materials:** If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a Caltrans qualified archaeologist is contacted to assess the nature and significant of the find.

Resource Area	Project Feature Number	Description
Greenhouse Gas Emissions (GHG)	PF-GHG-1	**Emissions Reductions:** Implementation of Caltrans Standard Specifications, such as complying with air-pollution-control rules, regulations, ordinances, and statutes that apply to work performed under the Contract and the use of construction best management practices, would result in reducing GHG emissions from construction activities, including but not limited to: 1. Regular vehicle and equipment maintenance. 2. Limit idling of vehicles and equipment onsite. 3. If practicable, recycle nonhazardous waste and excess material. If recycling is not practicable, dispose of material. 4. Use solar-powered signal boards, if feasible.
Paleontology	PF-PAL-1	**Discovery of Paleontological Resources:** If unanticipated paleontological resources are discovered at the job site, do not disturb the resources and immediately: 1) stop all work within a 60-foot radius of the discovery, 2) secure the area, and 3) notify the engineer. Caltrans investigates the discovery and modifies the dimensions of the secured area if needed. Do not move paleontological resources or take them from the job site. Do not resume work within the radius of discovery until authorized.
Tribal Cultural Resources	PF-TCR-1	**Tribal Cultural Resources:** In the event that archaeological resources (sites, features, or artifacts) or Tribal Cultural Resources (as defined by local consulting Tribes and CEQA) are exposed during construction activities, all construction work occurring within 60 feet of the find shall immediately stop until a qualified archaeologist, that meets the Secretary of the Interior Professional Qualifications for Archaeology, can evaluate the significance of the find, in consultation with local Tribes to determine whether or not additional study is warranted.
Transportation and Traffic	PF-TRA-1	**Traffic Management Plan:** A Traffic Management Plan (TMP) would be developed by Caltrans during the Design Phase. The TMP would include elements such as detours, expected lane closures, haul routes, one-way traffic controls to minimize speeds and congestion, flag workers, and phasing to reduce impacts to local residents as feasible and maintain access for police, fire, and medical services in the area. Prior to construction, Caltrans would notify adjacent property owners, businesses, and agencies regarding construction activities, access changes, and lane closures and detours. In addition, Caltrans would coordinate with the local Fire Department and emergency response services prior to construction to minimize potential disruption to emergency services.

Resource Area	Project Feature Number	Description
Utilities and Service Systems	PR-UTIL-1	**Trash Management:** All food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed at least once daily from the project limits.
Utilities and Service Systems	PF-UTIL-2	**Notify Utility Owners of Construction Schedule to Protect Utilities:** Caltrans would notify all affected utility companies, such as PG&E, of construction schedules for proposed project work so that they can relocate the gas, telephone, cable, or overhead distribution lines prior to construction and minimize disruption of any utility service. As plans are further developed during the design phase, should any utility impacts be identified, additional Avoidance and Minimization measures may be applied.
Water Quality	PF-WQ-1	**Water Quality Best Management Practices:** The calculated disturbed soil area (DSA) is less than one acre, thus preparation of a water pollution control plan (WPCP) is required that includes Best Management Practices (BMPs) to reduce the pollutants in stormwater discharges during construction and permanently to the Maximum Extent Practicable (MEP). The construction activities need to comply with the Standard Specifications 13-2 Water Pollution Control Program (WPCP) during construction. BMPs recommended for this project are as follows: • If significant amount of water intrusion is encountered, non-storm water treatment system may be required, pending on the contamination of the water. • The project will involve movement of dirt, demolished materials by construction equipment, adjacent to public roadways. Street sweeping should be utilized to remove tracked sediment. • Sediment control/perimeter control measures such as temporary fiber rolls should be utilized where necessary as a sediment control measure to intercept sheet and concentrated flow runoff. • Temporary drainage inlet protection should be utilized to prevent sediment from entering the current or proposed storm drains. • Concrete wastes shall be managed using concrete washout facilities. • Various waste management, materials handling, and other housekeeping items shall be used throughout the duration of the project. If stockpiles of various kinds are anticipated, it shall be maintained with the appropriate BMPs. • The materials generated may require standard provisions for handling and testing to verify appropriate reuse or disposal options.

Appendix C Avoidance, Minimization and/or Mitigation Summary

Resource Area	Project Feature Number	Description
Aesthetics and Visual Resources	**AMM-AES-1**	**Tunnel Design:** The design, color and aesthetic treatment for the new rehab interior tunnel walls shall be similar in design to the existing adjacent Bore 4 inside tunnels and visually compatible and consistent with the existing structures along the corridor.
Aesthetics and Visual Resources	**AMM-AES-2**	**Replacement Planting:** Replacement highway planting should be installed where feasible in areas where existing trees and shrubs are removed to maintain Classified Landscaped Free-ways and Designated State Scenic Highway with three years Plant Establishment Period (PEP), to ensure a successful planting to support the aesthetics of the corridor.
Biological Resources	**AMM-BIO-1**	**Preconstruction Wildlife Surveys**: In areas adjacent to oak woodland and immediately prior to any initial or ongoing ground disturbance, including staging of equipment or materials, preconstruction surveys would be conducted by a qualified biologist. These surveys would consist of walking surveys of the accessible portions of the BSA and PCA to determine presence of wildlife species, nesting birds and any special-status species. In the highly unlikely event that a special-status species is observed within the PCA, all construction activities within the appropriate buffer would cease and the agencies would be notified. Construction activities would not resume without approval from a qualified biologist. Under no circumstances would the capture, handling or relocation of special-status species occur unless expressly authorized by the agencies.
Biological Resources	**AMM-BIO-2**	**Preconstruction Surveys for Nesting Birds:** Clearing and grubbing of vegetation should occur outside of the nesting bird season (February 1 to September 30), to the degree possible. If tree and vegetation removal or clearing and grubbing must occur prior to or during nesting bird season, preconstruction surveys for nesting birds will be conducted by a qualified biologist no more than 72 hours prior to the start of construction.
Biological Resources	**AMM-BIO-3**	**Non-Disturbance Buffer:** If work is to occur near active raptor nests or active passerine nests, an appropriately determined non-disturbance buffer would be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance. Buffer size would be determined in cooperation with a qualified biologist. Non-disturbance buffers may also need to be established for other special-status species and would be determined in cooperation with a qualified biologist.
Biological Resources	**AMM-BIO-4**	**Covering of Trenches and Excavated Holes:** To prevent inadvertent entrapment of wildlife during construction excavated holes or electrical trenches more than one-foot-deep with walls steeper than 30 degrees would be covered by plywood or

		similar materials at the close of each working day. Alternatively, an additional four-foot-high vertical barrier, independent of exclusionary fences, would be used to further prevent the inadvertent entrapment of wildlife. If it is not feasible to cover an excavation or provide an additional four-foot-high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earth fill or wooden planks would be installed. Before such holes or trenches are filled, they would be thoroughly inspected for trapped animals. If at any time a trapped special-status species is discovered, the department biologist would immediately place escape ramps or other appropriate structures to allow the animal to escape or the agencies would be contacted by telephone for guidance
Biological Resources	**AMM-BIO-5**	**Work on Previously Disturbed Areas and Vehicle Use:** To the extent practicable, work will remain on paved surfaces or on previously disturbed areas. Project employees would be required to comply with guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards. Vehicles would remain on paved roads to the maximum extent practicable, and speeds would be limited to 10 miles per hour when off the pavement.
Biological Resources	**AMM-BIO-6**	**Preconstruction Surveys for Bats:** Prior to construction at work sites where structures would be removed or otherwise disturbed prior to the initiation of construction, preconstruction surveys for bats will be conducted by a qualified biologist no more than 72 hours prior to the start of construction. If bats or suitable bat roosting habitat is detected, CDFW shall be notified immediately for consultation and possible on-site monitoring if bats are day roosting in trees or buildings within the BSA, construction activity cannot begin until 30 minutes after sunset as established by U.S. Naval Observatory Astronomical Applications Department.
Biological Resources	**AMM-BIO-7**	**Protected Species in Work Zone:** The resident engineer would immediately contact the qualified Department-approved biologist(s) in the event that a special-status species gains access to the PCA. If a special-status species is discovered within the work area, a non-disturbance buffer will be established at a distance sufficient to minimize disturbance based on the species or nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance. The resident engineer would suspend construction activities within the non-disturbance buffer of the animal that could reasonably result in a take of the special-status species until the animal leaves the site voluntarily.
Biological Resources	**AMM-BIO-8**	**Trash:** All food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed weekly from the work area.
Biological Resources	**AMM-BIO-9**	**Firearms:** No firearms would be allowed in the BSA except for those carried by authorized security personnel, or local, state, or federal law enforcement officials.
Biological Resources	**AMM-BIO-10**	**Pets:** To prevent harassment, injury, or mortality of sensitive species, no pets would be permitted in the BSA.

Biological Resources	**AMM-BIO-11**	**Caltrans Standard Best Management Practices (BMPs):** The potential for adverse effects to water quality will be avoided by implementing temporary and permanent BMPs outlined in Section 7-1.01G of the Caltrans Standard Specifications. Caltrans erosion control BMPs will be used to minimize any wind or water-related erosion. The State Water Resources Control Board has issued a National Pollution Discharge Elimination System Statewide Storm Water Permit to Caltrans to regulate storm water and non-storm water discharges from Caltrans facilities. A Storm Water Pollution Prevention Program (SWPPP) or Water Pollution Control Program (WPCP) will be developed for the Project, as required. The SWPPP or WPCP complies with the Caltrans Storm Water Management Plan (SWMP). The SWMP includes guidance for Project design staff to include provisions in construction contracts to include measures to protect sensitive areas and to prevent and minimize storm water and non-storm water discharges. The SWPPP or WPCP will reference the Caltrans Construction Site BMPs Manual. This manual is comprehensive and includes many other protective measures and guidance to prevent and minimize pollutant discharges and can be found at the following website: http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm Protective measures will be included in the contract, including, at a minimum: • No discharge of pollutants from vehicle and equipment cleaning are allowed into storm drains or water courses. • Vehicle and equipment fueling and maintenance operations must be at least 50 feet away from water courses. • Concrete wastes are collected in washouts and water from curing operations is collected and disposed of and not allowed into water courses. • Dust control would be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require. • Coir rolls would be installed along or at the base of slopes during construction to capture sediment and temporary organic hydro-mulching would be applied to all unfinished disturbed and graded areas. • Work areas where temporary disturbance has removed the pre-existing vegetation would be restored and re-seeded with a native seed mix. • Graded areas would be protected from erosion using a combination of silt fences, fiber rolls along toe of slopes or along edges of designated staging areas, and erosion-control netting (such as jute or coir) as appropriate.

		A Revegetation Plan would be prepared for restoration of temporary staging areas.
Biological Resources	**AMM-BIO-12**	**Monofilament Netting:** To prevent wildlife from being entangled, trapped or injured, erosion control materials with plastic mono-filament netting would not be used within the BSA.
Biological Resources	**AMM-BIO-13**	**Asphalt Waste:** All grindings and asphaltic-concrete waste would be stored within previously disturbed areas absent of habitat and at a minimum of 150 feet from any aquatic habitat, culvert, or drainage feature.
Biological Resources	**AMM-BIO-14**	**Replanting with Native Species:** All staging areas that are temporarily affected during construction would be revegetated with native plant species appropriate to the habitat that was disturbed in order to restore habitat values. Invasive, exotic plants would be controlled within the PCA to the maximum extent practicable, pursuant to Executive Order 13112 (Invasive Species).
Noise	**AMM-NOI-1**	**Daytime Construction:** Any operation exceeding 86 dBA shall not be allowed at nighttime from 9:00 p.m. to 6 a.m.
Noise	**AMM-NOI-2**	**Public Outreach:** Public outreach shall be required throughout the project duration of construction to update nearby residents, businesses, and other project stakeholders on upcoming construction activities and any changes to the project construction timeline.
Noise	**AMM-NOI-3**	**Scheduling:** Schedule noisy operations within the same time frame. The total noise level will not be significantly greater than the level produced if operations are performed separately.
Noise	**AMM-NOI-4**	**Prevent Idling:** Prevent idling of equipment within 100 feet of sensitive receptors.
Noise	**AMM-NOI-5**	**Staging and Storage Areas:** Locate all stationary noise-generating construction equipment as far as practical from noise-sensitive receptors or provide baffled housing or sound aprons to equipment when sensitive receptors adjoin or are near a construction project area.
Noise	**AMM-NOI-6**	**Alternative Methods or Equipment:** Use quieter alternative methods or equipment, if feasible. (e.g. “quiet” air compressors and other “quiet” equipment where such technology exists). Equip all internal combustion engine driven equipment with manufacturer recommended intake and exhaust mufflers that are in good condition and appropriate for the equipment.
Noise	**AMM-NOI-7**	**Equipment Delivery:** No construction equipment will be delivered and dropped off before 6:00 a.m.
Noise	**AMM-NOI-8**	**Internal Combustion Engine Maintenance:** Maintain all internal combustion engine properly to minimize noise generation.
Tribal Cultural Resources	**AMM-TCR-1**	**Tribal Cultural Resources:** Prior to the initiation of construction for the project, the Project contractor, staff, and construction crews shall be made aware of the potential to encounter cultural resources and Tribal Cultural Resources (including the traditional importance of resources such as cultural landscapes, significant waterways, and ethnobotanical plants) through a presentation provided by an archaeologist and a representative from local consulting Tribes.

Tribal Cultural Resources	**AMM-TCR-2**	Tribal Cultural Resources: Native American monitoring will occur during construction, as determined through consultation among Caltrans and interested Native American Tribes.
Cultural Resources	**MM-CUL-1**	**Historic Resource Preservation:** Prior to construction, Caltrans will prepare a HAER (Historic American Engineering Record). In consultation with Section 106 stakeholders and the State Historic Preservation Officer (SHPO), Caltrans will develop strategies specific to the Caldecott Tunnel and its significance. A Memorandum of Agreement will be developed by Caltrans, in consultation with the stakeholders and the SHPO. Caldecott Tunnel Bores 1 and 2 would remain eligible for listing on the NRHP.

Appendix D List of Acronyms and Abbreviations

This list contains the most common acronyms and abbreviations found on the SER and may also be adapted for use in environmental documents.

A

AB: Assembly Bill

ABAG: Association of Bay Area Governments

ACHP: Advisory Council on Historic Preservation

ADA: Americans with Disabilities Act

ADL: aerially deposited lead

ADT: average daily traffic

AE: Adverse Effect

AHERA: Asbestos Hazard Emergency Response Act

AIRFA: American Indian Religious Freedom Act

AMM: Avoidance, Minimization, and/or Mitigation measure

APCD: Air Pollution Control District

APE: Area of Potential Effects

AQMD: Air Quality Management District

ARB: Air Resources Board

ARPA: Archaeological Resources Protection Act of 1979

ASR: Archaeological Survey Report

B

BMP: Best Management Practice

C

CAA: Clean Air Act

Cal/EPA: California Environmental Protection Agency

Cal/OSHA: California Division of Occupational Safety and Health Administration

CCAA: California Clean Air Act

CDFW: California Department of Fish and Wildlife

CE: Categorical Exclusion (NEPA) or Categorical Exemption (CEQA)

CEQ: Council on Environmental Quality

CEQA: California Environmental Quality Act

CERES: California Environmental Resources Evaluation System

CERLA: Comprehensive Environmental Response, Compensation, and Liability Act

CESA: California Endangered Species Act

CFR: Code of Federal Regulations

CGS: California Geological Survey

CHP: California Highway Patrol

CHRIS: California Historical Resources Information System

CIA: Community Impact Assessment

CIDH: cast-in-drilled-hole

CNDDB: California Natural Diversity Database

CNPS: California Native Plant Society

CO: carbon monoxide

CO_2: carbon dioxide

COG: Council of Governments

COZEEP: Construction Zone Enhanced Enforcement Program

CPRA: California Public Records Act

CRHR: California Register of Historical Resources

CRM: Cultural Resources Management

CSO: Cultural Studies Office

CTC: California Transportation Commission

CTP: California Transportation Plan

CUPA: Certified Unified Program Agencies

CWA: Clean Water Act

D

dBA: A-weighted decibel

dBA Leq: A-weighted noise level

DEA: Division of Environmental Analysis

DED: draft environmental document

DNAC: District Native American Coordinator

DOC: California Department of Conservation

DOT: Department of Transportation [general]

DPR: Draft Project Report

DPR: California Department of Parks and Recreation

DSA: Disturbed Soil Area

DSI: Detailed Site Investigation

DTSC: California Department of Toxic Substances Control

DWR: California Department of Water Resources

E

EA: Environmental Assessment [NEPA}

ECL: Environmental Construction Liaison/Coordinator

ECR: Environmental Commitments Record

ED: environmental document

EFH: Essential Fish Habitat

EH: Environmental Handbook

EIR: Environmental Impact Report [CEQA]

EIS: Environmental Impact Statement [NEPA]

EJ: Environmental Justice

EMO: Environmental Management Office

EO: Executive Order

ESA: Environmentally Sensitive Area

ESA: Endangered Species Act

ESR: Environmental Study Request

F

FAE: Finding of Adverse Effect

FBFM: Flood Boundary and Floodway Map

FED: final environmental document

FEIR: Final Environmental Impact Report (CEQA)

FEIS: Final Environmental Impact Statement (NEPA)

FEMA: Federal Emergency Management Agency

FESA: Federal Endangered Species Act

FHWA: Federal Highway Administration

FIRM: Flood Insurance Rate Map

FLPMA: Federal Land Policy and Management Act of 1976

FNAE: Finding of No Adverse Effect

FOE: Finding of Effect

FOIA: Freedom of Information Act

FONSI: Finding of No Significant Impact [NEPA]

FPPA: Farmland Protection Policy Act

FR: Federal Register

FSTIP: Federal State Transportation Improvement Program

FTIP: Federal Transportation Improvement Program

FY: Fiscal Year

G

GHG: greenhouse gas

GIS: Geographic Information Systems

GPS: Global Positioning System

H

HABS: Historic American Building Survey

HAER: Historic American Engineering Record

HASR: Historic Architectural Survey Report

HCM: Highway Capacity Manual

HCP: Habitat Conservation Plan

HDM: Highway Design Manual

HGM: Hydrogeomorphic Method

HMDD-A: Hazardous Materials Disclosure Document-Acquisition

HMDD-D: Hazardous Materials Disclosure Document-Disposal

HPSR: Historic Property Survey Report

HRC: Heritage Resources Coordinator

HRCR: Historical Resources Compliance Report

HRER: Historical Resources Evaluation Report

HSWA: Hazardous and Solid Waste Amendments

I

IGR: Intergovernmental Review

IIP: Interregional Improvement Program

IPCC: Intergovernmental Panel on Climate Change

IS: Initial Study [CEQA]

IS/EA: Initial Study [CEQA]/Environmental Assessment [NEPA]

ISA: Initial Site Assessment

ITIP: Interregional Transportation Improvement Program

ITP: Incidental Take Permit

ITSP: Interregional Transportation Strategic Plan

J

JD: Jurisdictional Determination

K

L

LAPM: Local Assistance Procedures Manual

LEDPA: Least Environmentally Damaging Practicable Alternative

LESA: Land Evaluation and Site Assessment

LUST: leaking underground storage tank

LWCFA: Land and Water Conservation Fund Act of 1965

M

MAP-21: Moving Ahead for Progress in the 21st Century Act

MBTA: Migratory Bird Treaty Act

MCCE: Mitigation and Compliance Cost Estimate

MEP: Maximum Extent Practicable

MMPA: Marine Mammal Protection Act

MMRR: Mitigation Monitoring and Reporting Record

MND: Mitigated Negative Declaration [CEQA]

MOA: Memorandum of Agreement

MOU: Memorandum of Understanding

MPO: Metropolitan Planning Organization

MS4: Municipal Separate Storm Sewer System

MSAT: Mobile Source Air Toxics

MTP: Metropolitan Transportation Plan

MTIP: Metropolitan Transportation Improvement Program

N

NAAQS: National Ambient Air Quality Standards

NAC: Noise Abatement Criteria

NADR: Noise Abatement Decision Report

NAE: No Adverse Effect

NAGPRA: Native American Graves Protection and Repatriation Act of 1990

NAHC: Native American Heritage Commission

NCCP: Natural Community Conservation Planning

NCHRP: National Cooperative Highway Research Program

ND: Negative Declaration [CEQA]

NEPA: National Environmental Policy Act

NES: Natural Environment Study

NES-MI: Natural Environmental Study (Minimal Impact)

NESHAP: National Emissions Standards for Hazardous Air Pollutants

NFIP: National Flood Insurance Program

NFSAM: National Flood Security Act Manual

NH_3: ammonia

NHL: National Historic Landmark

NHPA: National Historic Preservation Act

NHS: National Highway System

NNL: National Natural Landmark

NOA: naturally occurring asbestos

NOA: Notice of Availability

NOAA: National Oceanic and Atmospheric Administration

NOAA-Fisheries: National Marine Fisheries Service

NOC: Notice of Completion

NOD: Notice of Determination

NOE: Notice of Exemption

NOI: Notice of Intent

NOP: Notice of Preparation

NOx: nitrogen oxide

NPDES: National Pollutant Discharge Elimination System

NPL: National Priorities List

NPPA: [California] Native Plant Protection Act

NPRM: Notice of Proposed Rule Making

NPS: National Park Service

NR: National Register [of Historic Places]

NRCS: National Resources Conservation Service

NRHP: National Register of Historic Places

NSSP: Nonstandard Special Provision

NWP: Nationwide Permit

O

O.C.: Overcrossing

OCRM: National Oceanic and Atmospheric Administration-Office of Ocean and Coastal Resource Management

OHP: [California] Office of Historic Preservation

OHWM: Ordinary High-Water Mark

OPR: [California] Office of Planning and Research

OSHA: Occupational Safety Hazard Administration

P

PA: Programmatic Agreement

PA&ED: Project Approval and Environmental Document

Pb: lead

PDPM: [Caltrans] Project Development Procedures Manual

PDT: Project Development Team

PE: Project Engineer

PEAR: Preliminary Environmental Assessment Report

PEER: Permit Engineering Evaluation Report

PER: Paleontological Evaluation Report

PF: Project Feature(s)

PG: Professional Geologist

PG&E: Pacific Gas and Electric Company

PID: Project Initiation Document

PIR: Paleontological Identification Report

PLAC: Permits, Licenses, Agreements, and Certifications

PM: particulate matter

PM: post mile

PM10: particulate matter less than 10 microns in diameter

PM2.5: particulate matter less than 2.5 microns in diameter

PMP: Paleontological Mitigation Plan

PMR: Paleontological Mitigation Report

POAQC: Project of Air Quality Concern

POC: Pedestrian Overcrossing

ppb: parts per billion

ppm: parts per million

PR: Project Report

PRC: [California] Public Resources Code

PS&E: Plans, Specifications, and Estimates

PSI: Preliminary Site Investigation

PSI: pounds per square inch

PUC: Public Utilities Commission [California]

Q

R

RAP: Relocation Assistance Program

RCRA: Resource Conservation and Recovery Act of 1976

RIP: Regional Improvement Program

ROD: Record of Decision [NEPA]

ROW: right-of-way

RTIP: Regional Transportation Improvement Program

RTP: Regional Transportation Plan

RTPA: Regional Transportation Planning Agency

RWQCB: Regional Water Quality Control Board

S

SAFETEA-LU: Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

SARA: Superfund Amendments and Reauthorization Act

SB: Senate Bill

SCH: [California] State Clearinghouse

SDWA: Safe Drinking Water Act

SEE: social, economic, and environmental

SER: Standard Environmental Reference

SFHA: Special Flood Hazard Area

SHA: State Highway Agency

SHBSB: State Historical Building Safety Board

SHL: State Historical Landmark

SHOPP: State Highway Operation and Protection Program

SHPO: State Historic Preservation Officer

SHS: State Highway System

SI: Safety Index

SIP: State Implementation Plan

SLC: [California] State Lands Commission

SMARA: Surface Mining and Reclamation Act of 1975

SOC: Statement of Overriding Considerations [CEQA]

SOL: Statute of Limitations

SR: State Route

SSP: Standard Special Provision

STIP: Statewide Transportation Improvement Program

SWMP: Storm Water Management Plan

SWPPP: Storm Water Pollution Prevention Plan

SWRCB: State Water Resources Control Board

T

TAC: Technical Advisory Committee

TASAS: Traffic Accident Surveillance and Analysis System

TCE: Temporary Construction Easement

TDM: Transportation Demand Management

TEA-21: Transportation Equity Act for the 21st Century

THPO: Tribal Historic Preservation Officer

TIP: Transportation Improvement Program

TMDL: Total Maximum Daily Load

TMP: Traffic Management Plan

TSM: Transportation Systems Management

U

UC: Undercrossing

U.S. EPA: United States Environmental Protection Agency

USACE: United States Army Corps of Engineers

USDOT: United States Department of Transportation

USFS: United States Forest Service

USFWS: United States Fish and Wildlife Service

USGS: United States Geological Survey

UST: underground storage tanks

V

VMT: Vehicle Miles of Travel

VOC: volatile organic compound

W

WPCP: Water Pollution Control Program

X

Y

Z

Appendix E List of Technical Studies

The following studies and/or technical analyses have been prepared and are incorporated by reference into this Initial Study/Environmental Assessment and can be located at:

Caltrans District 4 Office 111 Grand Ave. #300, Oakland, CA 94612

Please note, many state and federal laws limit the disclosure of sensitive cultural and tribal resource information to the public. Additional information regarding confidentiality of these resources can be found in the Standard Environmental Reference Volume 2 in Section 3.4.13 and Section 5.3.6.

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Appendix G Title VI/Non-Discrimination Policy Statement

CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

California Department of Transportation

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

September 2024

TITLE VI/NON-DISCRIMINATION POLICY STATEMENT

It is the policy of the California Department of Transportation (Caltrans), in accordance with Title VI of the Civil Rights Act of 1964 and the assurances set forth in the Caltrans' Title VI Program Plan, to ensure that no person in the United States shall on the grounds 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 non-discrimination authorities, remedies, and state law further those protections, including sex, disability, religion, sexual orientation, age, low income, and Limited English Proficiency (LEP).

Caltrans is committed to complying with 23 C.F.R. Part 200, 49 C.F.R. Part 21, 49 C.F.R. Part 303, and the Federal Transit Administration Circular 4702.1B. Caltrans will make every effort to ensure nondiscrimination in all of its services, programs, and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin (including LEP). In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a non-discriminatory manner.

The overall responsibility for this policy is assigned to the Caltrans Director. The Caltrans Title VI Coordinator is assigned to the Caltrans Office of Civil Rights Deputy Director, who then delegates sufficient responsibility and authority to the Office of Civil Rights' managers, including the Title VI Branch Manager, to effectively implement the Caltrans Title VI Program. Individuals with questions or requiring additional information relating to the policy or the implementation of the Caltrans Title VI Program should contact the Title VI Branch Manager at title.vi@dot.ca.gov or at (916) 639-6392, or visit the following web page: https://dot.ca.gov/programs/civil-rights/title-vi.

TONY TAVARES
Director

"Provide a safe and reliable transportation network that serves all people and respects the environment"

Appendix H Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: 12/26/2024 17:17:29 UTC
Project Code: 2024-0119879
Project Name: Caldecott Tunnels

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2024-0119879
Project Name: Caldecott Tunnels
Project Type: Road/Hwy - Maintenance/Modification
Project Description: The California Department of Transportation (Caltrans) proposes the Caldecott Bores 1, 2, and 3 Rehabilitation Project (Project) along the State Route (SR) 24 in Alameda and Contra Costa Counties, through the Berkely Hills to Orinda, California. The Project proposes to rehabilitate the Caldecott Tunnel Bores 1, 2, and 3 on SR 24.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.85829145,-122.21310374450977,14z

Counties: Alameda and Contra Costa counties, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 14 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered

BIRDS

NAME	STATUS
California Least Tern *Sternula antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
California Ridgway"s Rail *Rallus obsoletus obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

REPTILES

NAME	STATUS
Alameda Whipsnake (=striped Racer) *Masticophis lateralis euryxanthus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5524	Threatened
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
Foothill Yellow-legged Frog *Rana boylii* Population: Central Coast Distinct Population Segment (Central Coast DPS) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5133	Threatened

FISHES

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

FLOWERING PLANTS

NAME	STATUS
Pallid Manzanita *Arctostaphylos pallida* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8292	Threatened
Presidio Clarkia *Clarkia franciscana* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3890	Endangered
Robust Spineflower *Chorizanthe robusta var. robusta* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9287	Endangered

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Alameda Whipsnake (=striped Racer) *Masticophis lateralis euryxanthus* https://ecos.fws.gov/ecp/species/5524#crithab	Final

IPAC USER CONTACT INFORMATION

Agency: California Department of Transportation District 4
Name: Cherish Cartagena
Address: 1814 Franklin St Ste 504
City: Oakland
State: CA
Zip: 94612
Email ccartagenamills@kleinfelder.com
Phone: 5108910024