

State Route 12 Major Pavement Rehabilitation (2R) Project



Initial Study with Mitigated Negative Declaration

SOLANO COUNTY, CALIFORNIA
DISTRICT 4 – PM 7.7 to PM 14.1
EA 04-2Q550/EFIS 0419000024

Prepared by the
State of California, Department of Transportation

December 2022



General Information about this Document

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study with Mitigated Negative Declaration (IS/MND), which examines the potential environmental impacts of the alternatives being considered for the proposed Project located in Solano County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the Project is being proposed, what alternatives we have considered for the Project, how the existing environment could be affected by the Project, the potential impacts of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures (all measures are listed in Appendix A). The IS/MND was circulated to the public for 31 days between October 7, 2022, and November 7, 2022. Public comments received in the form of emails and letters, and responses to these comments during the review period are included in Appendix F. Throughout this document, a vertical line in the margin indicates a change made since the circulation of the IS/MND. Additional copies of this document are available for review at the Caltrans document website (<https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs>)

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 alternative formats, please call or write to Department of Transportation, District 4, Attn: Skylar Nguyen, Environmental Planning, PO Box 23660, MS 8B, Oakland, CA 94623; (510) 286-5935 (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.

Initial Study with Mitigated Negative Declaration

04-SOL-12

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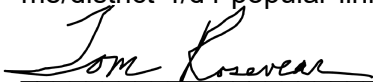
PM

04-2Q550

E.A.

| | |
|---|---|
| Project title: | State Route 12 Major Pavement Rehabilitation (2R) Project |
| SCH Number: | 2022100135 |
| Lead agency name and address: | California Department of Transportation, District 4 P.O. Box 23660, MS 8B, Oakland, CA 94623 |
| Contact person and phone number: | Skylar Nguyen, Environmental Scientist Phone: (510)-496-9551 |
| Project location: | State Route (SR) 12 from 0.5 mile east of Walters Road/Lawler Ranch Parkway to 0.5 mile east of Shiloh/Lambie Road in Solano County. |
| General plan description: | Highway |
| Zoning: | Transportation Corridor |
| Other public agencies whose approval is required (e.g., permits, financial approval, or participation agreements) | <ul style="list-style-type: none">• Clean Water Act, Section 404 Authorization from the U.S. Army Corps of Engineers• Clean Water Act 401 Water Quality Certification from the Regional Water Quality Control Board – San Francisco Bay• Section 1602 Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife• Incidental Take Permit from California Department of Fish and Wildlife• Biological Opinion from United States Fish and Wildlife Service• Maintenance and Individual Permit from San Francisco Bay Conservation and Development Commission |

The document, maps, Project information, and supporting technical studies are available for review weekdays from 8 a.m. to 5 p.m. at the Caltrans District 4 Office, 111 Grand Avenue, Oakland, CA 94612. The document is also available to download at [the Caltrans environmental document website](https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs) (<https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs>).



Tom Rosevear

December 28, 2022

for

Maxwell D. Lammert
Caltrans District 4, Acting Office Chief
Office of Environmental Analysis
CEQA Lead Agency

Date

Mitigated Negative Declaration

Pursuant to Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) has prepared this Initial Study with Mitigated Negative Declaration (IS/MND) for the proposed State Route 12 Major Pavement Rehabilitation (2R) Project (Project) at Post Mile (PM) 7.7 to PM 14.1 in Solano County, California. The Project would rehabilitate the existing mainline travel lane and shoulder roadway pavement on State Route (SR) 12 from 0.5 mile east of Walters Road/Lawler Ranch Parkway (westernmost end) to 0.5 mile east of Shiloh/Lambie Road (easternmost end). The Project proposes to replace asphalt concrete surfacing and overlay, replace the temporary barriers located in the median with permanent concrete barriers type 60M, replace shoulder and centerline rumble strips, replace metal beam guardrail with Midwest guardrail system, upgrade crash cushions to current standards, upgrade drainage systems, widen shoulders, remove and replace the existing asphalt concrete dikes, and provide erosion control where necessary. In addition, the Project proposes to upgrade the bridge railings at the Union Creek bridge and Denverton Creek bridge to be consistent with current Caltrans standards.

Determination

The Mitigated Negative Declaration (MND) is included to notify the public and reviewing agencies that it is Caltrans' intent to adopt an MND for this Project.

Caltrans has prepared an Initial Study for this Project, and following public review, has determined that the proposed Project would not have a significant effect on the environment for the reasons described in the following paragraphs.

The Project would have no effect on agricultural and forestry, cultural resources, geology and soils, mineral resources, population and housing, recreational resources, tribal cultural resources, or utilities and service systems.

In addition, the Project would have less than significant effects to aesthetics, air quality, energy, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, and noise.

With the following mitigation measures incorporated, the Project would have less than significant effects to biological resources:

- **MM-BIO-1: Compensation to Offset Project Permanent Impacts.** To offset permanent impacts from the Project, Caltrans will implement a compensation package based on the estimated impacts on protected natural resources, including wetlands, waters, and suitable habitat in the range of the listed species. Compensation will be determined in coordination

with the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), and/or Bay Conservation and Development Commission (BCDC) during the design phase. At a minimum, the compensation will be a 1:1 ratio and will be accomplished through a combination of onsite mitigation and/or purchase of mitigation credits. Compensation will include any one or a combination of the following approaches:

- Offsite mitigation through the purchase of credits at an approved conservation bank(s)
- Development of a compensation plan that will provide in-lieu funding to a nearby restoration program or restoration project that would create, restore, preserve, or enhance resources similar to those adversely affected by the Project
- Onsite restoration within the Caltrans right of way (ROW)

The Mitigation and Monitoring Plan will be developed and tailored for the proposed mitigation site before construction.

Compensation for temporary impacts on protected natural resources will be achieved through onsite in-kind habitat restoration to return the site to pre-construction conditions or better.

Caltrans will provide a Funding Assurance Letter to the appropriate regulatory resource agencies stating that sufficient funds for California tiger salamander habitat compensation have been budgeted in a mitigation subordinate Expenditure Authorization.

- **MM-BIO-2: Wetland Mitigation Monitoring.** After construction, Caltrans would monitor onsite vegetation at temporarily impacted wetland habitats and where any additional wetland enhancement or restoration is implemented as compensatory mitigation. Reports to environmental regulatory agencies on the status of monitoring following Project completion would be submitted as determined in Project permits and authorization. The Caltrans mitigation requirement would be considered satisfied once the target acreage of wetland habitat to be restored is successful, as determined and approved by the regulatory agencies requiring compensatory mitigation.

Melanie Brent

Melanie Brent
Caltrans District 4, Deputy District Director
Division of Environmental Planning and Engineering
CEQA Lead Agency

12/28/2022

Date

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| Appendix G | Public Participation Summary |

Chapter 1 Project Description

1.1 Introduction

The California Department of Transportation (Caltrans) is the lead agency under the California Environmental Quality Act (CEQA) for the State Route 12 Major Pavement Rehabilitation (2R) Project (Project) from Post Mile (PM) 7.7 to PM 14.1 in Solano County, California (Figure 1-1). The proposed Project extends along State Route (SR) 12 from 0.5 mile east of Walters Road/Lawler Ranch Parkway to 0.5 mile east of Shiloh/Lambie Road in Solano County (Figure 1-2, included at the end of this chapter).

The Project involves the following activities:

- Resurfacing the existing pavement on both mainline traveled ways and shoulders
- Replacing temporary barriers in the median with concrete barriers type 60M
- Replacing shoulder and centerline rumble strips, metal beam guardrails (MBGR), culverts, and crash cushions
- Relocating dikes that are within 7.0 to 7.5 feet of the existing edge of traveled way
- Upgrading drainage systems at PM 8.3, 8.4, 9.65, 10.7 and 13.7
- Upgrading bridge railings at the Union Creek and Denverton Creek bridges to be consistent with current Caltrans standards

SR 12 is an east-west route that extends from the Sierra Nevada foothills to the City of Sebastopol in Sonoma County. Within the Project limits, SR 12 is a two-lane conventional highway, one lane in each direction, that travels east to west providing connection to Calaveras, San Joaquin, Sacramento, Solano, Napa, and Sonoma counties. SR 12 is used for local and interregional travel and movement of goods and services and connects the Bay Area and the Central Valley.

1.2 Project Funding

This Project is considered a Major Pavement Rehabilitation (2R) under the 2018 State Highway Operation and Protection Program (SHOPP), which funds the repair and preservation of the State Highway System, safety improvements, and some highway operational improvements. It has also been determined that this Project is

eligible for Federal-aid funding. The proposed SHOPP funding fiscal year is 2023/2024.

1.3 Project Background

The following projects have previously been completed in the Project area:

- Project EA 04-0T10U4 (PM 7.9/20.6), Paving and Widening Project, was completed in 2011. Between PM 7.9 to 14.1, the project replaced asphalt concrete (AC) surfacing at various locations while placing 0.1-foot AC overlay on the existing pavement.
- Project EA 04-3A6304 (PM 7.9/20.6), Median Barrier Project, was completed in 2007. This project installed K-rails along the centerline of the highway with crash cushions and channelizers. The scope of this project did not include pavement resurfacing.
- Project EA 04-0P7504 (PM 7.5/13.6 and 20.5/25.0), AC Digouts Project, was completed in October 2021. The project performed cold-planing of AC pavement and placement of hot mix asphalt.

1.4 Purpose and Need

1.4.1 Purpose

The purpose of this Project is to rehabilitate the facility to a state of good repair such that the roadway would be in a condition that requires minimal maintenance, extends the life of the existing pavement, and improves ride quality.

1.4.2 Need

The 2016 pavement condition survey for this section of roadway indicates the existing pavement is in fair condition with a low ride quality (Caltrans 2018). If this condition is not corrected, the roadway will deteriorate to a major rehabilitation category, which would require additional repairs.

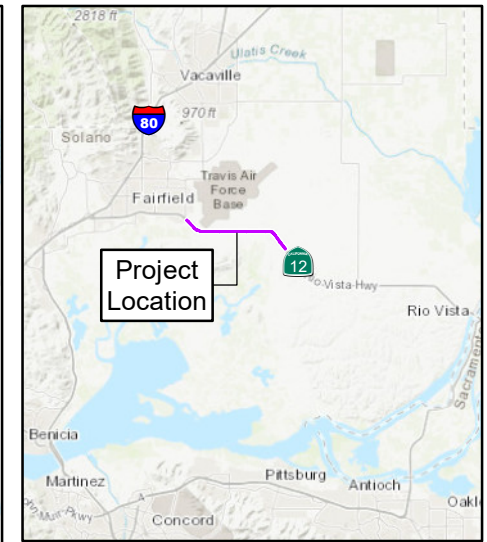
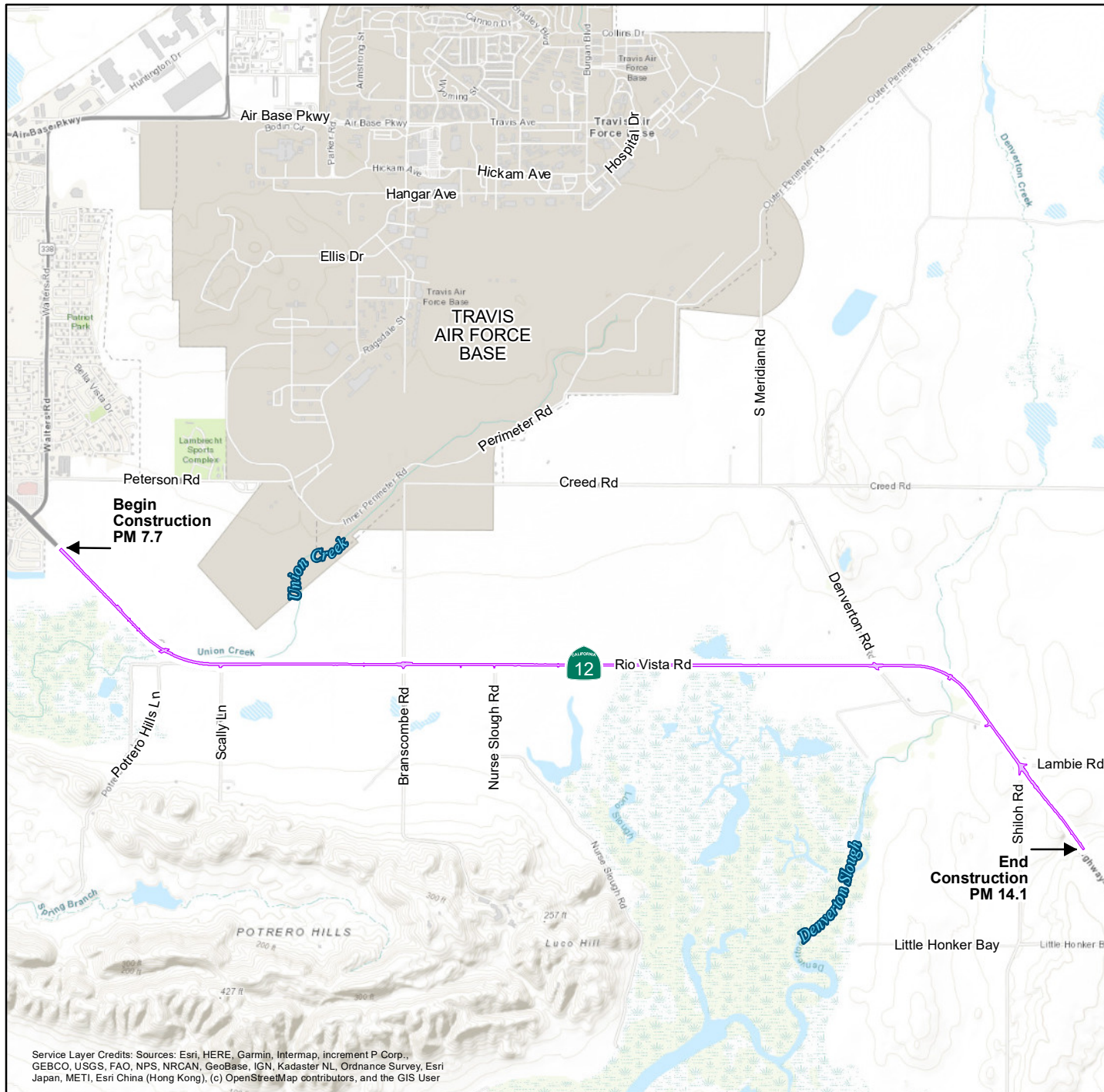
1.5 Project Description

This Project proposes to resurface the existing pavement on both mainline traveled ways and shoulders. The Project would replace existing K-rails located in the median with permanent concrete barriers type 60M (Figures 1-3 and 1-4), replace rumble strips along the shoulder and centerline, and replace existing MBGR with Midwest guardrail system (MGS). Standard gaps for wildlife crossing would be incorporated at regular intervals along the proposed MGS barriers according to the 2022 Caltrans' Standard Plans. Please see Figure 1-4 below for a viable design for these standard gaps. However, the specific interval for these gaps and more detailed design would be developed during the Design and permitting phase of this Project in collaboration

with regulatory agencies. The existing shoulders within the Project limits, currently between 7.0 and 7.5 feet wide, would be widened to 8 feet between PM 9.0 to PM 12.5. These shoulders would be signed and striped as bike lanes. The existing AC dikes that are within 7.0 to 7.5 feet of the existing edge of traveled way would be relocated to the edge of pavement to accommodate the standard 8-foot shoulders from PM 9.0 to PM 12.5. The Project would also upgrade the existing crash cushions to current standards and repair damaged drainage systems. At some locations along the highway, vegetation removal would be required for equipment staging and construction access.

Two bridges along SR 12 within the Project area, the Union Creek bridge and Denverton Creek bridge, would also be upgraded to meet current Caltrans design standards, as follows:

- The existing bridges are approximately 40 feet wide with 8-foot shoulders and lane widths of 11 feet. The concrete deck on each side of the bridge would be reconstructed and widened by 3 feet for a total 6-foot widening. California ST-75 bridge railings would be installed on both sides of the bridges.
- The deck surfaces would be overlaid with polyester concrete.
- Concrete barriers type 60M would be installed in the medians.



LEGEND

Project Footprint

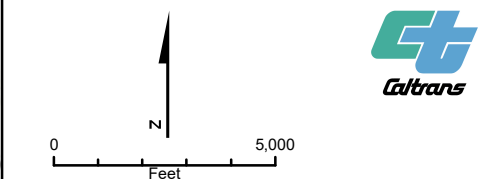


Figure 1-1
Vicinity Map
 State Route 12
 Major Pavement Rehabilitation Project
 EA 04-2Q550, SOL-12-PM 7.7/14.1
 Solano County, California

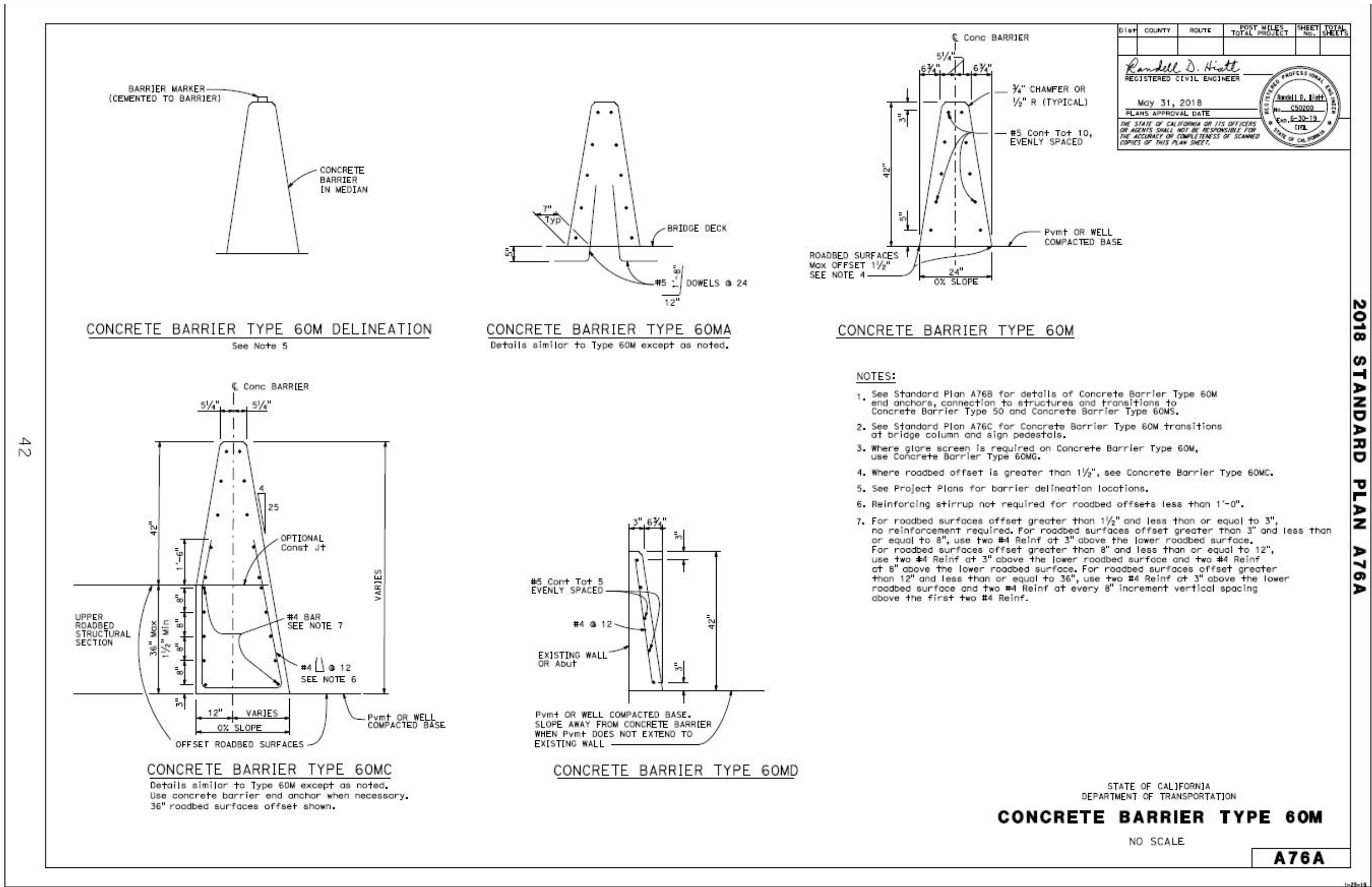


Figure 1-3. Typical Concrete Barrier Type 60M

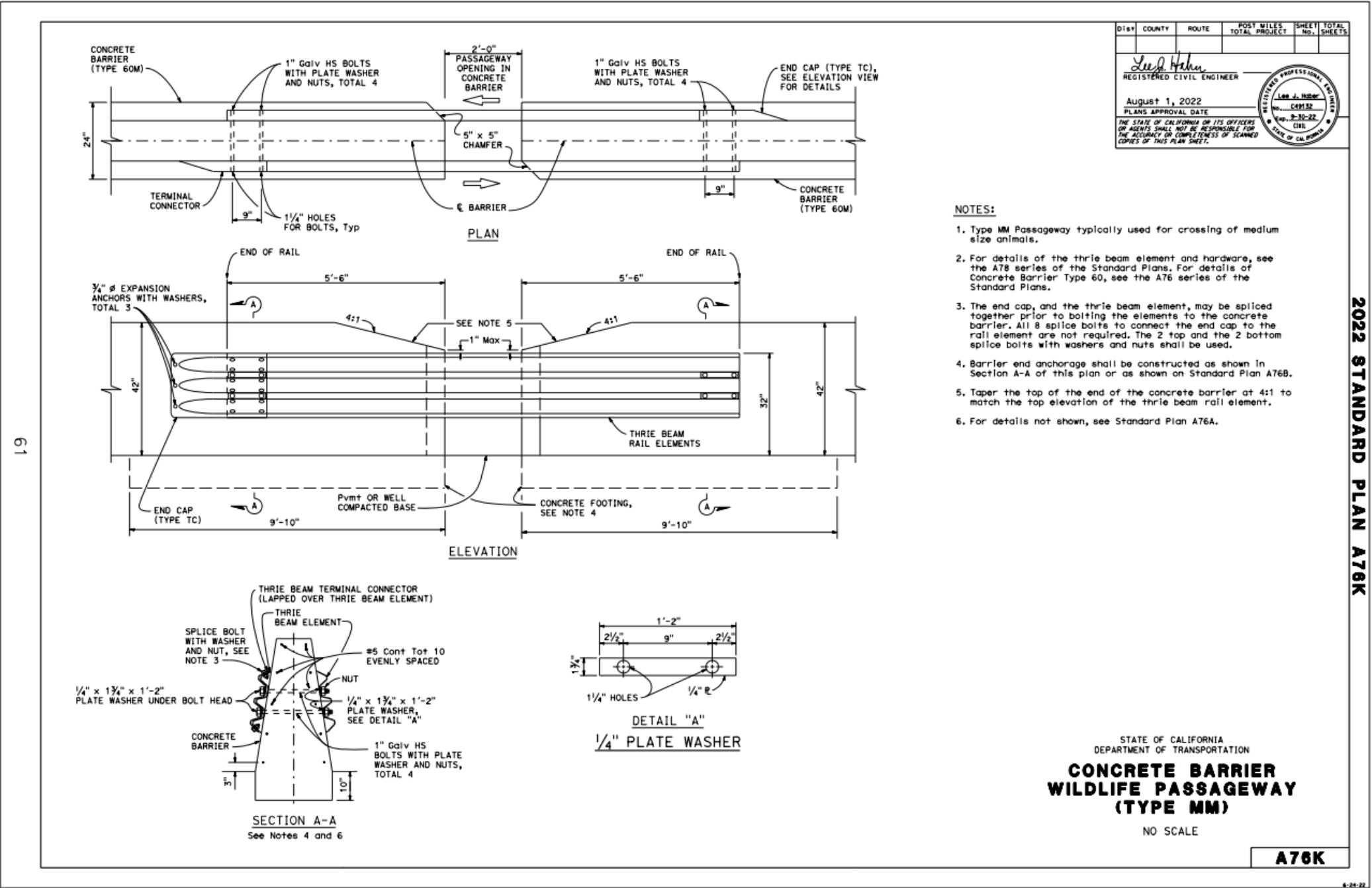


Figure 1-4. Concrete Barrier Wildlife Passageway



Figure 1-5. Example Concrete Barrier Type 60M with Optional Lighting Attached

Note that lighting will not be installed as part of this Project.

1.6 Project Alternatives

This section describes the construction methodology of the Build Alternative as described in Section 1.5, as well as the potential impacts of the No-Build Alternative.

1.6.1 Pre-construction Activities

CONSTRUCTION STAGING AREAS

Before construction, off-pavement staging areas within Caltrans right of way (ROW) would be established at various locations along SR 12 as identified in Figure 1-1. Preparing the staging locations may require some brush removal to store equipment.

BEST MANAGEMENT PRACTICES

Best management practices (BMPs), including project features and avoidance and minimization measures (AMMs), would be implemented at various Project phases (pre-construction, during construction, and post-construction). These measures are used to minimize environmental disturbance; a comprehensive list of project features and AMMs is provided in Appendix A. Pre-construction measures would include the following:

- Caltrans would delineate construction areas and environmentally sensitive areas (ESAs) (i.e., areas containing sensitive habitats adjacent to or within the Project limits for which physical disturbance is not allowed) on the final construction plans.

- Construction work windows would be incorporated where applicable to avoid impacts to sensitive wetlands and vernal pools and wet weather when California tiger salamanders migrate.
- An agency-approved biologist would conduct pre-construction surveys for special-status species. The biologist would be present during construction activities, including installation of exclusionary fencing around ESAs, vegetation clearing and grubbing, ground disturbance, and other work activities when there is a potential for special-status species to be impacted.
- A Storm Water Pollution Prevention Plan (SWPPP) would be developed and temporary construction BMPs would be implemented in compliance with the requirements of the State Water Resources Control Board as outlined in the Construction General Permit (CGP).

UTILITIES

Utility owners located within the Project limits consist of Pacific Gas & Electric (PG&E), American Telephone and Telegraph Company (AT&T), Fairfield Suisun Sewer District, Cable Com, and the City of Fairfield. Overhead utility wires are visible at the following PM locations: 9.02, 9.90, and 13.56. Relocation of utilities is not anticipated.

RIGHT OF WAY

Temporary construction easements (TCE) would be required at the Union Creek bridge to conduct bridge work activities in the creek, including creek dewatering and diversion. The remainder of the proposed work is expected to be within Caltrans ROW.

VEGETATION REMOVAL

Vegetation removal for equipment staging areas and construction access would be avoided to the extent feasible. Caltrans standard vegetation control would be constructed under the new MGS.

Landscape plantings based on aesthetics are typically not installed along a conventional highway. However, it is possible that further environmental investigation, resource agency permit conditions, or a change of scope, as determined by Caltrans, could necessitate planting as required environmental mitigation. Any plantings determined would require a plant establishment period of a minimum of 1 year. Tree removals are not anticipated.

1.6.2 Construction Activities

PAVEMENT REHABILITATION

The pavement surface would be rehabilitated by being overlaid to extend its functional life and improve quality to highway users. The existing pavement damage includes transverse cracks, longitudinal cracks, rutting, potholes, raveling, and severe alligator cracks along the outer wheel paths of the road. The existing damaged pavement would be dug-out or removed to a depth of stable material in areas with localized intermediate to advanced distress. Full-depth AC would be removed and replaced at damaged localized areas. The pavement would be laid with 0.2-foot rubberized hot mix asphalt, geosynthetic pavement interlayer, and 0.1-foot hot mix asphalt. Tack coat would be applied in between hot mix asphalt lifts. Cracks wider than 0.25 inch would be sealed prior to overlays. Existing AC dikes and overside drains would be removed and replaced in-kind. The AC dikes from PM 9.0 to PM 12.5 would be relocated at the edge of the proposed 8-foot shoulder. Shoulder backing would be placed along edges of the asphalt pavement and behind the AC dike. The shoulder backing would be filled with hot mix asphalt and would include gravel, sand, and concrete. New pavement stripes would be thermoplastic with high-performance glass beads with enhanced wet-night visibility.

MEDIAN BARRIER

The Project would replace the existing concrete barrier (K-rail) located in the median with a new concrete barrier type 60M to meet current Caltrans highway safety standards. Existing concrete barriers are located within the median at the following PMs: 7.7 to 8.76, 9.03 to 9.76, 10.03 to 10.27, 10.52 to 12.35, and 12.66 to 13.4. New concrete barriers type 60M would be built on top of the existing pavement in the same locations, and the existing concrete barriers would be removed. The existing crash cushions would be removed and replaced with crash cushions that are designed for concrete barriers type 60M. Construction of the new barriers would require excavation to a maximum depth of approximately 10 inches for installation of rebar stakes prior to placement of the new barriers.

RUMBLE STRIPS AND GUARDRAILS

The Project would replace the existing centerline rumble strips and replace the existing MBGR with MGS. The new centerline rumble strips would be placed where there would be no concrete barrier in the median between PM 13.6 and 14.1, and the shoulder rumble strips would be placed between PM 7.7 and 14.1. Existing MBGR railings are located outside the edge of pavement between PM 8.52 and 8.56, PM 12.9 and 12.95, and PM 14.0 and 14.1.

Minor concrete vegetation control would be used for the installation of MGS. The anticipated maximum depth of excavation would be between 3.5 feet to 4.5 feet for

the installation of MGS posts and 5/16 inch for installation of the rumble strips. Excavation would occur for installation of the MGS wood posts and would vary based on soil conditions. Typically, a truck-mounted auger would be used for the installation of new wood posts.

CULVERT REPLACEMENT AND DRAINAGE

Open-trench methods would be used during the replacement of culverts. This method includes a portion of the roadway being sawcut and removed to expose the culvert. The width of the trench would be 4 feet to repair a 24-inch pipe, 4.5 feet to repair a 30-inch pipe, and 5 feet to install a 36-inch pipe. The pipes would then be removed, and new pipes would be installed in-kind. The trench would be backfilled with slurry cement or controlled low-strength material and compacted. Tack coat would be applied to all exposed surfaces prior to laying hot mix asphalt. Existing AC dikes and overside drains would be replaced.

Within the Project limits, Caltrans has identified six culverts in poor condition that would be replaced. Approximately 253 linear feet of culvert would be replaced using open-trench methods. Culverts to be replaced are listed in Table 1-1, with their location and pipe size.

Table 1-1. Culverts to be Replaced

| Location (PM) | Pipe Size (inches) | Notes |
|----------------------|---------------------------|-----------------------------------|
| 8.3 | 30 | Replace entire pipe (80.4 feet) |
| 8.4 | 30 | Replace entire pipe (77.5 feet) |
| 9.65 | 24 | Replace 10 feet of pipe at outlet |
| 10.2 | 36 | Replace 10 feet of pipe at outlet |
| 10.7 | 24 | Replace 10 feet of pipe at outlet |
| 13.7 | 24 | Replace entire pipe (65 feet) |

BRIDGE WORK

The existing Union Creek bridge is approximately 72.4 feet long and 40 feet wide, and the existing Denverton Creek bridge is approximately 57.5 feet long and 40 feet wide. Both bridges currently have 8-foot shoulders and lane widths of 11 feet. Work on the bridges will be performed as follows:

Demolition

Removal of the existing bridge would be completed using a concrete saw to score concrete beginning at the exterior of the bridge. An excavator with a hydraulic

hammer would break up the concrete. Torches and a saw would be used to cut the rebar. A water truck would be used for dust control during demolition, and a compressor hand tool would be used to chip away at traffic stripes, pavement markings, or markers. Concrete and metal waste and debris would be hauled away to a recycling facility. Any asbestos or lead would be disposed of per regulatory requirements for hazardous waste disposal. Temporary railings would be installed to maintain worker safety during construction. Measures for preventing debris from falling into the creek, such as netting, would also be installed.

Construction

After demolition is completed, 3 feet of new concrete deck would be constructed along both sides of the bridge to accommodate the widening. Both Union Creek and Denverton Creek bridges would require construction of new wingwalls. The bridge would be widened by a total of 6 feet (3 feet on each side). The shoulders on the bridge would remain the same, at 8 feet, while the lane widths would increase from 11 feet to 12 feet. The remaining widening is necessary for the new California ST-75 bridge railings along each shoulder of the bridge and a concrete barrier type 60M in the median. The deck surfaces would then be prepared by completing the removal of any traffic stripes, pavement markings, or markers, and cleaning the deck with high-pressure water jet and dust blowing equipment. Lastly, a polyester concrete overlay would be placed on the 46-foot-wide bridges.

Post-construction

Post-construction, both the Union Creek and Denverton Creek bridges would be 46 feet wide, 6 feet wider than their existing 40-foot width. The bridges would remain their current lengths of 72.4 feet and 57.5 feet, respectively. The bridge shoulders would remain 8 feet, and the lane widths would increase by 1 foot to provide 12-foot-wide lanes in each direction.

TEMPORARY CREEK DIVERSION

A temporary creek diversion would be used at Union Creek and Denverton Creek to provide dry work areas during bridge abutment wingwall construction. Piped diversion would be used, which includes a bypass pipe to serve as a temporary diversion for creek flows. Water would be carried by the bypass pipe past the work areas and discharged further downstream. Concrete barriers and gravel filled bags would be used to create a temporary dam. Falsework and equipment access within the creek would be allowed after the work area is dewatered. For the Union Creek bridge, a TCE would be required to complete this work.

TRAFFIC

Construction would require lane closures during non-peak hours and at night as per the lane closure windows provided by Caltrans District 4 Highway Operations. One-way traffic control would be used during construction. A detailed Traffic Management Plan (TMP) would be prepared to minimize the delays to the traveling public and any disruption to emergency services. Exact lane closure hours would be provided during the design phase of the Project. Both lanes would remain open during construction at both the Union Creek and Denver Creek bridges.

GROUND DISTURBANCE

The Project is anticipated to have 0.42 acre of new impervious areas (from shoulder widening on the bridges and installation of MGS) and 2.6 acres of total disturbed soil areas.

EROSION CONTROL

Permanent erosion control measures would be implemented, allowing disturbed areas to be stabilized as a means of sediment control. Based on the Project site and scope of work, measures expected to be employed to achieve permanent erosion control include, but are not limited to, rolled erosion control product (netting), fiber rolls, hydroseed, hydromulch, and decompaction. All state and federal waters and wetlands would be protected from sediment and pollutant discharges in accordance with applicable laws, permits, and Caltrans requirements. All construction spoils and debris would be tested and cleared prior to handling or would be hauled to a permitted disposal site. These measures would be implemented prior to construction completion at all locations where the soil surface is disturbed, including construction staging areas.

EQUIPMENT

Equipment would include the following: paving machines (pavers), cold plane machines (grinders), rollers, compactors, augers, concrete trucks, utility trucks, pickup trucks, backhoes, excavators, cranes, forklifts, dump trucks, haul trucks, jack hammers, saw cutters, vacuum cleaners, water trucks, generators, a portable light cart, and street sweepers.

SCHEDULE

Construction is anticipated to begin in January 2025 and end in April 2027, with a total of 350 working days estimated. Construction activities within the creek would be limited to the dry season between June 1 and October 31. Some nighttime construction is proposed.

1.6.3 Post-construction Activities

All construction materials and debris would be removed from the construction work areas and recycled or properly disposed of offsite. Caltrans would restore all areas temporarily disturbed by Project activities, such as staging areas and access roads, to at least pre-construction conditions in accordance with applicable permits and Caltrans requirements.

1.6.4 No-Build Alternative

The No-Build Alternative would not construct the proposed Project and the purpose and need would not be met. With the No-Build Alternative, the condition of the pavement would continue to deteriorate and would require frequent maintenance, costly repairs, and pose greater safety risk to highway users.

1.7 Permits and Approvals Needed

Table 1-2 summarizes the permits anticipated for the proposed Project by the respective agencies, as well as permit status. Approval of Project funding is required by the California Transportation Commission board for each phase of the Project.

Table 1-2. Required Permits

| Agency | Permit |
|---|--|
| United States Army Corps of Engineers | Clean Water Act Section 404 Permit for filling or dredging waters of the United States |
| United States Fish and Wildlife Service | Biological Opinion |
| California Department of Fish and Wildlife | 1602 Lake and Streambed Alteration Agreement |
| San Francisco Regional Water Quality Control Board | Clean Water Act Section 401 Water Quality Certification |
| California Department of Fish and Wildlife | Incidental Take Permit |
| San Francisco Bay Conservation and Development Commission | Maintenance and Individual Permit |

1.8 Standardized Measures

1.8.1 Project Elements of the Build Alternative

The proposed Build Alternative includes standardized measures (that is, project features) that are part of the Project description. Standardized measures (such as BMPs) are those measures that are generally applied to most or all Caltrans

projects. These measures are not specific to the circumstances of a particular project.

Project-specific AMMs are included in Section 2.1 for relevant physical, biological, social, and economic factors that might be affected by the proposed Project, and are listed with the following project features in Appendix A.

1.8.2 Project Features

PF-AES-1: Vegetation Protection. Existing trees and vegetation would be preserved to the extent feasible. Trees and vegetation outside of the clearing and grubbing limits would be protected from the contractor's operations, equipment, and materials storage. Tree trimming and pruning, where required, would be under the direction of a certified arborist.

PF-AES-2: 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 where required.

PF-AES-3: Construction Staging. Except as detailed in the Contract Plans, staging areas would not affect existing landscaped areas resulting in death and/or removal of trees and shrubs, or disruption and destruction of existing irrigation facilities.

PF-AES-4: Construction Waste. During construction operations, unsightly material and equipment in staging areas would be placed where they are less visible and/or covered where possible.

PF-AES-5: Construction Lighting. Construction lighting would be directed toward the immediate vicinity of active work and would avoid light trespass through directional lighting, shielding, and other measures as needed.

PF-AQ-1: Control Measures for Construction Emissions of Fugitive Dust. Dust control measures would be implemented to minimize airborne dust and soil particles generated from construction. For disturbed soil areas, the use of tackifier to control dust emissions would be included in the construction contract. Any material stockpiles would be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion.

PF-AQ-2: Idling and Access Points. Idling times would be minimized either by shutting off equipment when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure [Title 13, Section 2485 of California Code of Regulations]). Clear signage would be provided for construction workers at all access points. Construction activities involving the

extended idling of diesel equipment or vehicles would be prohibited, to the extent feasible.

PF-AQ-3: Maintaining Construction Equipment and Vehicles. All construction equipment and vehicles would be maintained and properly tuned in accordance with manufacturer's specifications. All equipment would be checked by a certified mechanic and determined to be running in proper condition prior to operation.

PF-BIO-1: Documentation at Project Site. A Permit Compliance Binder would be maintained at the construction site at all times and presented to resource agency (U.S. Army Corps of Engineers [USACE], U.S. Fish and Wildlife Service [USFWS], California Department of Fish and Wildlife [CDFW], Bay Conservation and Development Commission [BCDC] and/or Regional Water Quality Control Board [RWQCB]) personnel upon request. The Permit Compliance Binder would include a copy of all original permits and agreements, and any extensions and amendments to the permits and agreements.

PF-BIO-2: Work According to Documents. Except as they are contradicted by measures within the permits and agreements, all work would be conducted in conformance with the Project description in the permits and agreements and the AMMs provided in the permits and agreements.

PF-BIO-3: Agency-Approved Biologist(s). Prior to construction, the qualifications of the biological monitor(s) would be submitted to USFWS and CDFW for review and approval.

PF-BIO-4: Designation of Environmentally Sensitive Areas and Construction and Storage Areas. Caltrans will delineate construction areas and ESAs (defined as areas containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed) on the final construction plans. The approved biological monitor will be onsite to direct the installation of high-visibility, orange ESA fencing to prevent encroachment of construction personnel and equipment onto sensitive areas during construction activities, as needed. Staging, storage, and parking areas will be located on paved or graveled surfaces within the ROW and away from any designated ESAs, as specified by the Project biologist, to avoid construction impacts to natural communities. Equipment and materials storage sites will be located as far away from residential and park uses as practicable. At the discretion of the Caltrans biologist, ESA fencing may be removed at times when construction is no longer active in the area.

PF-BIO-5: Wildlife Exclusion Fencing. Before ground-disturbing activities commence, high-visibility wildlife exclusion fencing (WEF) (suitable for amphibian

and small mammal exclusion) would be installed along ESA/ground-disturbance boundaries to protect sensitive wildlife and to keep them from entering the work site. The final Project plans and specifications in the bid solicitation package would depict the locations WEF would be installed and specify acceptable fencing material and installation methods and prohibited construction-related activities in ESA. The WEF would be maintained as follows until ground-disturbing activities near the ESA are complete:

- Supports for the WEF would be placed on the inside of the work area to prevent wildlife from using them to climbing into the work area.
- The fence fabric would be at least 36 inches high.
- The fencing would be made of a heavy plastic sheeting material that is too smooth for salt marsh harvest mouse to climb.
- The toe of the fence fabric would be buried approximately 6 inches in the ground to prevent wildlife from crawling or burrowing underneath it.

PF-BIO-6: Fence and Signpost Caps. Fence or signposts would have the top of the post capped and/or the top three post holes covered or filled with screws or bolts to prevent the entrapment of wildlife, specifically birds of prey.

PF-BIO-7: Restore Disturbed Areas. Temporarily disturbed areas, including staging areas, would be restored to the maximum extent practicable. Construction-related materials would be removed. Exposed slopes and bare ground would be reseeded with native species to stabilize and prevent erosion.

PF-BIO-8: Invasive Weed Control. To reduce the spread of non-native, invasive plants, these species would be controlled within the Project footprint to the maximum extent practicable, in accordance with Caltrans' Highway Design Manual Topic 110.5, Control of Noxious Weeds – Exotic and Invasive Species, and Executive Order 13112, Invasive Species, and by methods approved by a Caltrans' landscape architect or vegetation control specialist. Vehicles and equipment would be thoroughly cleaned before arriving on the site to prevent the spread of noxious weeds from other locations. In work areas where California Department of Food and Agriculture listed noxious weeds or California Invasive Plant Council (Cal-IPC) Moderate- or High-rated weed species occur in fruit or flower and may be disturbed during construction-related activities, the contractor would be required to clear vegetation at the beginning of location disturbance, and contain the plant material associated with these noxious weeds, and dispose of them in a manner that will not promote the spread of the species. Areas subject to noxious weed removal or

disturbance will be replanted with fast growing native grasses or a native erosion control seed mixture.

PF-BIO-9: Construction Site Best Management Practices. The following site restrictions would be implemented to avoid or minimize potential effects on listed species and their habitats:

- **Speed Limit.** Vehicles would not exceed 15 miles per hour in unpaved areas of the Project footprint, to reduce dust and excessive soil disturbance.
- **Trash Control.** Food and food-related trash items would be secured in sealed trash containers and removed from the site at the end of each day.
- **Pets.** Pets would be prohibited from entering the Project limits during construction.
- **Firearms.** Firearms would be prohibited within the Project limits, except for those carried by authorized security personnel or local, state, or federal law enforcement officials.

PF-BIO-10: Vegetation Removal. Native vegetation would be cleared only when necessary and would be cut above soil level except in areas that would be excavated. Pre-construction and bird nesting surveys would be conducted prior to removal of vegetation. If active nests are found, then an appropriate buffer would be established, and the nest would be monitored for compliance with the Migratory Bird Treaty Act and Fish and Game Code Section 3503.

During vegetation removal in potential salt marsh harvest mouse habitat, the agency-approved biologist would inspect areas to be cleared immediately prior to vegetation removal and would monitor the vegetation removal process. Herbaceous vegetation would be removed from impact areas to eliminate cover for salt marsh harvest mice, thereby discouraging them from entering impact areas. Vegetation removal would start at the road shoulder and proceed away from the work area and toward contiguous areas of suitable habitat to allow any salt marsh harvest mice in the exclusion area to passively relocate into adjacent habitat. Vegetation would not be removed during a flooding event that inundates the marsh because these are the conditions in which salt marsh harvest mice are most likely to be present in the biological study area (BSA). Initial removal of pickleweed, salt-grass, and other vegetation in the marked areas would be done using hand tools exclusively. This would allow any small mammals, including salt marsh harvest mice, to escape the BSA under the cover of vegetation, and would encourage movement of such small mammals toward available vegetated habitat outside the BSA. All herbaceous

vegetation that could potentially conceal a salt marsh harvest mouse within the BSA would be removed. All vegetation that is removed would be hauled offsite the day it is removed and would not be left on the site to provide potential cover for small mammal species.

PF-BIO-11: Construction Lighting and Signage. Construction area lighting would be used only where necessary for safety and signage. Downcast lighting and shielding to minimize artificial lighting of natural areas would be used throughout the Project footprint.

PF-BIO-12: Cover Staged Materials. Culverts, pipes, hoses, and similar structures less than 12 inches in diameter would be closed, covered or capped to prevent animal entry upon arrival to the Project site. Culverts, pipes, hoses, and similar structures would be inspected for wildlife before it is buried, capped, used, or moved.

PF-BIO-13: Nesting Bird Protection. During the bird nesting season (February 1 to September 30), an agency-approved biologist would conduct pre-construction surveys for active bird nests no more than 3 days before the start of ground or vegetation disturbance events and every 14 days during Project activities.

Tree and/or shrub trimming would be conducted outside of bird nesting season unless monitoring results show no active nesting is taking place as discussed for the following buffer zones.

If an active nest is identified during construction that may be impacted by Project activities, a no-disturbance buffer of 300 feet for raptors and 50 feet for non-raptors would be established immediately and the agency-approved biologist would be notified so that the nest can be monitored. A reduced or enlarged buffer and other protection measures would be implemented as needed and in consultation with the appropriate wildlife agency.

PF-BIO-14: Worker Environmental Awareness Training. Before the onset of construction, an agency-approved biologist would conduct training for all construction personnel. At a minimum, the training would include the following:

- A description of all special-status species and their habitats
- The potential occurrence of these species in the job sites
- An explanation of the status of these species and protection under the federal Endangered Species Act, California Endangered Species Act, and all other federal, state, and local regulatory requirements

- The measures to be implemented to conserve listed species and their habitats as they relate to the work site
- Boundaries within which construction may occur

A fact sheet conveying this information would be prepared and distributed to all construction crews and project personnel entering the project footprint. Upon completion of the program, personnel would sign a form stating that they attended the program and understand all AMMs and implications of the federal Endangered Species Act, California Endangered Species Act, and all other federal, state, and local regulatory requirements.

PF-BIO-15: Prohibition of Monofilament Netting. Erosion control materials (i.e., wattles, matting, and blankets) will not contain plastic monofilament netting that could entrap or harm wildlife. Acceptable substitutes would include coconut coir matting or tackifying hydroseeding compounds.

PF-BIO-16: Discovery of Injured or Dead Special-Status Species. Immediately upon discovery of any dead, or injured, or species regulated by USFWS, National Marine Fisheries Service (NMFS), or CDFW, Caltrans would provide appropriate notifications to the agency(s) with jurisdiction. Storage and transport to the nearest wildlife care facility may be necessary in direct coordination with agencies.

PF-BIO-17: Wildlife Species Relocation. If wildlife is encountered during construction, all work in the vicinity that could result in the injury or death of the wildlife would be stopped immediately and it would be allowed to leave the job site unharmed. If it is determined that they could be injured or killed by construction activities, the agency-approved biologist, in coordination with Caltrans and the appropriate state and federal wildlife agencies, would identify appropriate methods for capture, handling, exclusion, and relocation of individuals that could be affected. The agency-approved biologist, with appropriate handling permits or licenses from state and/or federal wildlife protection agencies as required, would do the following:

- Conduct, monitor, and supervise all capture, handling, exclusion, and relocation activities
- Ensure that sufficient personnel are available for safe and efficient collection of the wildlife
- Ensure that proper training and any required permitting or licensing is current for personnel identifying, handling, and conducting safe capture of listed species

Where listed species cannot be captured, handled, excluded, or relocated, actions that could injure or kill individuals would be avoided or delayed until the species leaves the affected area.

PF-BIO-18: Aquatic Species Relocation. Aquatic species relocation will occur within Union Creek prior to and during dewatering efforts. An aquatic species relocation plan will be developed and submitted to the agencies for approval prior to dewatering occurring.

PF-CULT-1: Discovery of Cultural Resources. If previously unidentified cultural resources are unearthed during construction, work would be halted in that area until a qualified archaeologist can assess the significance of the discovery.

PF-CULT-2: Discovery of Human Remains. If remains are discovered during dredging activities, all work within 60 feet of the discovery would halt and Caltrans Cultural Studies Office would be called. Caltrans Cultural Studies Office Staff would assess the remains and, if they are determined to be human, would contact the County Coroner, per Public Resources Code, 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, then the coroner would contact the Native American Heritage Commission, which would assign a Most Likely Descendant. Caltrans would consult with the Most Likely Descendant on treatment and reburial of the remains. Further provisions of Public Resources Code, Section 5097.98 would be followed as applicable.

PF-Energy-1: Minimize Energy Consumption from Construction Activities. Energy consumption from construction activities would be minimized by the use of construction BMPs, including, but not limited to the following:

- Limit idling of vehicles and equipment.
- Use solar power as a power source, if feasible.
- Ensure regular maintenance of construction vehicles and equipment.
- If feasible, recycle nonhazardous waste and excess materials to reduce disposal offsite.

PF-GHG-1: Energy Reduction. Solar energy would be used to reduce the use of non-renewable energy during construction.

PF-HAZ-1: Caltrans Standard Specifications and Hazardous Waste

Regulations. The current Caltrans Standard Specifications Section 13-4, Job Site Management, would be implemented to prevent and control spills or leaks from construction equipment and from storage of fuels, paints, cleaners, solvents, and lubricants. All aspects of the Project associated with transport, storage, use, and disposal of hazardous materials would be done in accordance with the California Health and Safety Code and the appropriate local, state, and federal hazardous waste regulations. Handling and management of hazardous materials would comply with the current Caltrans Standard Specification Section 14-11, Hazardous Waste and Contamination, which outlines handling, storing, and disposing of hazardous waste.

PF-HAZ-2: Site Investigation and Bridge Survey. During the Project's Design phase, a site investigation (primarily for lead) that helps to characterize and profile the surplus excavated soils to be generated by the proposed roadway shoulders widening would be planned and conducted. In addition, a bridge survey that ascertains the presence or absence of asbestos-containing material in the bridge concrete to be disturbed by the bridge widening would also be conducted. Depending on the findings of the site investigation and bridge survey, appropriate hazard mitigation and waste management special provisions would be prepared and included in the Project specifications.

PF-WQ-1: Stormwater Pollution Prevention Plan. To comply with the CGP, the Project contractor is required to implement a SWPPP containing BMPs for stormwater pollution control. The SWPPP would be prepared by the contractor and approved by Caltrans and would detail the implementation of temporary construction site BMPs during all phases of construction to avoid or minimize sediment or other pollutions effects to surface water, groundwater, or domestic water supplies. The SWPPP would include erosion control BMPs implemented to minimize wind- or water-related stormwater pollutions on the construction site. These prevention measures would also fulfill the requirements of the San Francisco Regional Water Quality Control Board (RWQCB). The Caltrans BMP Guidance Handbook would provide the design staff with guidance for including appropriate provisions in the construction contract that would prevent or minimize stormwater and non-stormwater discharges and protect sensitive areas. At a minimum, protective measures would include the following:

- Any discharging of pollutants from vehicle and equipment cleaning into any storm drains or watercourses would be disallowed.

- Vehicle and equipment fueling and maintenance operations would be kept at least 50 feet away from watercourses, except at established commercial gas stations or an established vehicle maintenance facility.
- All grindings and asphaltic-concrete waste would be stored within previously disturbed areas absent of habitat and at a minimum of 50 feet from any downstream riparian habitat, aquatic habitat, culvert, or drainage feature.
- Dedicated fueling and refueling practices would be designated as part of the approved SWPPP. Dedicated fueling areas would be protected from stormwater runoff and be located at least 50 feet from downslope drainage facilities and water courses.
- Fueling must be performed on level-grade areas. Onsite fueling would only be used when and where sending vehicles and equipment offsite for fueling is impractical. When fueling must occur onsite, the contractor would designate an area to be used subject to the approval of the resident engineer representing Caltrans. Drip pans or absorbent pads would be used during onsite vehicle and equipment fueling.
- Spill containment kits would be maintained onsite at all times during construction operations and/or staging or fueling of equipment.
- Dust control measures would be implemented. These would consist of regular truck watering of construction access areas and disturbed soil areas, including the use of organic soil stabilizers, if required, to minimize airborne dust and soil particles generated from graded areas. For disturbed soil areas, the use of tackifier to control dust emissions blowing off of the ROW or out of the construction area during construction would be included in the construction contract. Watering guidelines would be established to avoid any excessive runoff that may flow into contiguous areas. Any material stockpiles would be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion. All of these efforts would be consistent with the RWQCB or approved SWPPP. Dust control would be addressed during the environmental education session.
- Coir rolls or straw wattles would be installed along or at the base of slopes during construction to capture sediment.
- Graded areas would be protected from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas.

PF-WQ-2: Construction Site BMPs. To prevent or reduce impacts to water quality during construction, construction site BMPs would be deployed for sediment control and material management. These include the following:

- **Job Site Management:** This non-stormwater discharge and waste management practice includes considerations for operations, illicit discharge detention and reporting, vehicle and equipment cleaning, vehicle and equipment fueling, and material use.
- **Temporary Fiber Rolls:** A fiber roll consists of straw or other similar materials placed on the face of the slopes at regular intervals to intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff.
- **Silt Fence:** A silt fence is a temporary linear sediment barrier of permeable fabric designed to intercept and slow the flow of sediment-laden sheet flow runoff. Silt fences allow sediment to settle from runoff before water leaves the construction site. Silt fences are placed below the toe of exposed and erodible slopes, downslope of exposed soil areas, around temporary stockpiles and along streams and channels. Silt fences should not be used to divert flow or in streams, channels, or anywhere flow is concentrated.
- **Drainage Inlet Protection:** Drainage inlet protection is a practice to reduce sediment from stormwater runoff discharging from the construction site prior to entering the storm drainage system. Effective drainage inlet protection allows sediment to settle out of stormwater or filters sediment from the stormwater before it enters the drain inlet. Drainage inlet protection is the last line of sediment control defense prior to stormwater leaving the construction site.
- **Portable Concrete Washout:** This waste management BMP contains procedures and practices that would minimize or eliminate the discharge of concrete waste materials to the storm drain systems or watercourses.
- **Temporary Cover:** This BMP involves the placement of geosynthetic fabrics (geotextiles), plastic covers, or erosion control blankets/mats to stabilize the disturbed soil area and protect soil from erosion by wind or water.
- **Stockpile Management:** This BMP consists of procedures and practices to eliminate pollution of stormwater from stockpiles of soil and paving materials (such as concrete rubble, aggregate, and AC). These procedures include locating stockpiles away from drainages, and providing perimeter sediment barriers, soil stabilization, and wind erosion control measures.

- **Solid Waste Management:** This BMP consists of procedures and practices to minimize or eliminate the discharge of pollutants to storm drain systems or watercourses as a result of creation, stockpiling, or removal of construction site wastes. Measures include education as well as collection, storage, and disposal practices (such as plywood and tarp directly on streambed).
- **Stream Diversion System:** The system consists of upstream and downstream berms, with a pipe conveying runoff to create a dry working environment for temporary access. The system would be required at specific culvert locations and used during the summer months for one or both summers of the construction period. Each stream diversion system would be removed immediately after in-stream work is completed at the location, and would not be left in place during the wet season (typically beginning October 15). A risk analysis would be done to determine the design flow for the stream diversion system.

PF-WQ-3: Permanent Treatment BMPs. Permanent treatment BMPs are as follows:

- **Design Pollution Prevention BMP Strategy:** The goal of an effective erosion control strategy is to maintain the natural pre-construction conditions. Existing vegetation would be preserved to the maximum extent practicable, and areas disturbed by construction activities would be minimized using construction site BMPs. Preservation involves the identification and protection of desirable vegetation to provide erosion and sediment control benefits. No slopes would be steeper than a 2:1 ratio. When slopes steeper than 2:1 are required, a geotechnical recommendation would be required to support the steeper slope. Disturbed soil areas created by construction activities would receive erosion control treatments sufficient to address the erosion potential of the slope. Permanent design pollution prevention measures would be identified during later Project phases and may include decompaction, compost mulch, fiber rolls, coir netting, and hydroseed/hydromulch.
- **Treatment BMP Strategy:** Treatment BMPs would address the post-construction water quality impacts and remove pollutants from stormwater runoff before discharging to receiving waters. The locations of the treatment BMPs would be determined during later Project phases.

PF-NOI-1: Idling of Internal Combustion Engines. Unnecessary idling of internal combustion engines would be avoided within 100 feet of sensitive receptors.

PF-NOI-2: Maintaining Internal Combustion Engines. All internal combustion engines would be maintained properly to minimize noise generation. Internal

combustion engine driven equipment must be equipped with manufacturer recommended intake and exhaust mufflers that are in good condition and appropriate for the equipment.

PF-NOI-3: Quiet Air Compressors. The Project would use quiet air compressors and other quiet equipment where such technology exists.

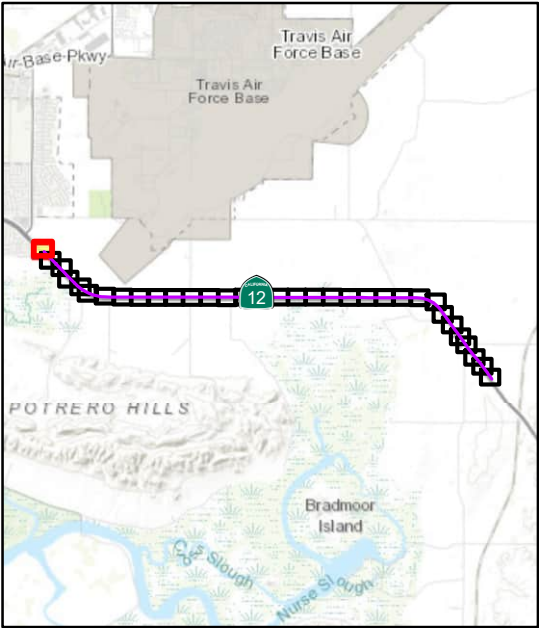
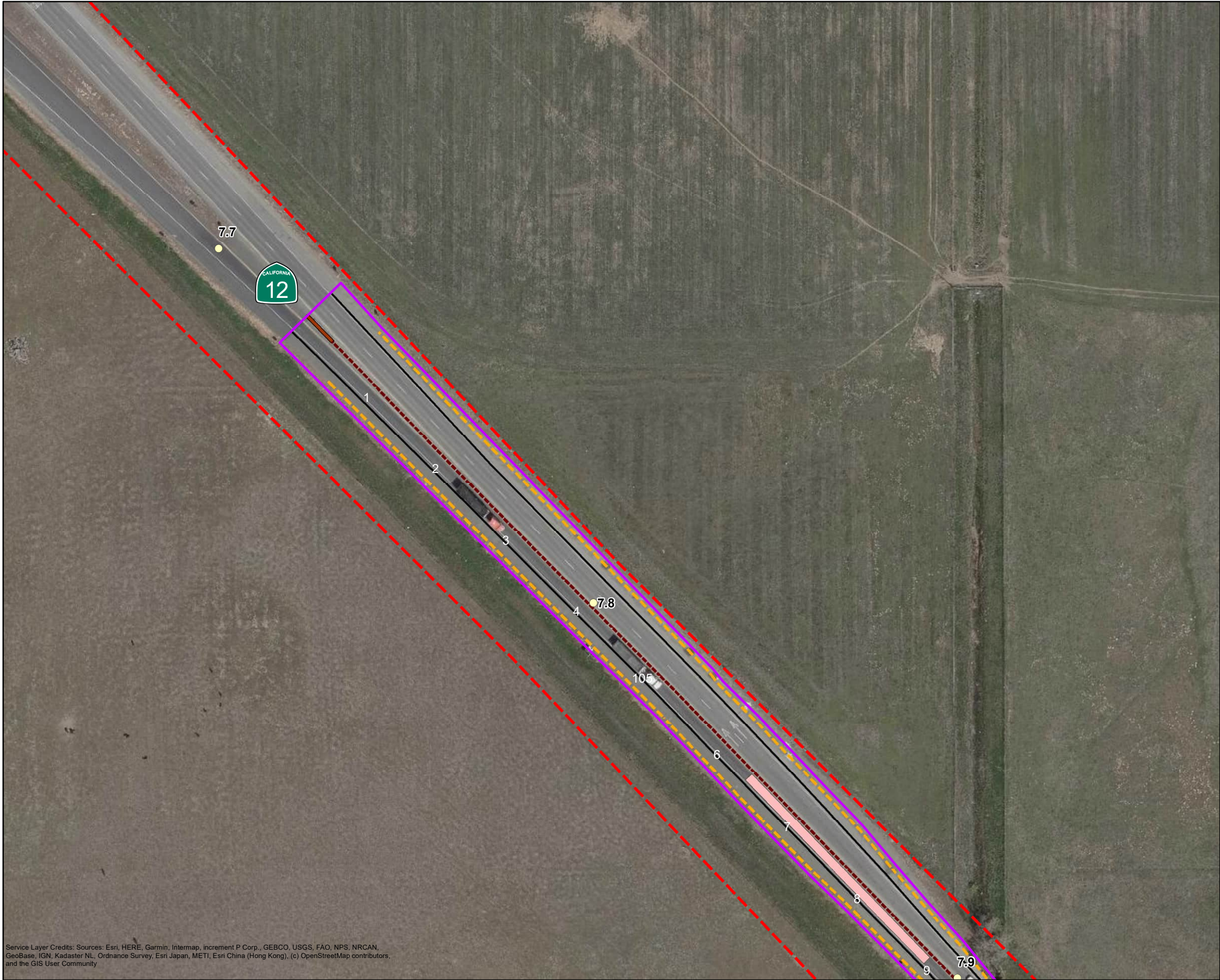
PF-NOI-4: Construction Schedule. Construction activities would mostly occur during the day, between 6 a.m. and 9 p.m. Noisy operations would be scheduled to occur within the same time period to the greatest extent possible. The total noise level would not be significantly greater than the level produced if operations are performed separately. Some nighttime construction would occur and would adhere to Caltrans Standard Specification 14-8.02.

PF-TRA-1: Traffic Management Plan. A Traffic Management Plan (TMP) would be developed by Caltrans during the design phase. The TMP would include public information, motorist information, incident management, construction, and alternate routes. In addition, one-way traffic control, lane closures, flaggers and phasing, portable changeable message signs, flaggers and the California Highway Patrol's Construction Zone Enhanced Enforcement Program would be incorporated into the TMP to minimize delays to local residents and highway users, as feasible. The TMP would also provide access for police and emergency service providers. Lane closures would be planned in coordination with Caltrans and Solano County and would include notices to emergency services providers, and the public in advance.

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 by the contractor at least once daily from the Project limits. A trash reduction system would also be developed by the contractor, approved by Caltrans, and implemented per Caltrans Statewide National Pollutant Discharge Elimination System Permit and San Francisco RWQCB Cease and Desist Order.

PF-UTIL-2: Treated Wood Waste. Wood removed from metal beam guardrails would be considered treated wood waste and disposed of by the contractor pursuant to Caltrans Standard Specifications.

PF-UTIL-3: Notify Utility Owners of Construction Schedule. Caltrans would notify utility companies of construction schedules for proposed Project work to minimize potential disruption of utility service.

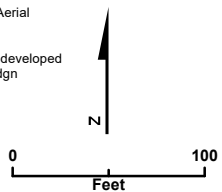


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

Solano County 2021 Aerial
Photography

Project Footprint was developed
from Master_Design.dgn
provided by Caltrans



Project Elements Mapbook

Map 01 of 33

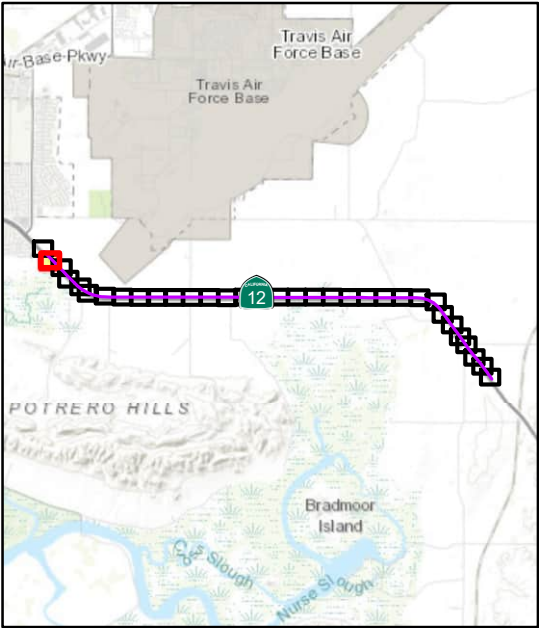
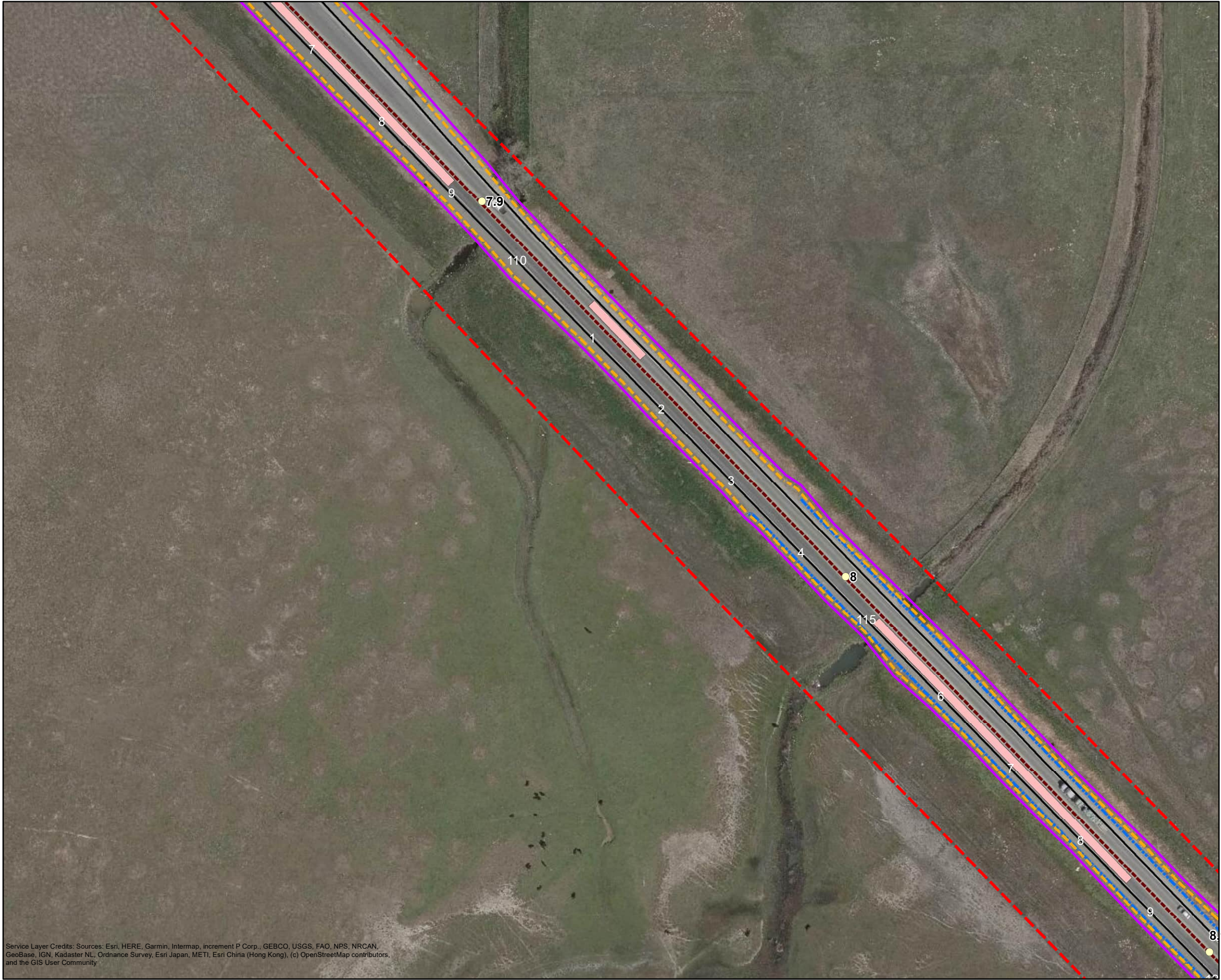
State Route 12

Major Pavement Rehabilitation Project

EA 04-2Q550, SOL-12-PM 7.7/14.1

Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

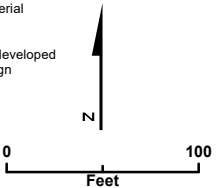


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

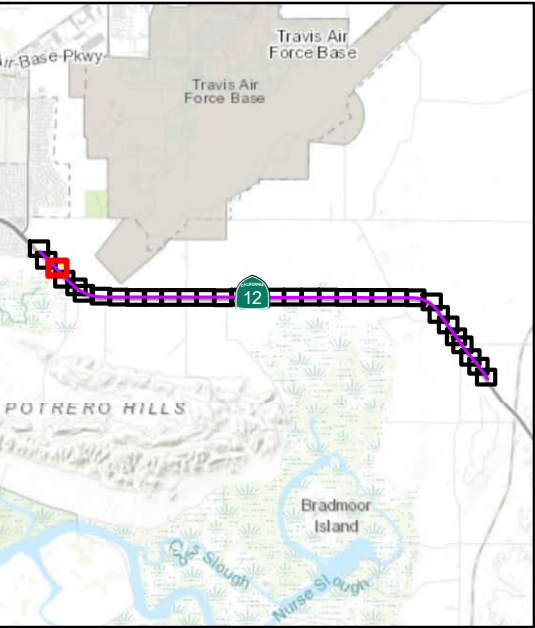
Solano County 2021 Aerial Photography

Project Footprint was developed from Master_Design.dgn provided by Caltrans



Project Elements Mapbook
Map 02 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

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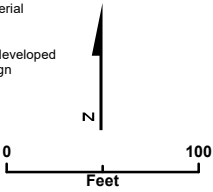


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Staging Area
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

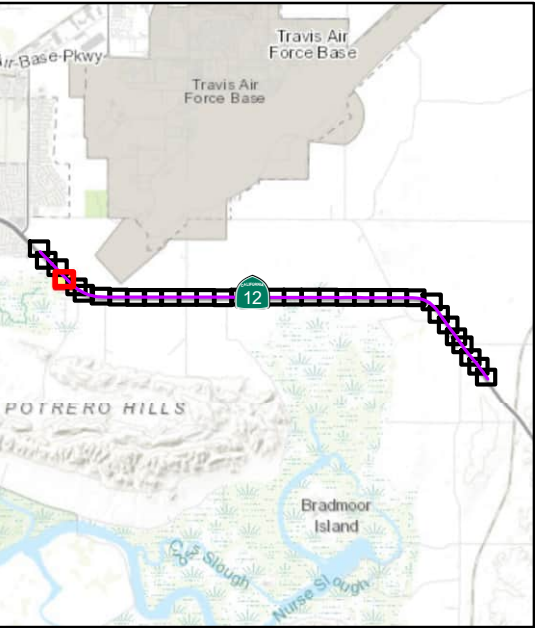
Solano County 2021 Aerial
Photography

Project Footprint was developed
from Master_Design.dgn
provided by Caltrans



Project Elements Mapbook
Map 03 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

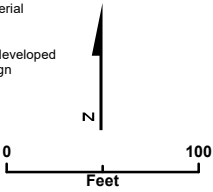


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Staging Area
- Cut and Fill Limits
- Replace 30" Concrete Culvert
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

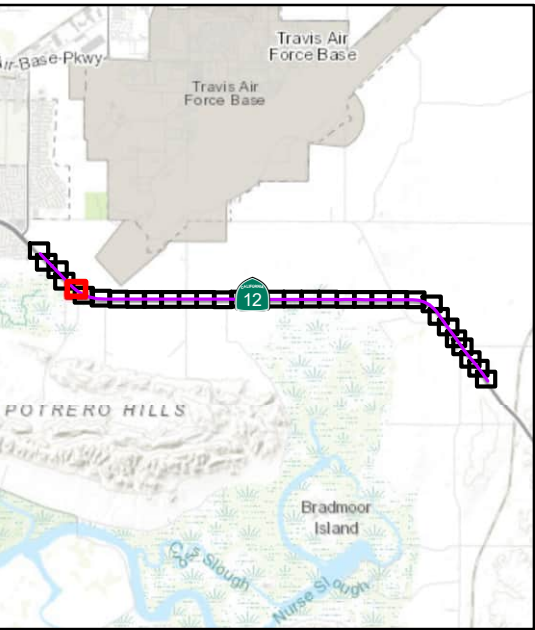
Solano County 2021 Aerial
Photography

Project Footprint was developed
from Master_Design.dgn
provided by Caltrans



Project Elements Mapbook
Map 04 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

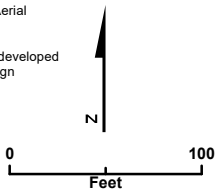


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Existing Bridge
- New Bridge
- Shoulder Widening
- Staging Area
- Temporary Construction Easement
- Vegetation Control
- Cut and Fill Limits
- Replace 30" Concrete Culvert
- Bridge Rails
- Midwest Guardrail System
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Shoulder Rumble Strip

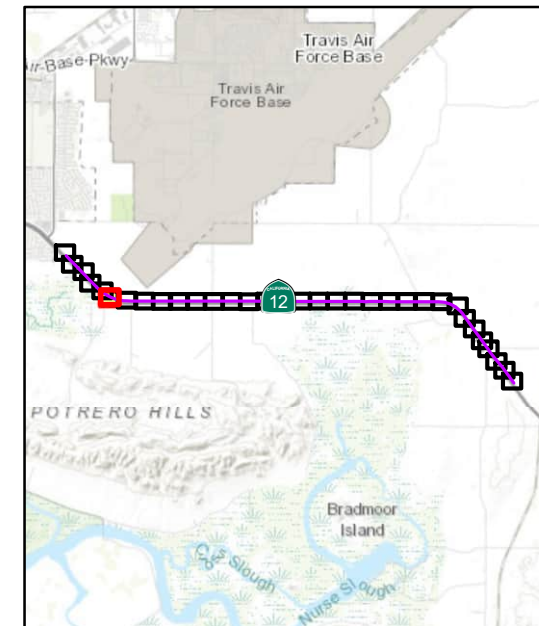
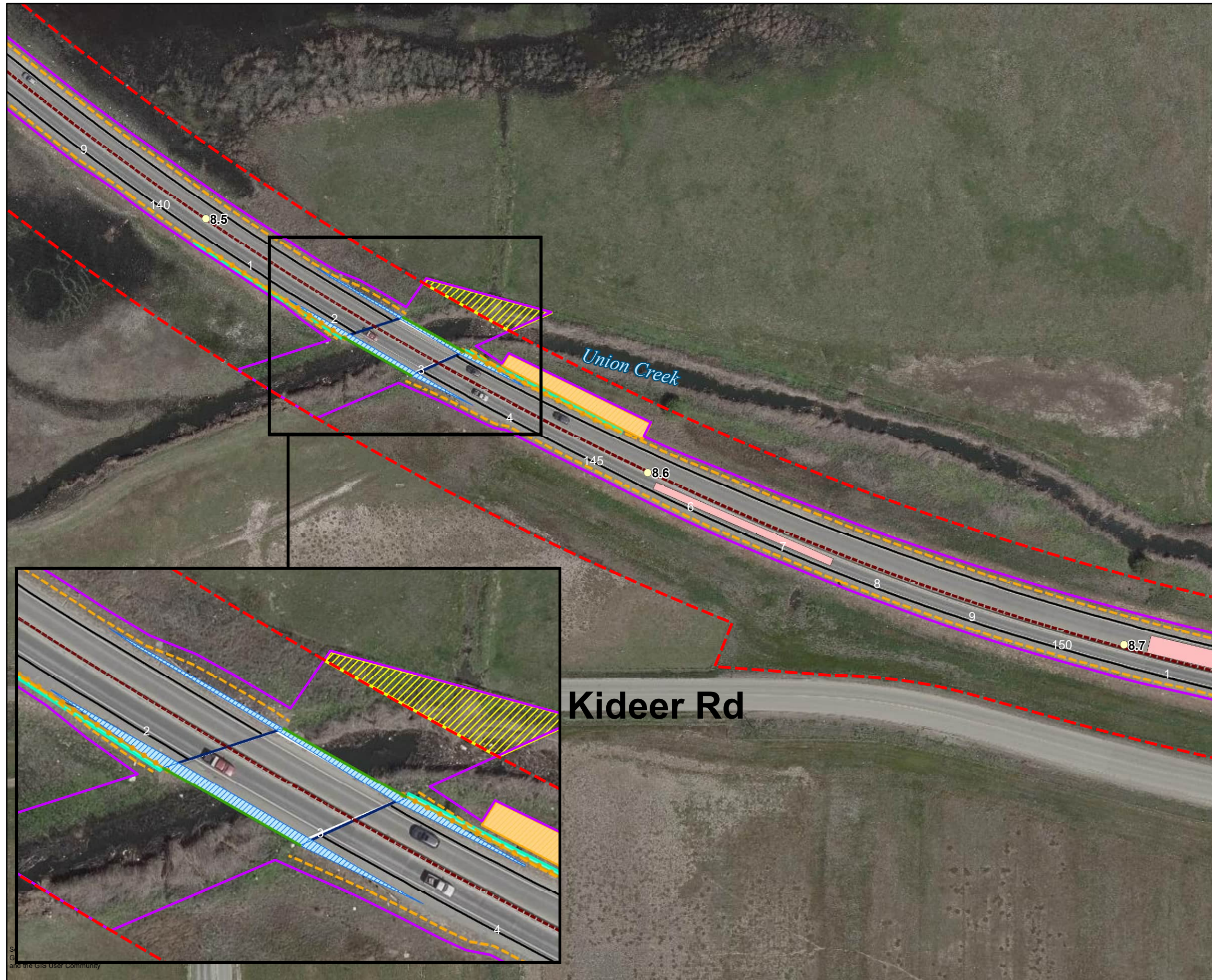
Solano County 2021 Aerial Photography

Project Footprint was developed from Master_Design.dgn provided by Caltrans



Project Elements Mapbook
Map 05 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, Mapbox, OpenStreetMap contributors, and the GIS User Community



LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Existing Bridge
- New Bridge
- Shoulder Widening
- Staging Area
- Temporary Construction Easement
- Vegetation Control
- Cut and Fill Limits
- Bridge Rails
- Midwest Guardrail System
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Shoulder Rumble Strip

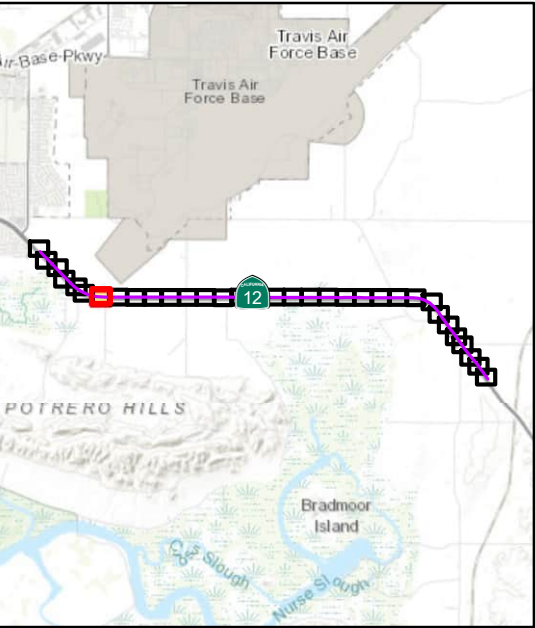
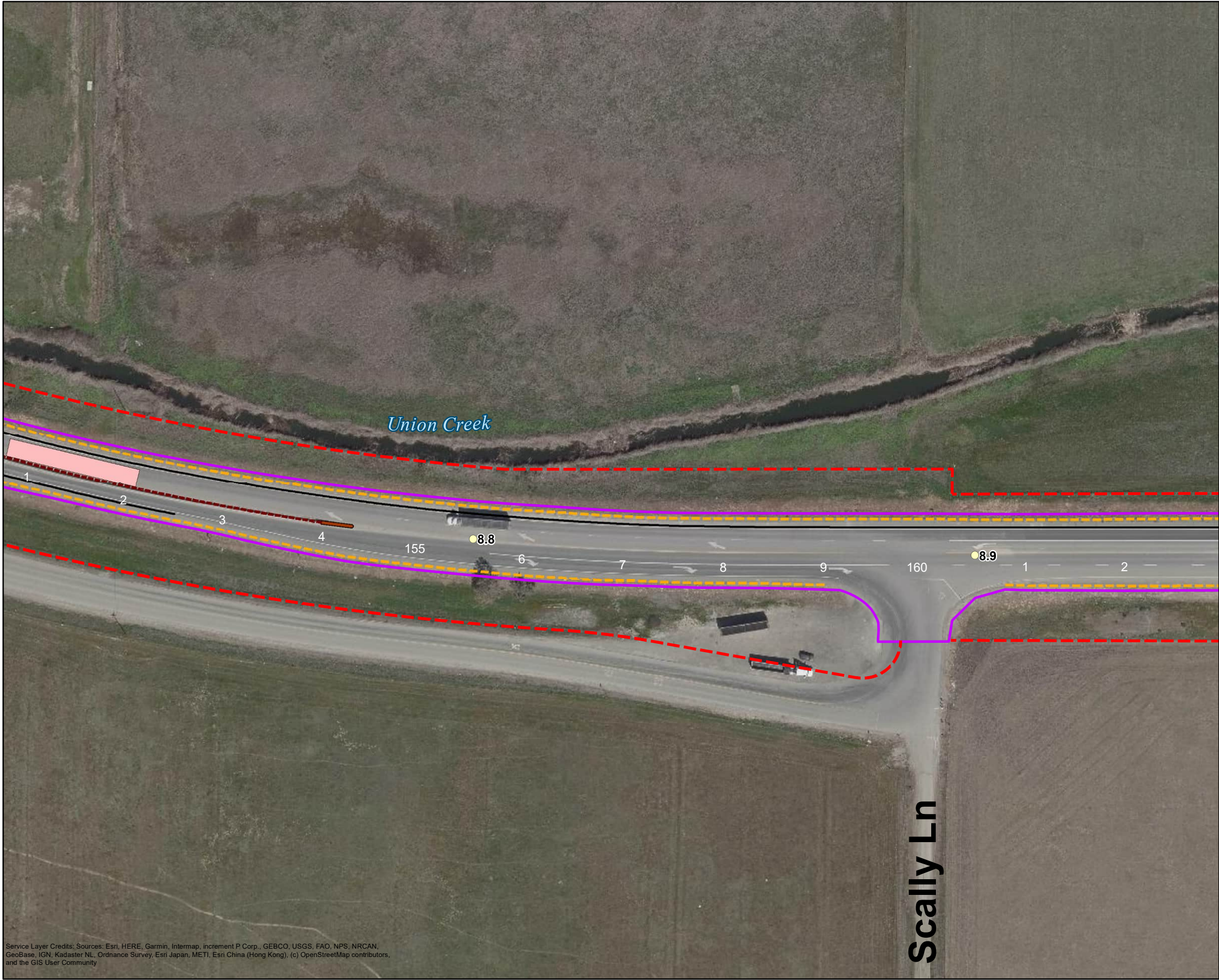
Solano County 2021 Aerial Photography

Project Footprint was developed from Master_Design.dgn provided by Caltrans

0 100 Feet

N

Project Elements Mapbook
Map 06 of 33
 State Route 12
 Major Pavement Rehabilitation Project
 EA 04-2Q550, SOL-12-PM 7.7/14.1
 Solano County, California

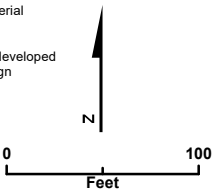


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

Solano County 2021 Aerial
Photography

Project Footprint was developed
from Master_Design.dgn
provided by Caltrans



Project Elements Mapbook

Map 07 of 33

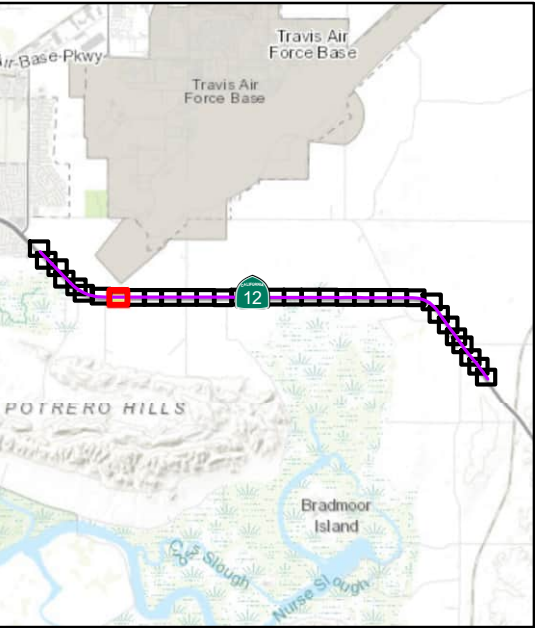
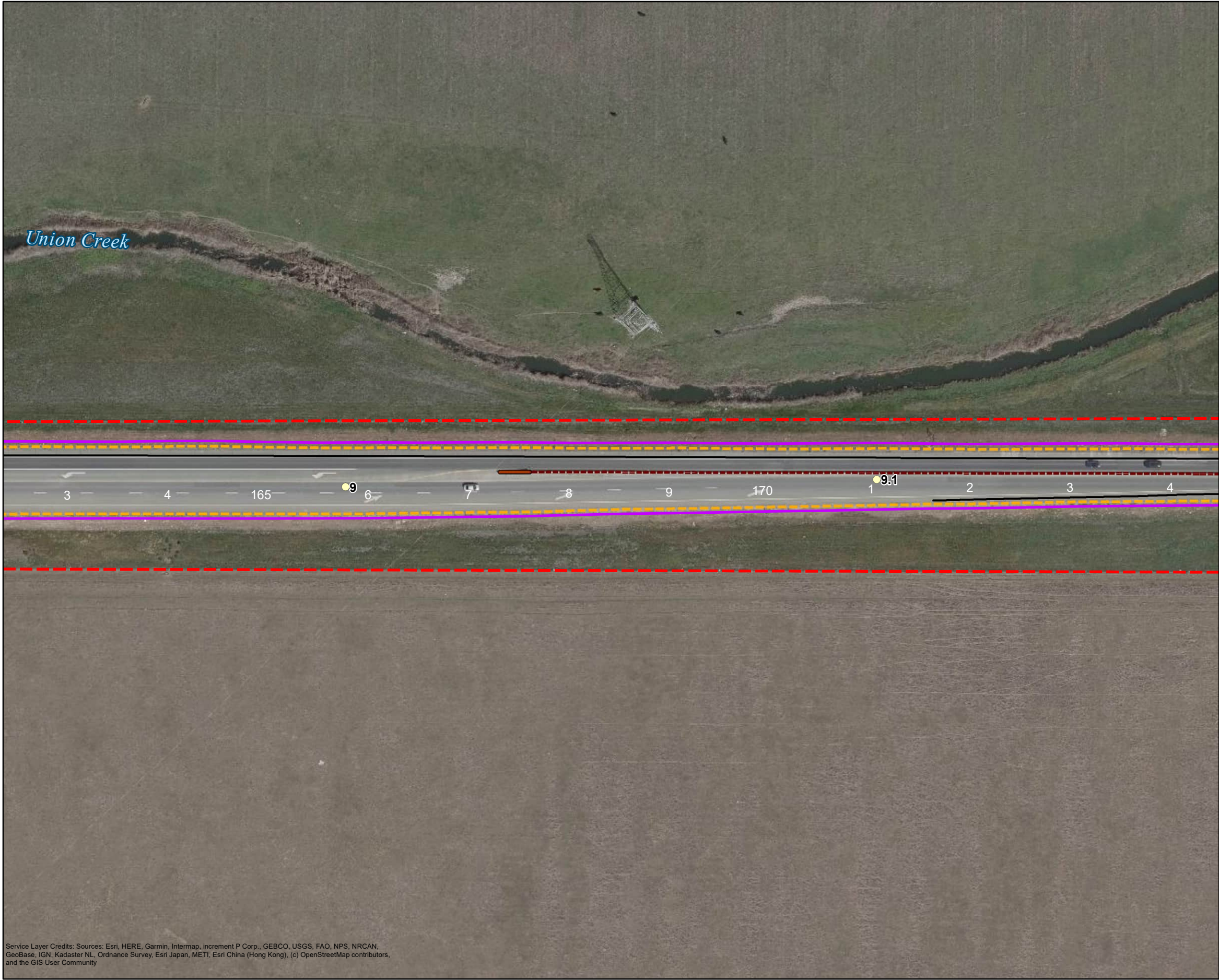
State Route 12

Major Pavement Rehabilitation Project

EA 04-2Q550, SOL-12-PM 7.7/14.1

Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



LEGEND

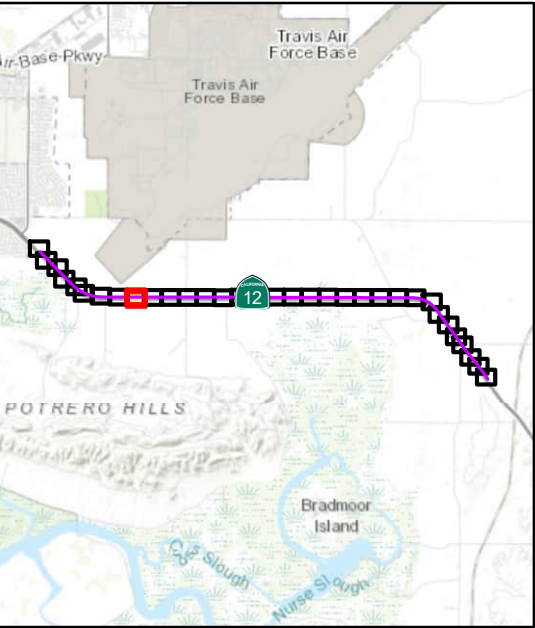
- Post Miles
- Caltrans Right of Way
- - - Project Footprint (51.04 acres)
- - - Cut and Fill Limits
- - - Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

Project Footprint was developed from Master_Design.dgn provided by Caltrans

Project Elements Mapbook
Map 08 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

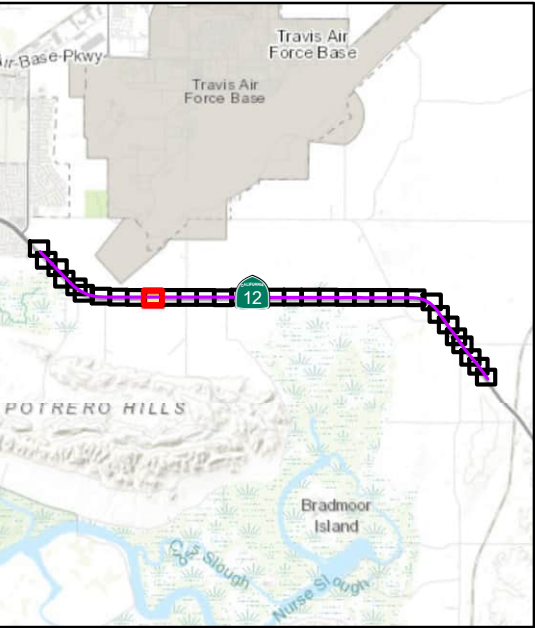
Project Footprint was developed from Master_Design.dgn provided by Caltrans

N

0 100 Feet

Project Elements Mapbook
Map 09 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



LEGEND

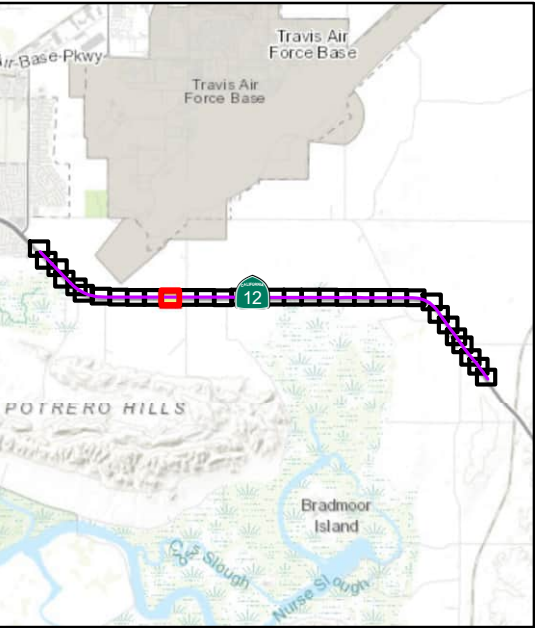
- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

Project Footprint was developed from Master_Design.dgn provided by Caltrans

Project Elements Mapbook
Map 10 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Rock Slope Protection
- Cut and Fill Limits
- Replace 10' Pipe
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

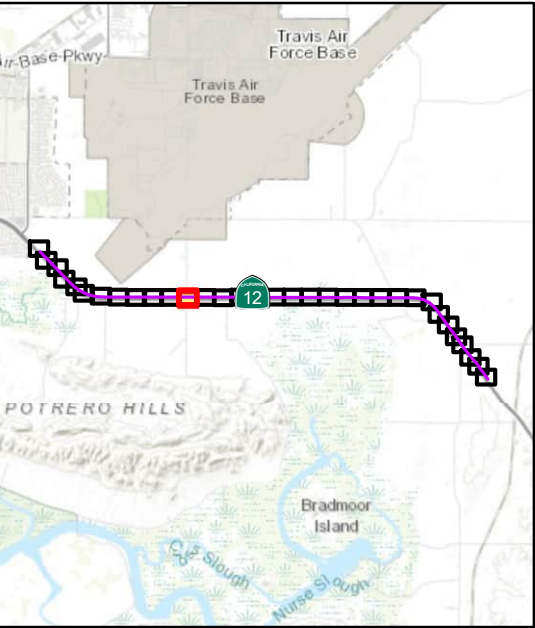
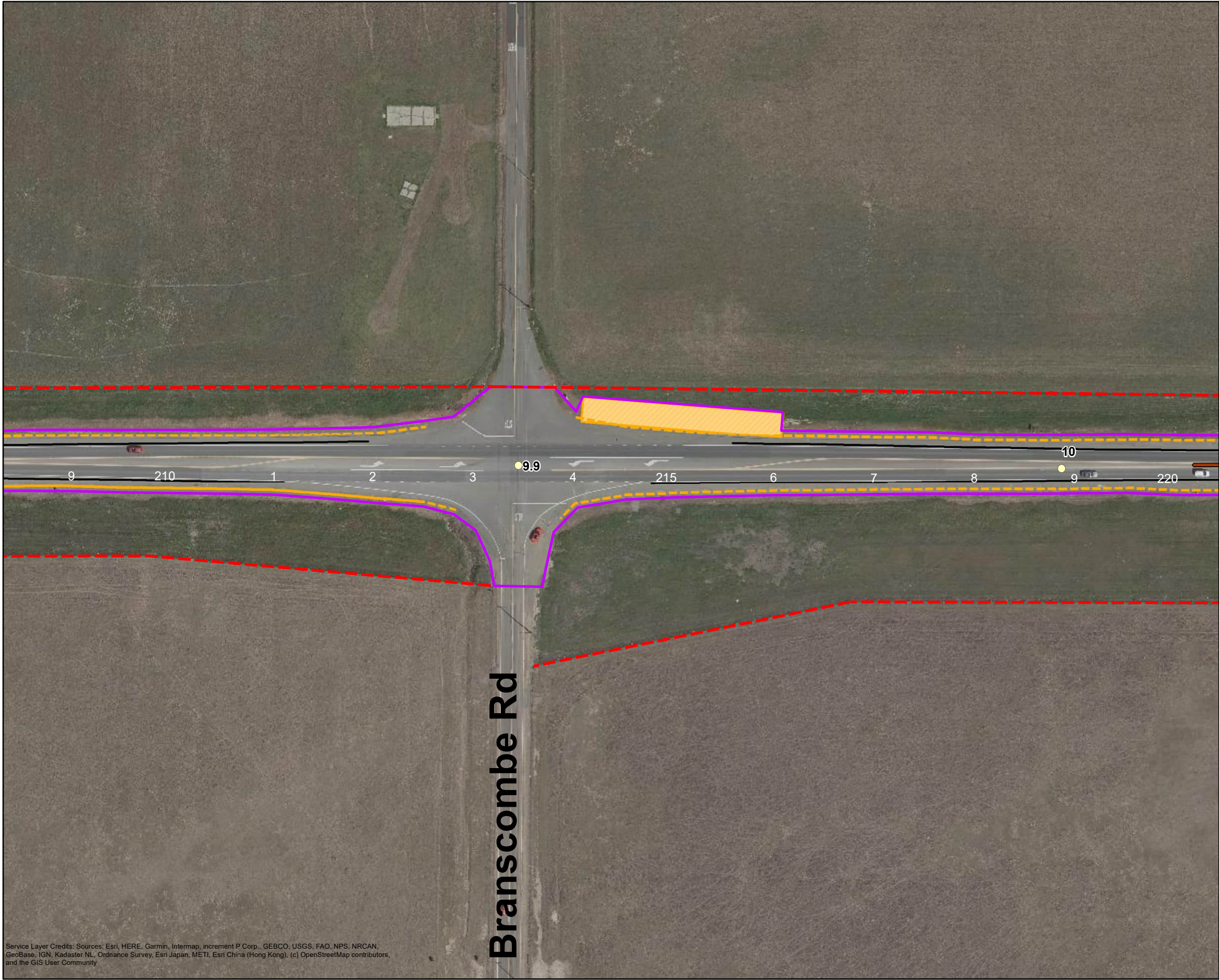
Project Footprint was developed from Master_Design.dgn provided by Caltrans

0 100 Feet

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Project Elements Mapbook
Map 11 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

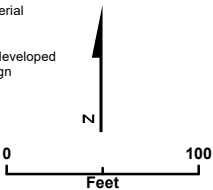


LEGEND

- Post Miles
- - - Caltrans Right of Way
- Project Footprint (51.04 acres)
- ▨ Staging Area
- - - Cut and Fill Limits
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

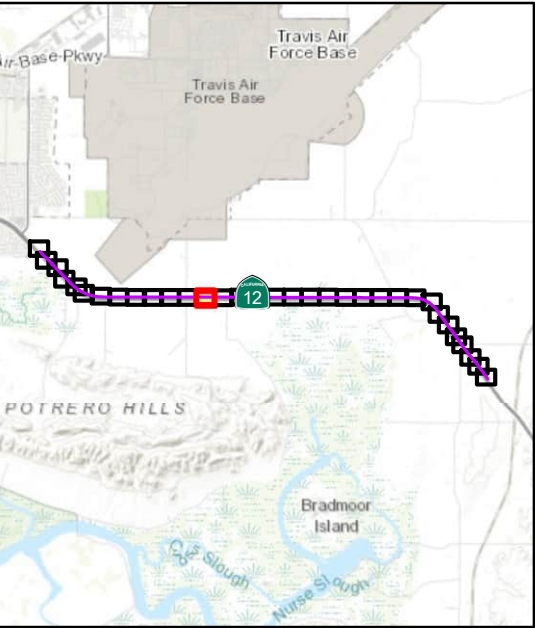
Solano County 2021 Aerial Photography

Project Footprint was developed from Master_Design.dgn provided by Caltrans



Project Elements Mapbook
Map 12 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

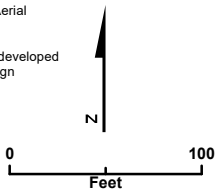


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Rock Slope Protection
- Cut and Fill Limits
- Replace 10' Pipe
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

Solano County 2021 Aerial
Photography

Project Footprint was developed
from Master_Design.dgn
provided by Caltrans



Project Elements Mapbook

Map 13 of 33

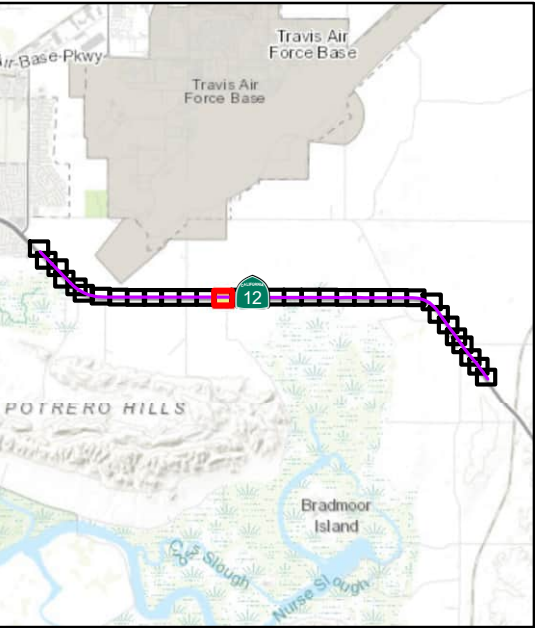
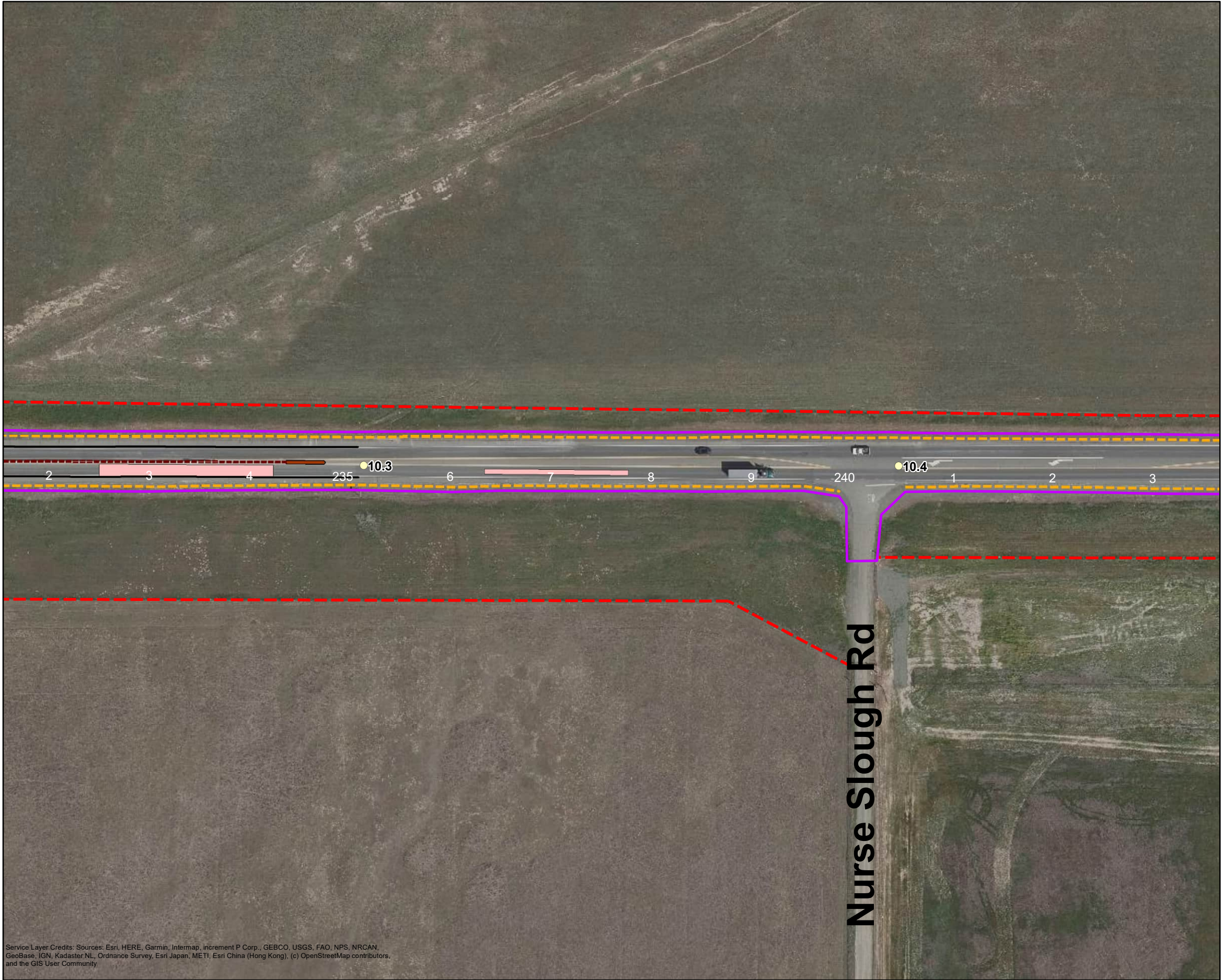
State Route 12

Major Pavement Rehabilitation Project

EA 04-2Q550, SOL-12-PM 7.7/14.1

Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

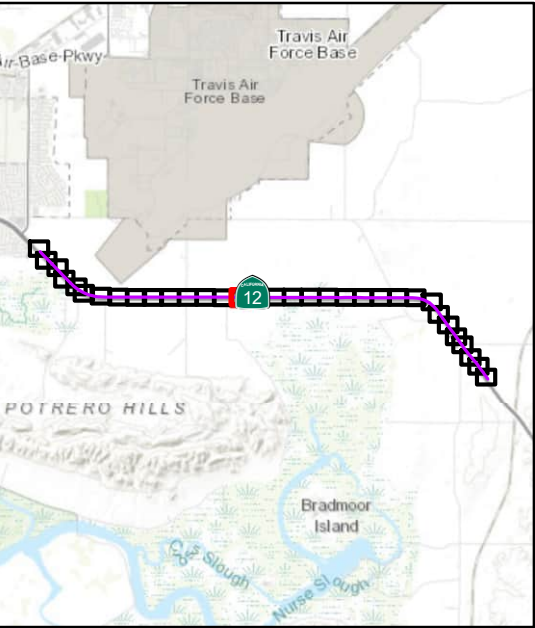
Project Footprint was developed from Master_Design.dgn provided by Caltrans

0 100 Feet

N

Project Elements Mapbook
Map 14 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

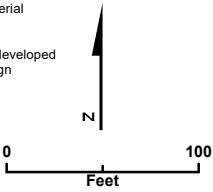


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

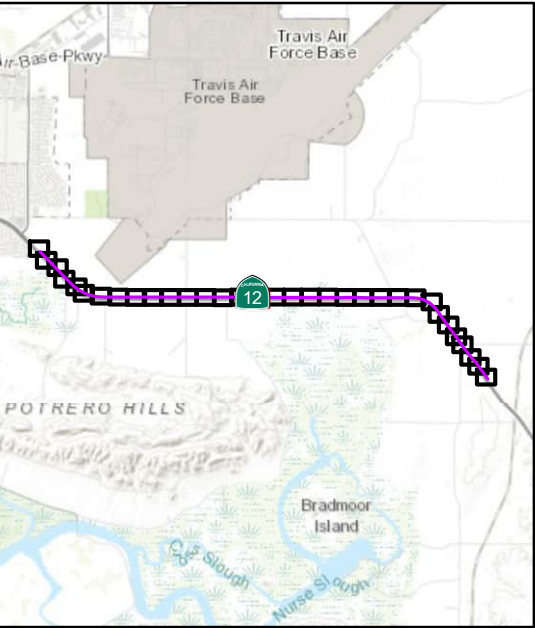
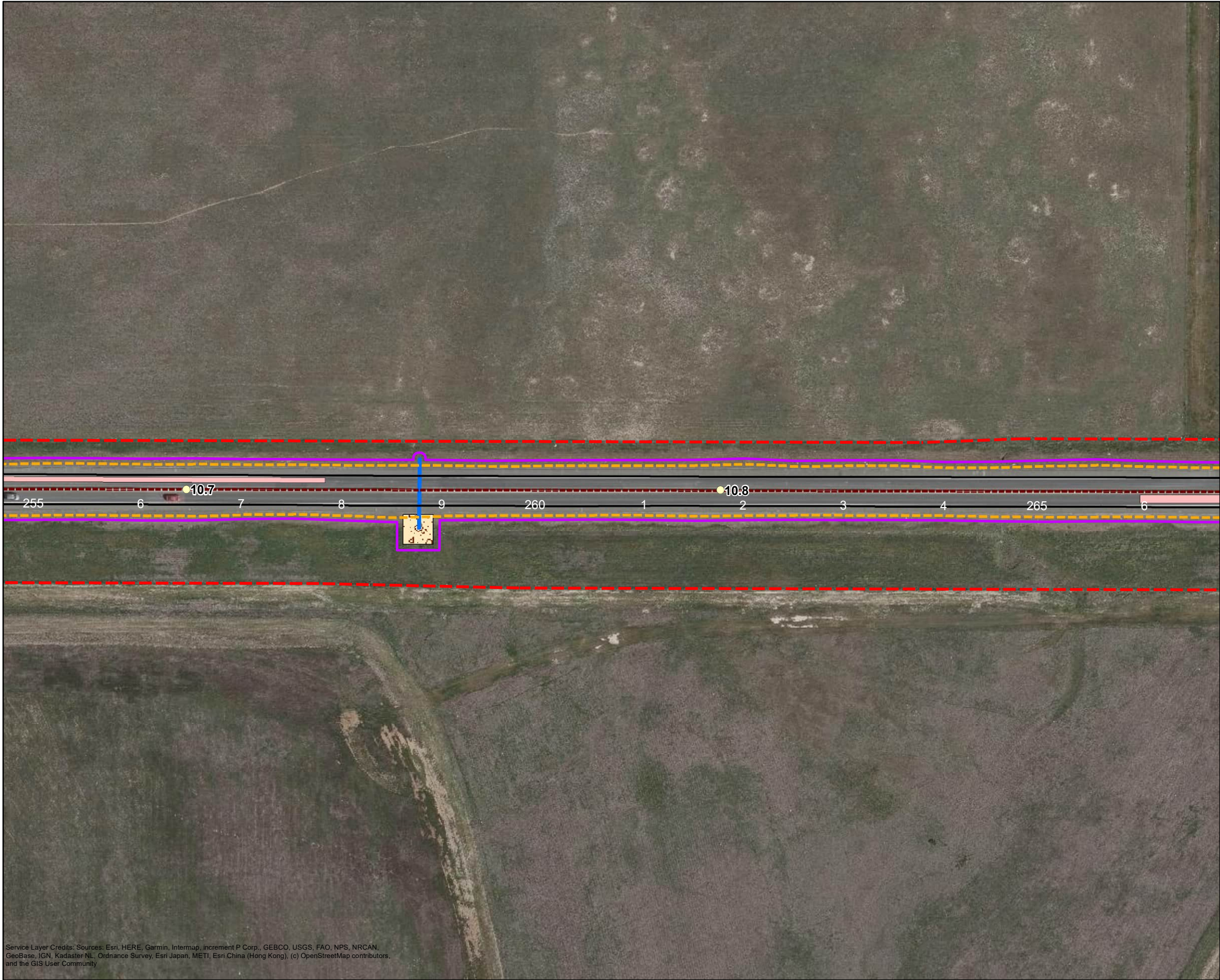
Solano County 2021 Aerial
Photography

Project Footprint was developed
from Master_Design.dgn
provided by Caltrans



Project Elements Mapbook
Map 15 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

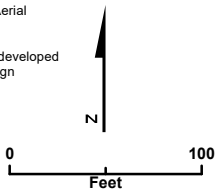


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Rock Slope Protection
- Cut and Fill Limits
- Replace 10' Pipe
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Shoulder Rumble Strip

Solano County 2021 Aerial
Photography

Project Footprint was developed
from Master_Design.dgn
provided by Caltrans



Project Elements Mapbook

Map 16 of 33

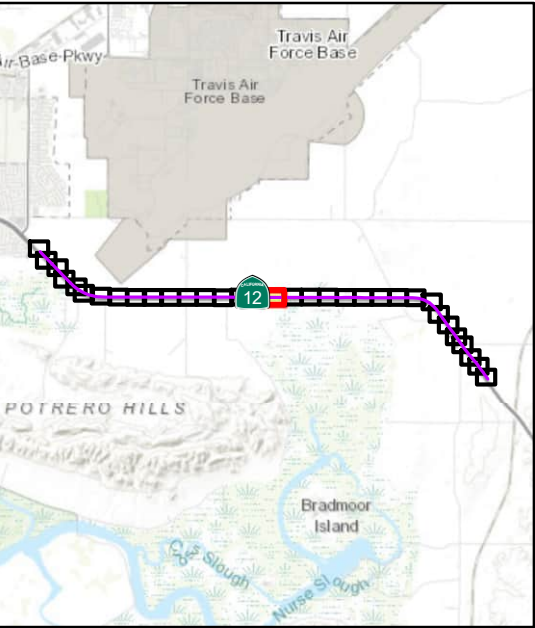
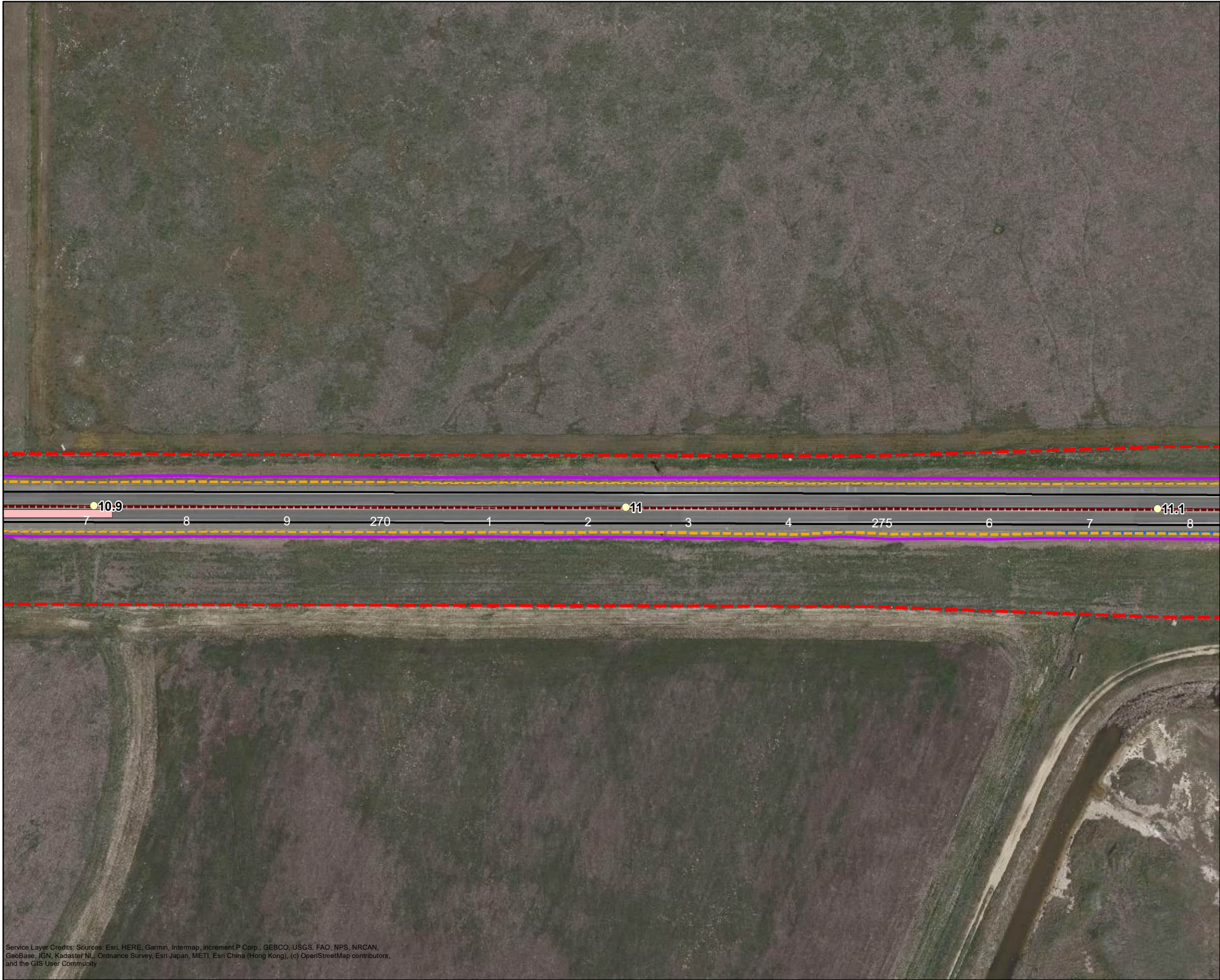
State Route 12

Major Pavement Rehabilitation Project

EA 04-2Q550, SOL-12-PM 7.7/14.1

Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

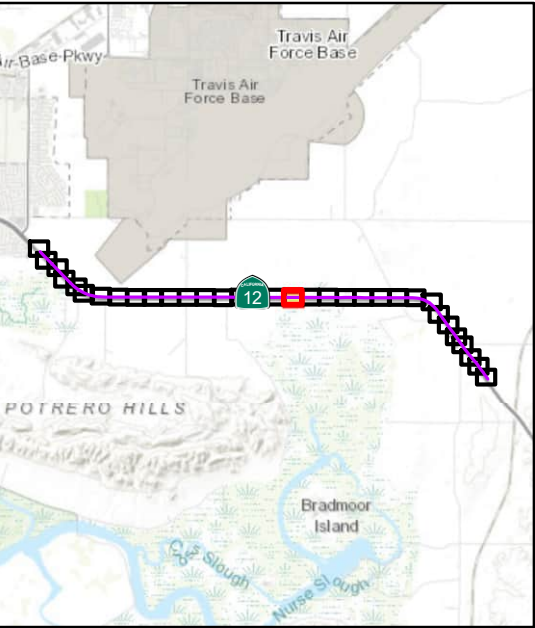
Project Footprint was developed from Master_Design.dgn provided by Caltrans

N

0 100 Feet

Project Elements Mapbook
Map 17 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

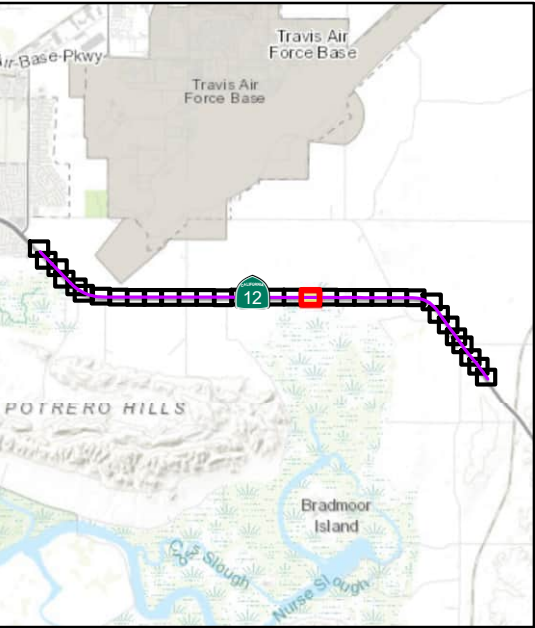
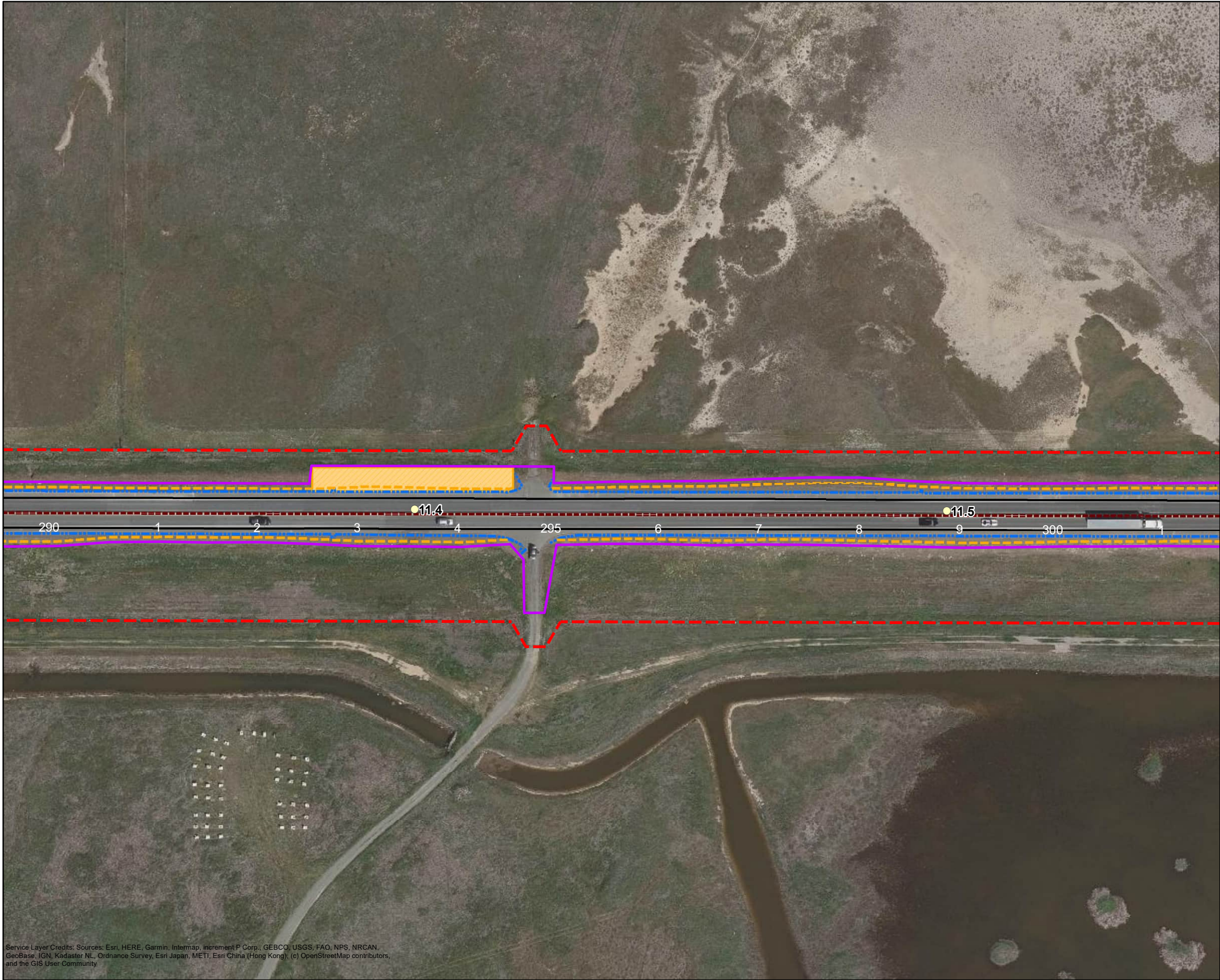
Project Footprint was developed from Master_Design.dgn provided by Caltrans

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0 100 Feet

Project Elements Mapbook
Map 18 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

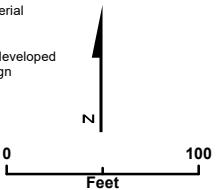
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- LEGEND**
- Post Miles
 - Caltrans Right of Way
 - Project Footprint (51.04 acres)
 - Staging Area
 - Cut and Fill Limits
 - Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
 - Remove HMA Dike. Install HMA Dike (Type E)
 - Shoulder Rumble Strip

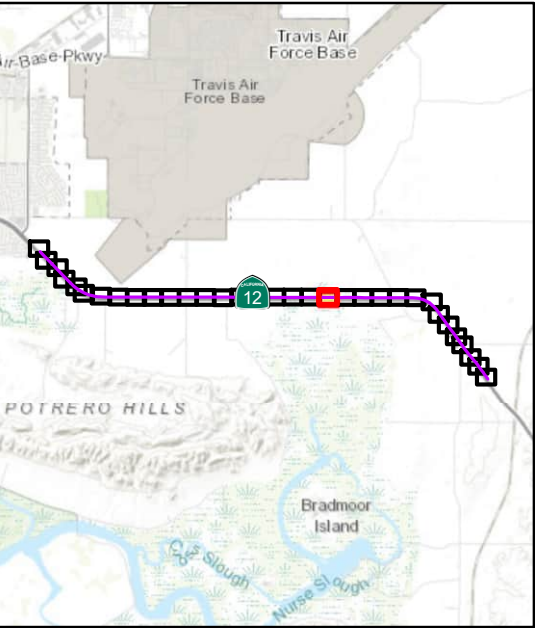
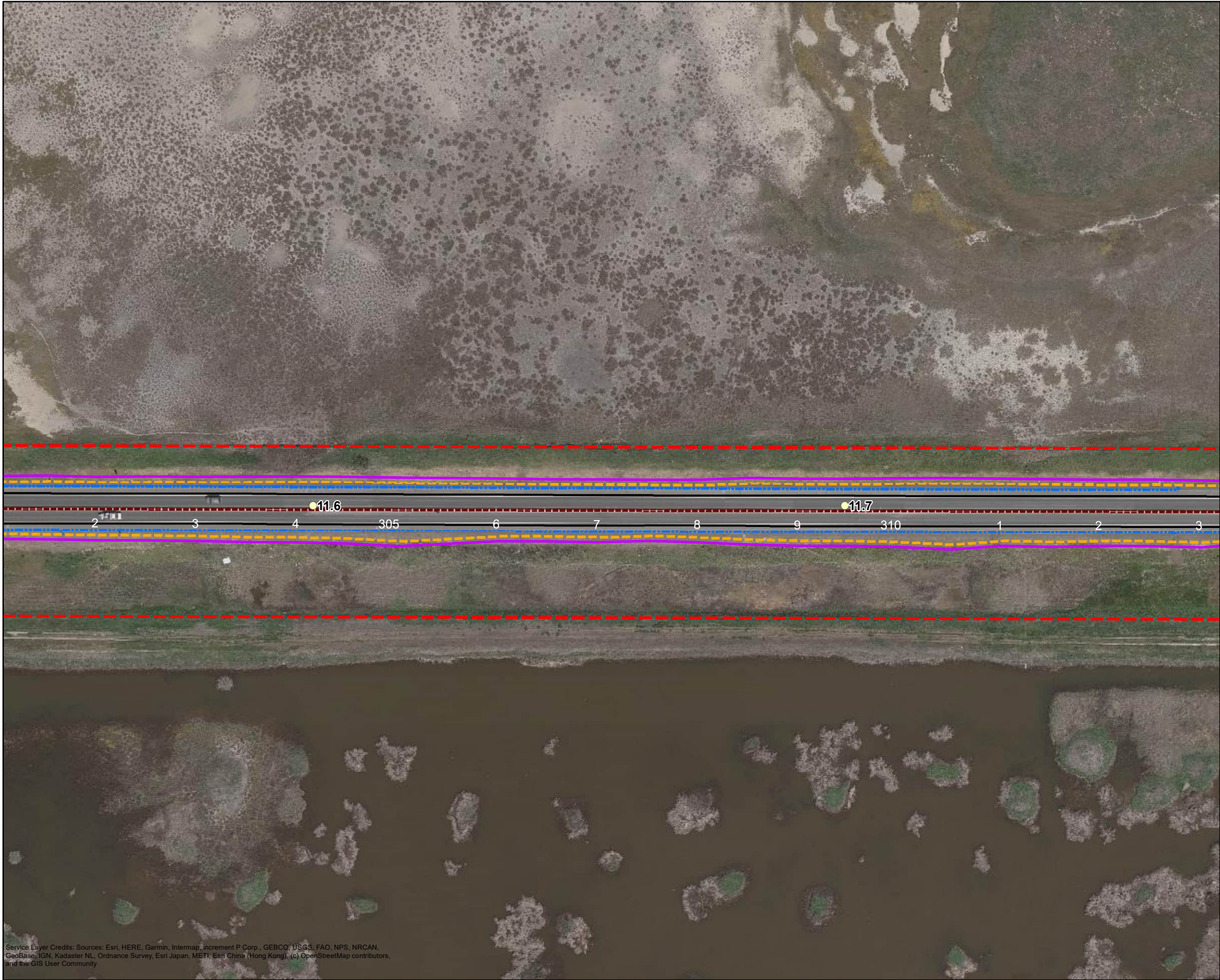
Solano County 2021 Aerial
Photography

Project Footprint was developed
from Master_Design.dgn
provided by Caltrans



Project Elements Mapbook
Map 19 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

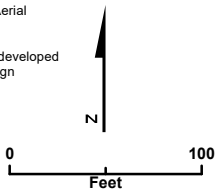


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

Project Footprint was developed from Master_Design.dgn provided by Caltrans

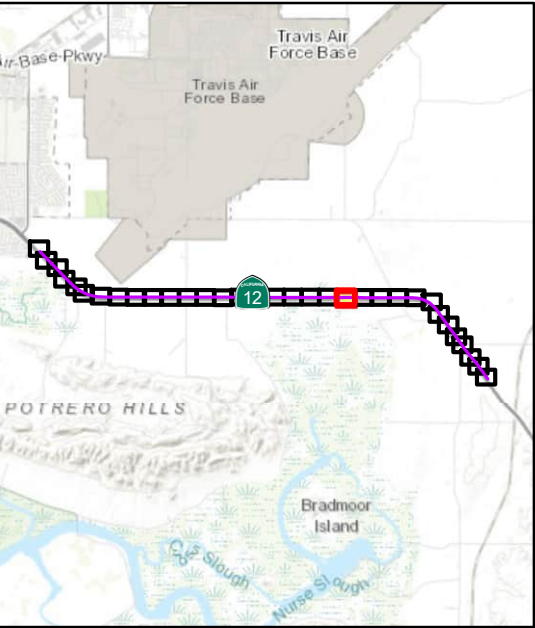


Project Elements Mapbook

Map 20 of 33

State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

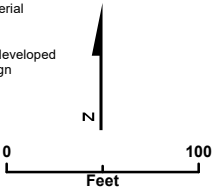


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

Solano County 2021 Aerial
Photography

Project Footprint was developed
from Master_Design.dgn
provided by Caltrans

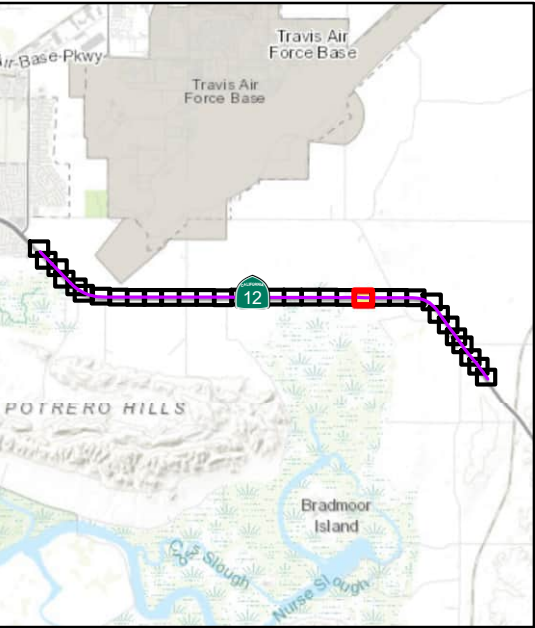


Project Elements Mapbook

Map 21 of 33

State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

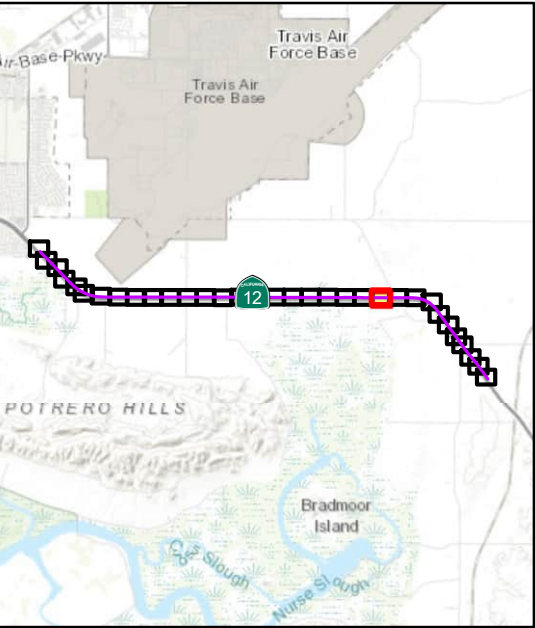
Project Footprint was developed from Master_Design.dgn provided by Caltrans

N

0 100 Feet

Project Elements Mapbook
Map 22 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

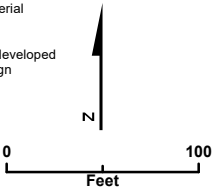


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

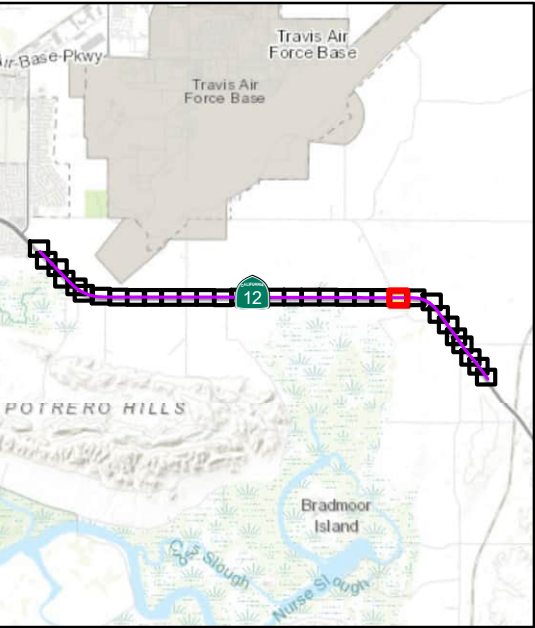
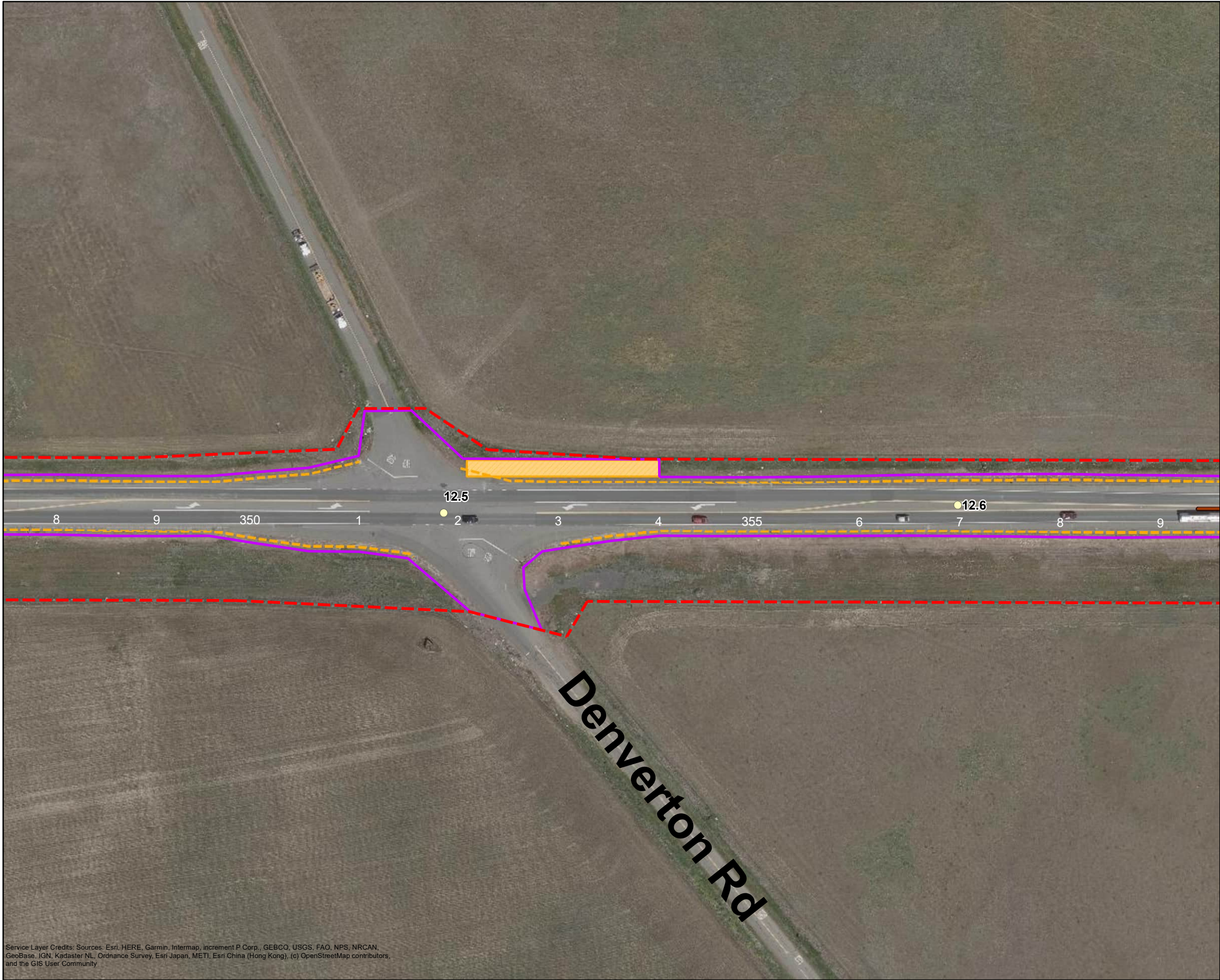
Solano County 2021 Aerial Photography

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Project Elements Mapbook
Map 23 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

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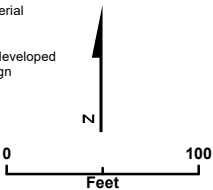


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Staging Area
- - - Cut and Fill Limits
- Remove and Replace Crash Cushion

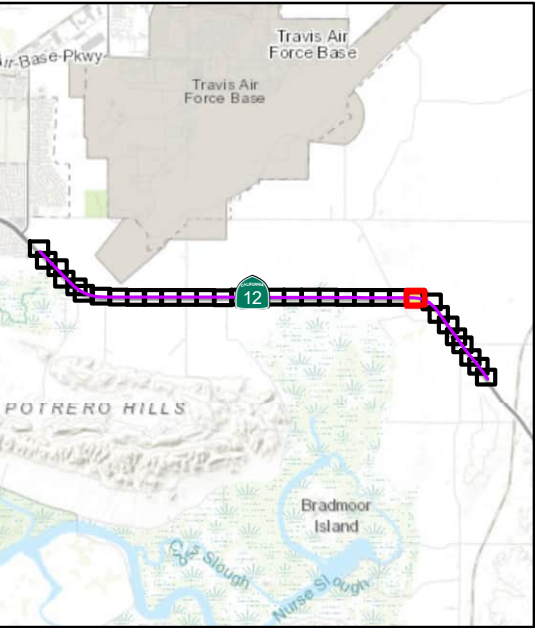
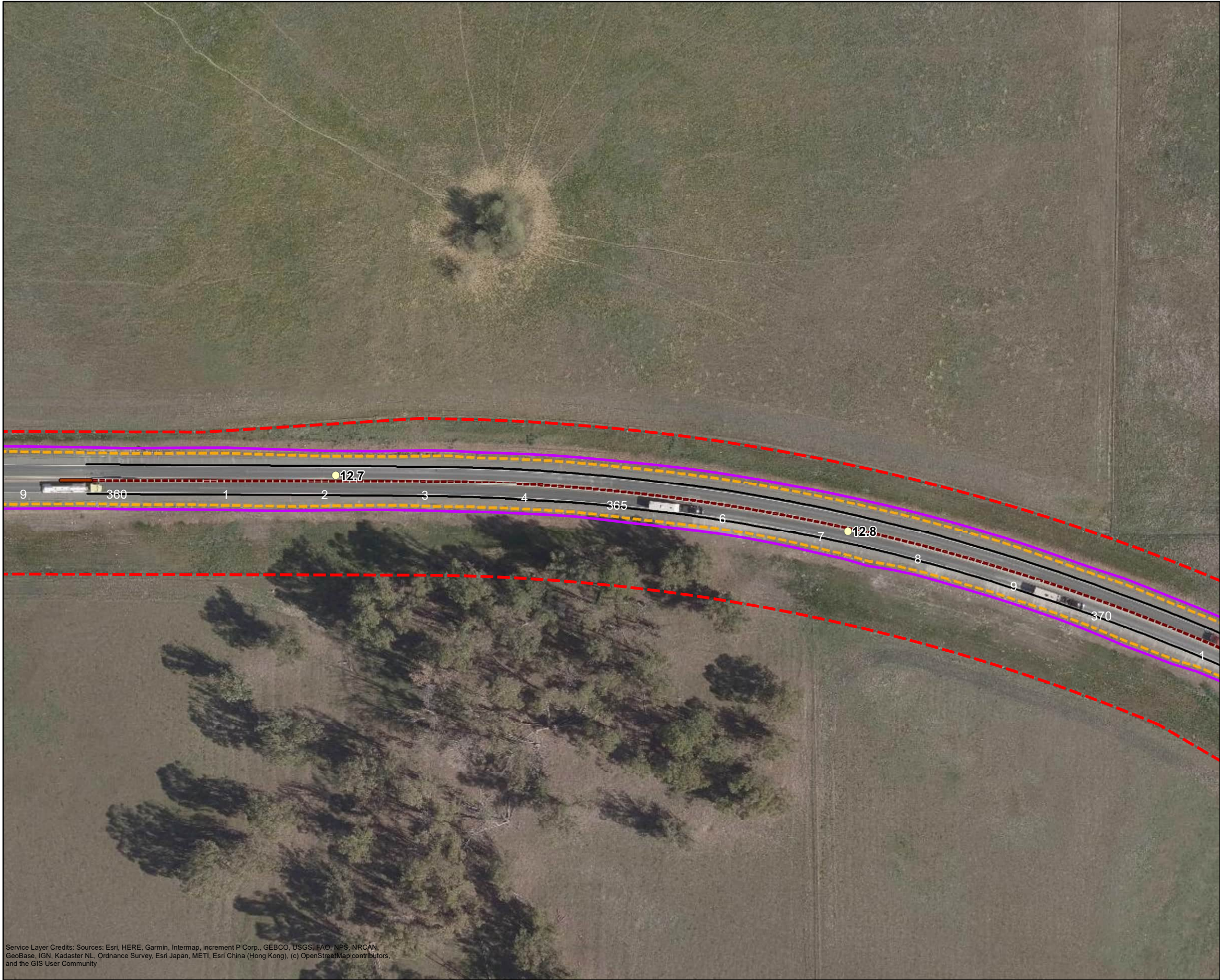
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Project Elements Mapbook
Map 24 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

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LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

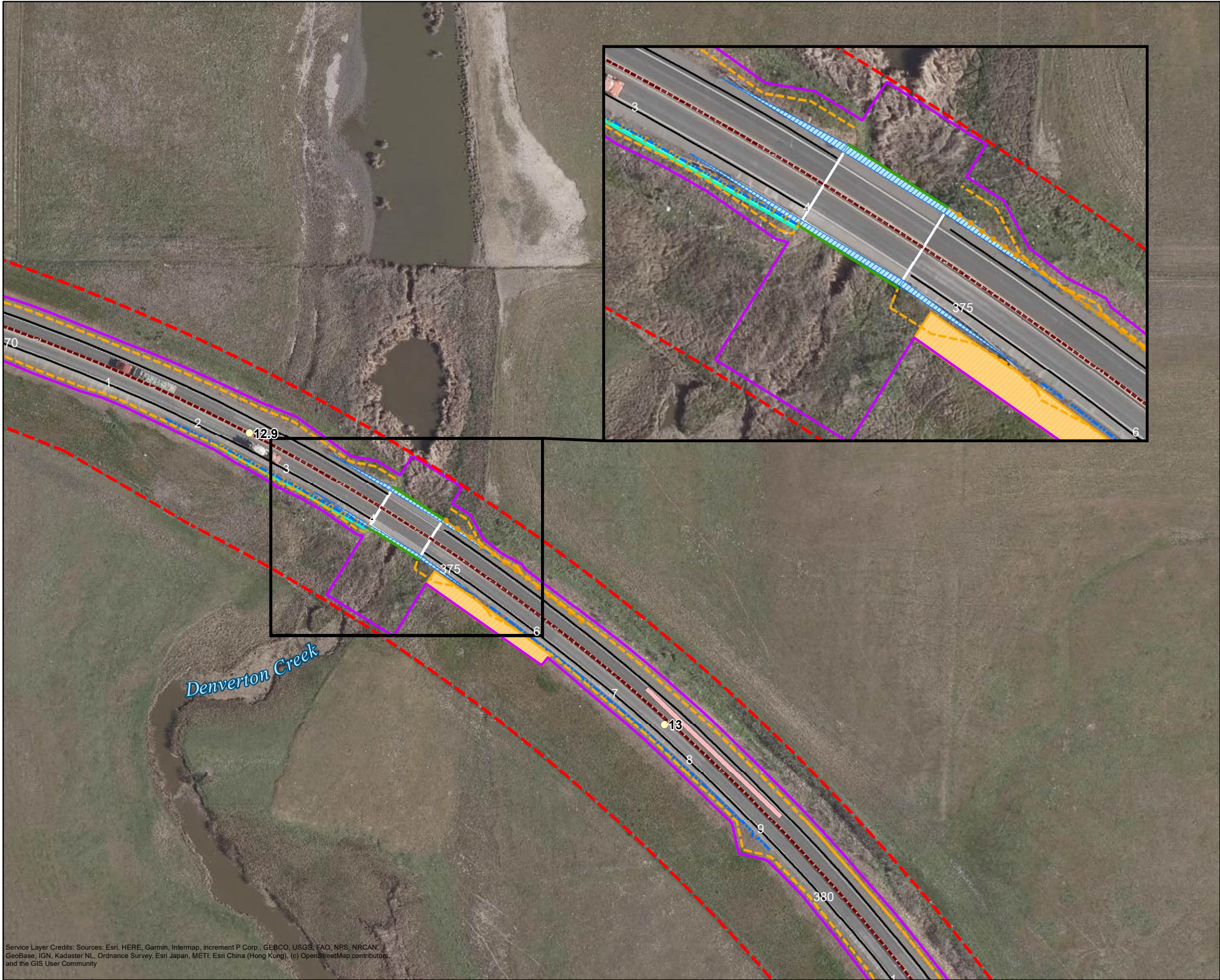
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Project Elements Mapbook
Map 25 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

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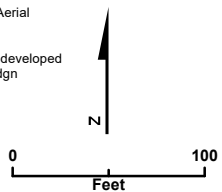


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Existing Bridge
- New Bridge
- Shoulder Widening
- Staging Area
- Vegetation Control
- Cut and Fill Limits
- Bridge Rails
- Midwest Guardrail System
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

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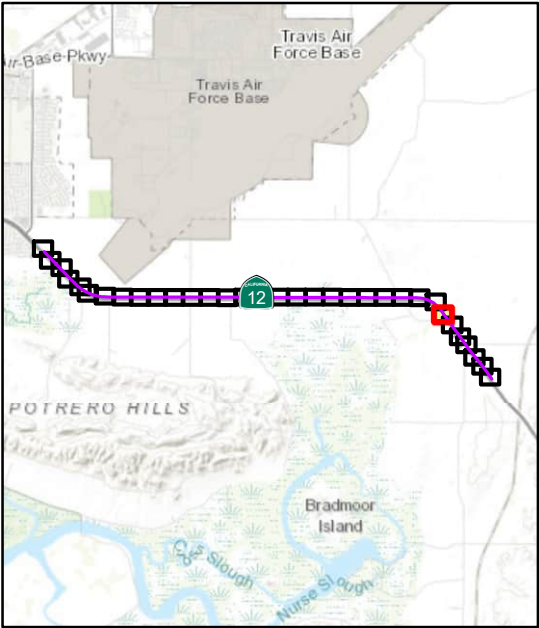


Project Elements Mapbook

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State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

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LEGEND

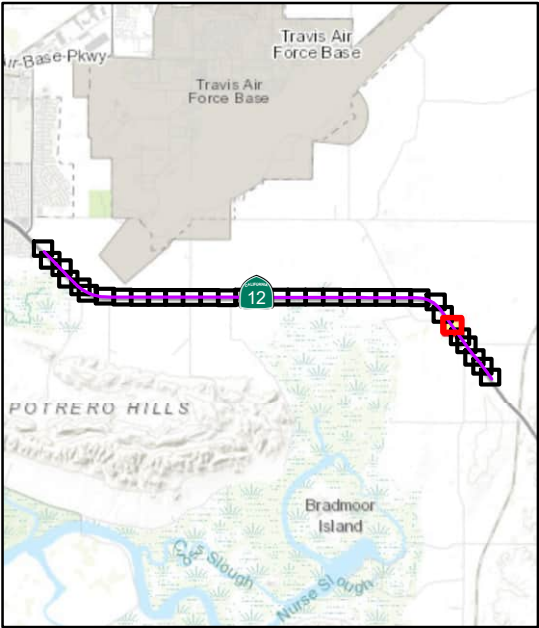
- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

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Project Elements Mapbook
Map 27 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

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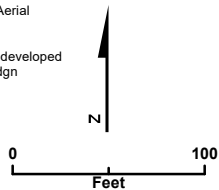


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

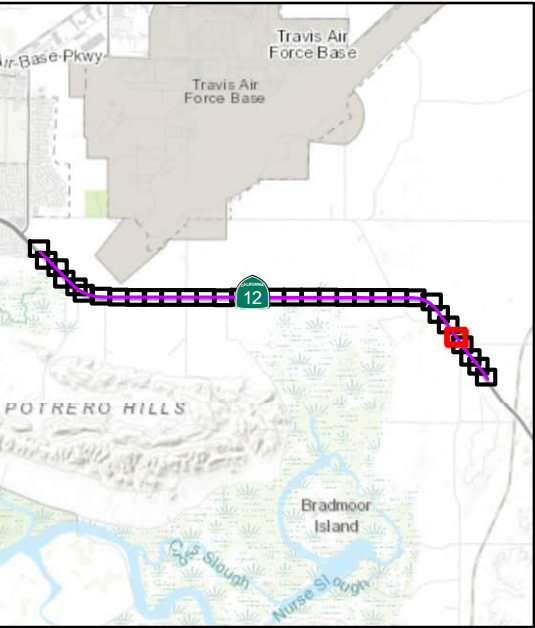
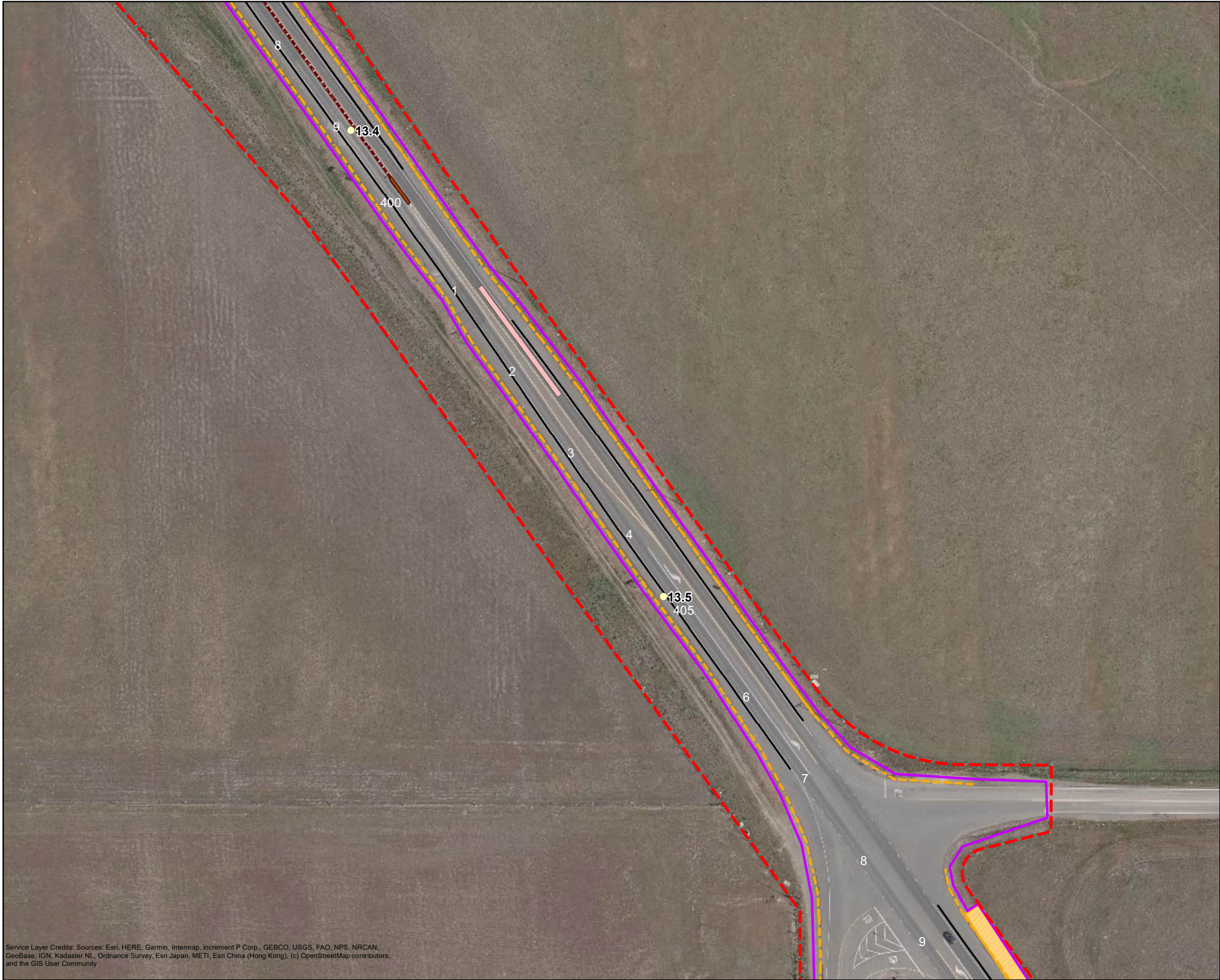
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Project Elements Mapbook
Map 28 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

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LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- AC Surfacing
- Staging Area
- Cut and Fill Limits
- Remove Concrete Barrier (Type K) Install Concrete Barrier (Type 60MC)
- Remove and Replace Crash Cushion
- Shoulder Rumble Strip

Solano County 2021 Aerial Photography

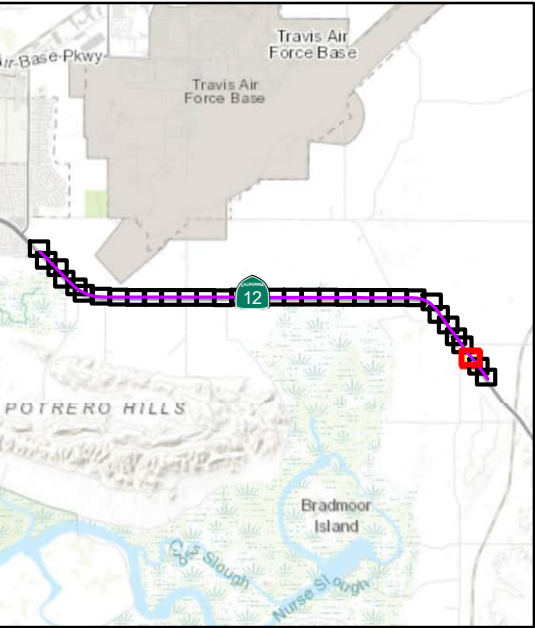
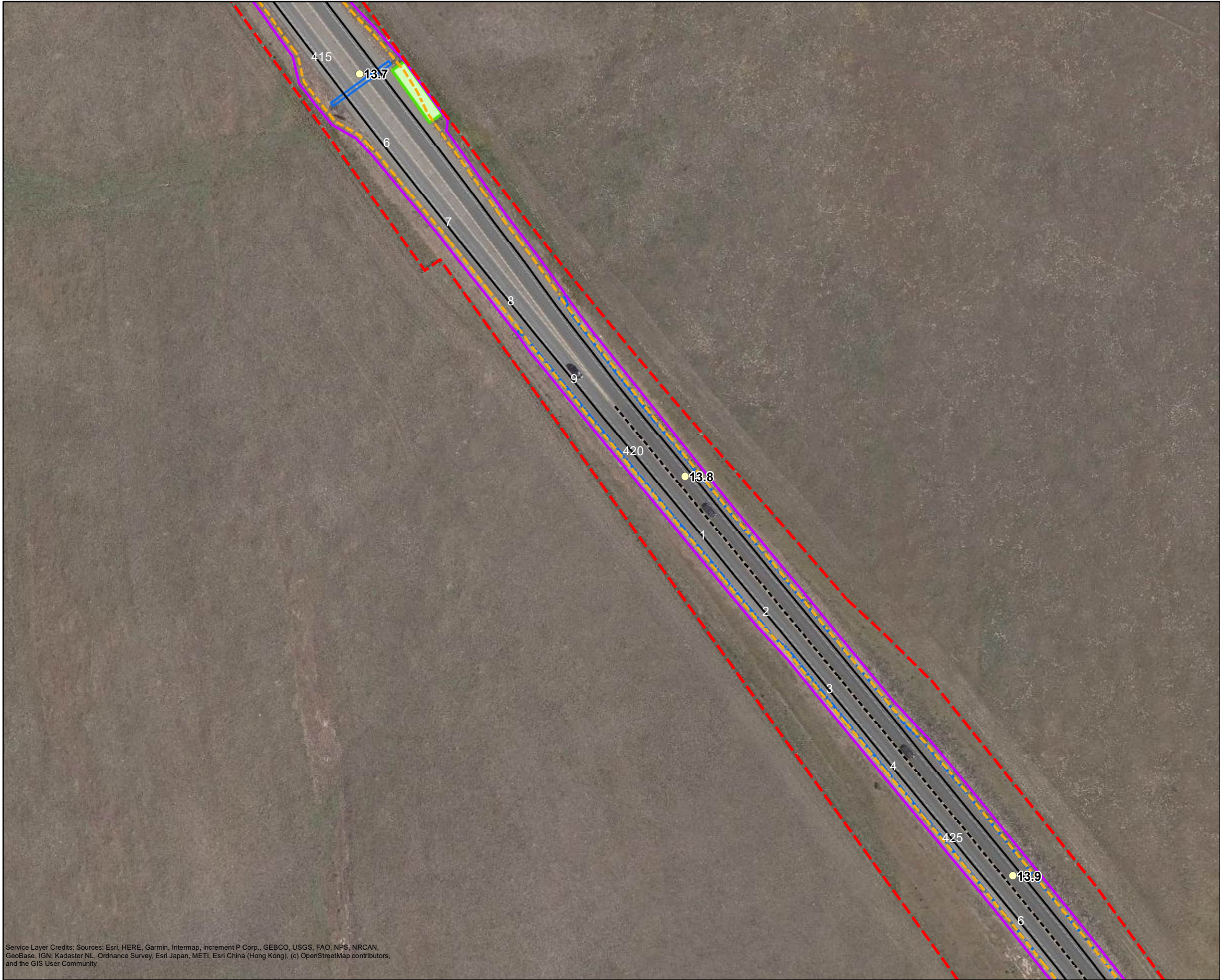
Project Footprint was developed from Master_Design.dgn provided by Caltrans

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Project Elements Mapbook
Map 29 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

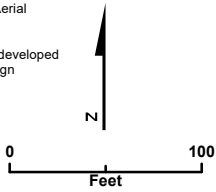


LEGEND

- Post Miles
- - - Caltrans Right of Way
- Project Footprint (51.04 acres)
- Bioswale
- - - Cut and Fill Limits
- Replace 24" CSP Culvert
- - - Centerline Rumble Strip
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

Solano County 2021 Aerial
Photography

Project Footprint was developed
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provided by Caltrans

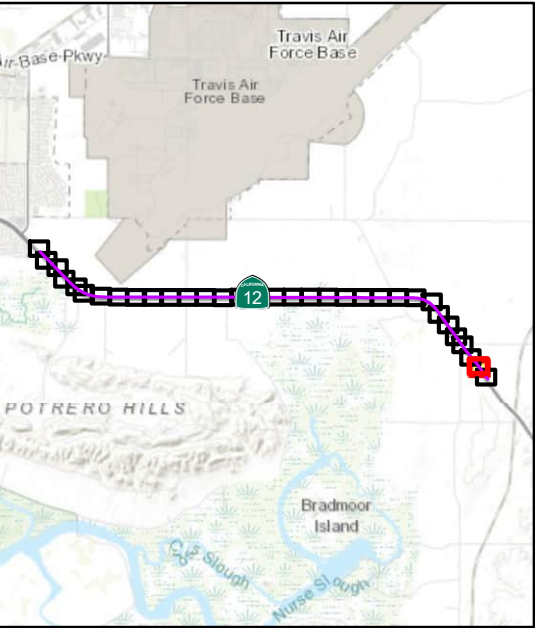


Project Elements Mapbook

Map 31 of 33

State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

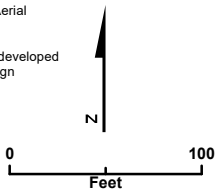


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Cut and Fill Limits
- Centerline Rumble Strip
- Midwest Guardrail System
- Remove HMA Dike. Install HMA Dike (Type E)
- Shoulder Rumble Strip

Solano County 2021 Aerial
Photography

Project Footprint was developed
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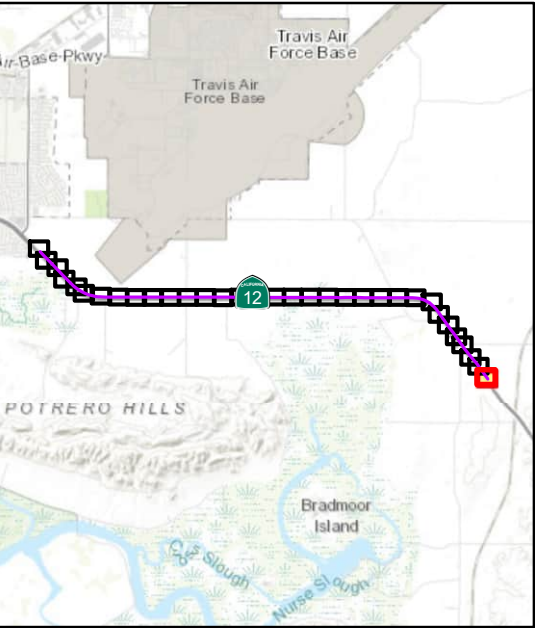
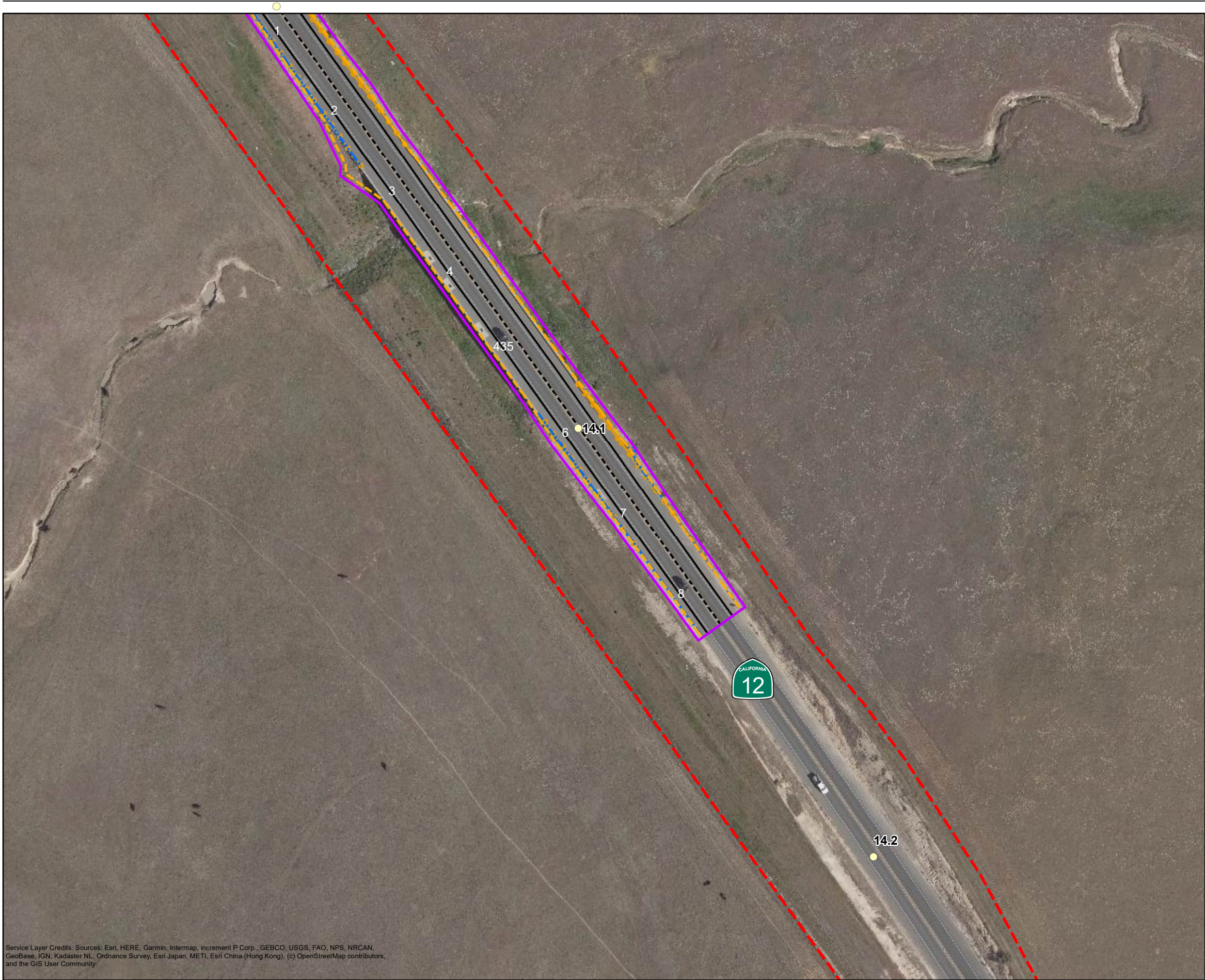


Project Elements Mapbook

Map 32 of 33

State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

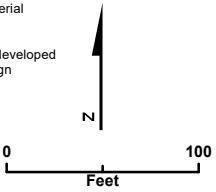


LEGEND

- Post Miles
- Caltrans Right of Way
- Project Footprint (51.04 acres)
- Cut and Fill Limits
- Centerline Rumble Strip
- Midwest Guardrail System
- Remove HMA Di. Install HMA Di (Type E)
- Shoulder Rumble Strip

Solano County 2021 Aerial
Photography

Project Footprint was developed
from Master_Design.dgn
provided by Caltrans



Project Elements Mapbook
Map 33 of 33
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Chapter 2 California Environmental Quality Act Evaluation

The following discussions evaluate potential environmental impacts of the proposed Project as described in Chapter 1 as they relate to the CEQA checklist to comply with CEQA Guidelines (Title 14 California Code of Regulations, Division 6, Chapter 3, Section 15091).

2.1 Environmental Factors Potentially Affected

As part of the scoping and environmental analysis carried out for the proposed Project, some environmental issues were considered but had no adverse impacts identified. As a result, there is limited discussion in this document on the following resources: agriculture and forestry, cultural resources, geology and soils, mineral resources, population and housing, recreational resources, tribal cultural resources, and utilities/ service systems.

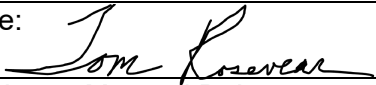
The environmental factors checked in Table 2-1 would be potentially affected by the proposed Project. Further analyses of these environmental factors are included in the following sections.

Table 2-1. Environmental Factors Potentially Affected

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

2.2 Determination

On the basis of this initial evaluation:

| | | |
|-----|--|------------------|
| | I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. | |
| X | I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. | |
| | I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. | |
| | I find that the proposed Project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. | |
| | I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required. | |
| for | Signature:  Tom Rosevear | Date: 12/28/2022 |
| | Printed Name: Maxwell D. Lammert | |

2.3 CEQA Environmental Checklist

The CEQA checklist (presented at the beginning of each resource section that follows, in the form of a table listing the pertinent questions applicable to the resource and a single column where the degree of impact is indicated) identifies physical, biological, social, and economic factors that might be affected by the proposed Project. In many cases, technical studies performed in connection with the Project 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 checklist are related to CEQA impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

As noted previously, project features, which may include both design elements of the proposed Project and standardized measures that are applied to all or most Caltrans projects, such as BMPs and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are an integral part of the Project and are considered prior to any significance determinations. A full list of the proposed Project’s project features, AMMs, and mitigation measures can be reviewed in Appendix A.

Section 2.1.1 through Section 2.1.21 of this section present the CEQA Determinations under Appendix G of the CEQA Guidelines. The CEQA determination depend on the level of potential environmental impact that would result from the Project. The level of significance determinations is defined as follows:

- No Impact: Indicates no physical environmental change from existing conditions.
- Less than Significant Impact: Indicates the potential for an environmental impact that is not significant with or without the implementation of AMMs.
- Less than Significant Impact with Mitigation Incorporated: Indicates the potential for a significant impact that would be mitigated with the implementation of a mitigation measure to a level of less than significant.
- Potentially Significant Impact: Indicates the potential for significant and unavoidable environmental impact.

2.3.1 Aesthetics

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

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

CEQA SIGNIFICANCE DETERMINATIONS FOR AESTHETICS

A Visual Impact Assessment was completed for the Project (Caltrans 2022a), with details of the assessment included in this section. SR 12 in Solano County is not listed as eligible for State Scenic Highway designation. SR 12 is neither on the National Highway System nor the Interstate System and does not include landscape plants installed or maintained by Caltrans.

SR 12 is a two-lane highway with one lane eastbound and one westbound; the directions of travel are currently separated by concrete barriers, with very light traffic on both sides. The visual character throughout the Project area is mildly scenic. A brief view of Union Creek and the Denverton Slough can be seen when traveling through the Project area near each end, at PMs 7.7 and 14.1, respectively. From PM 7.7 to PM 14.1, the foreground consists of low-growing grasses and various shrubs sparsely scattered along SR 12. The dominant views are of pasture and agricultural lands that span from the midground into the background, which consists of rural vegetated hills.

Visual change as a result of the Project would be low. The installation of the proposed concrete barriers type 60M in the median would result in a minimal height increase from the existing concrete barriers located in the median. The widening of the shoulders from PM 9.0 to PM 12.5 would result in little visual change from the current shoulder width.

Primary visual changes would occur mostly due to the bridge widening and guardrail replacement. The proposed bridge guardrails would be higher than the existing guardrails and would cause a reduction in the visibility of the foreground roadside. Distant views to rural hills and agricultural plains would not change due to the Project. The proposed bridge rails for both the Denverton and Union Creek bridges would be see-through railings that would preserve views to the maximum extent feasible and would help reduce visual changes from the Project.

a, b) No Impact

The Project is located on SR 12 in Solano County and is not listed or listed as eligible as a State Scenic Highway designation. The Project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway; therefore, resulting in no impact.

c) Less Than Significant Impact

The Project would replace existing concrete barriers within the median with concrete barriers type 60M, replace rumble strips along the shoulder and centerline, and replace the existing MBGR with MGS. Limited vegetation removal is proposed at staging areas to allow construction access. Tree removal and replacement planting are unlikely to be required. The character of the highway would be unchanged and visual changes would be negligible and unlikely to be noticed by roadway users. Existing vistas would be unaltered. With implementation of PF-AES-1 through PF-AES-5 and AMM-AES-1 through AMM-AES-4, temporary construction impacts including vegetation removal, usage of see-through bridge rails, and visual change from construction activities would minimize potential impacts. The Project would be compatible with the existing visual character of the surrounding area and the quality of the state route. The Project would not substantially degrade the existing visual character or quality of public views of the site and its surrounding; therefore, impacts would be less than significant.

d) Less Than Significant Impact

The Project would not create a new source of substantial light or glare. During construction, workers would limit construction lighting to the minimum necessary to provide for worker safety. PF-AES-5 would ensure lighting impacts to be minimal by using directional lighting and shielding to minimize potential illumination on surrounding land uses. In addition, the daily duration of construction lighting would be limited to early morning or evening hours and would not adversely affect day or nighttime views in the area; therefore, the impact would be less than significant.

AVOIDANCE AND MINIMIZATION MEASURES

AMM-AES-1: Minimize Construction Appearance. During construction, Caltrans would minimize the appearance of construction equipment and staging areas on SR 12 and would locate construction equipment and materials in a screened staging area beyond direct view of the motoring public and residential properties to the extent feasible

AMM-AES-2: Rail Design. During the design phase, Caltrans would design the bridge rails and guardrails along SR 12 to be see-through, which would allow views of the surrounding environment, as directed by Caltrans Landscape Architecture staff.

AMM-AES-3: Glare Effects. During the design phase, Caltrans would reduce glare by ensuring the design would be treated with a combination of roughening surface texture and coloring concrete to reduce glare, as directed by the Caltrans Office of Landscape Architecture.

AMM-AES-4: Post-Construction Site Grading and Contours. Prior to completion of construction activities, Caltrans would use contour grading and slope rounding to produce smooth, flowing contours consistent with site topography, to increase context sensitivity and reduce engineered appearance of slopes.

2.3.2 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 Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:

| 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 FOREST RESOURCES

The Project site is on SR 12 from 0.5 mile east of Walters Road/Lawler Ranch Parkway to 0.5 mile east of Shiloh/Lambie Road in Solano County. The site is identified on the California Important Farmland database as urban and built-up, grazing, and other land (California Department of Conservation 2022a).

The Project would be constructed within Caltrans ROW with the exception of a TCE that would be required at the Union Creek bridge to conduct bridge work activities in the creek. The Solano County Zoning Map shows that the north side of the Project limits is zoned as Exclusive Agriculture 160 acres (A-160) and the south side of the Project limits is zoned as Marsh Preservation, Suisun Marsh Agriculture 160 acres (ASM-160), and Exclusive Agriculture 160 acres (A-160) (Solano County n.d.).

a, c, d, e) No Impact

The Project area is designated by the Farmland Mapping and Monitoring Program as urban and built-up, grazing, and other land (California Department of Conservation 2022a). Therefore, there would be no conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. In addition, the California Timberland Productivity Act discourages premature or unnecessary conversion of timberland to urban and other uses and discourages expansion of urban services into timberland (California Department of Tax and Fee Administration 2022). The California Timberland Productivity Act does not apply because there are no forest resources or timberlands in the Project vicinity or at the Project site.

b) No Impact

The Project is in an area zoned Exclusive Agriculture 160 acres (A-160) and Suisun Marsh Agriculture 160 acres (ASM-160). However, work would be conducted within existing Caltrans ROW except for a TCE at the Union Creek bridge. The Project would not conflict with the existing zoning or result in conversion to non-agriculture use. The Project is adjacent to parcels that are under a Williamson Act contract (Solano County 2020), but the TCE would not be on a parcel under a Williamson Act contract. Therefore, the Project would not conflict with a Williamson Act contract and therefore would result in no impact.

2.3.3 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? | Less Than Significant |
| 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, c, d) No Impact

This Project is exempt from the requirement to determine air quality conformity per 40 CFR 93.126 (Table 2, Exempt Projects: Pavement resurfacing and/or rehabilitation). Therefore, an Air Quality Study is not required (Caltrans 2022b). Construction activities would be temporary and would not conflict with an air quality plan or generate emissions resulting in substantial pollutant concentrations or excessive odors; therefore, there would be no impact.

b) Less Than Significant Impact

The Project would be required to comply with Caltrans Standard Specification 14-9, Air Quality, which requires compliance with air-pollution-control rules, regulations, ordinances, and statutes that apply in the Project area. Construction activities would be temporary; therefore, air pollutants generated from construction would be minimal to negligible. Implementation of Caltrans Standard Specifications, such as complying with air-pollution-control rules, regulations, ordinances, and statutes that apply to work performed under the scope of the proposed Project, and the use of BMPs would result in a less than significant impact.

PF-AQ-1 through PF-AQ-3 would ensure minimal to negligible impacts from emissions during the construction phase.

2.3.4 Biological Resources

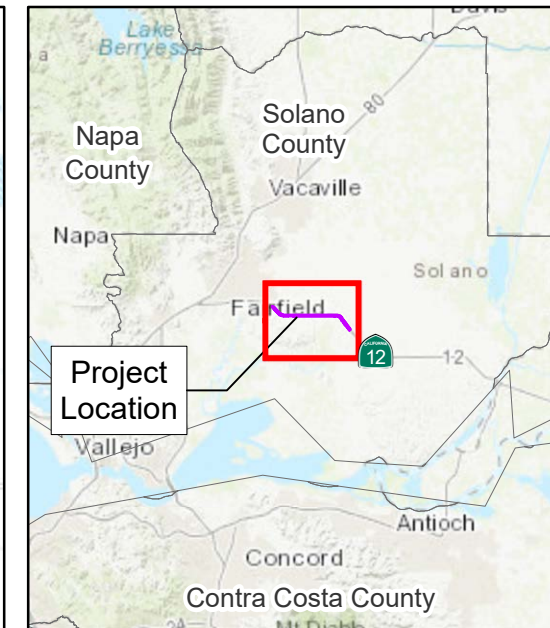
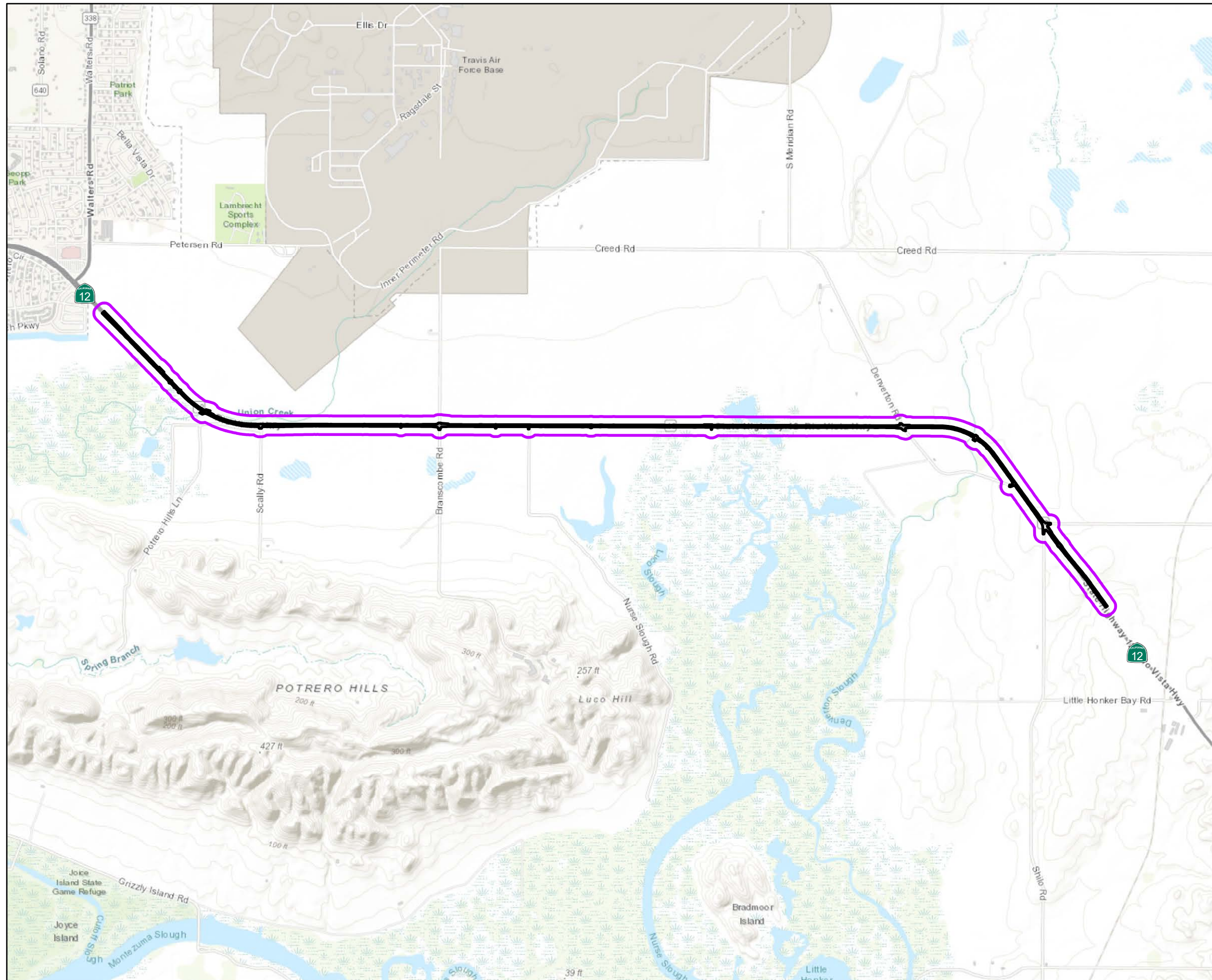
Would the Project:

| 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 with Mitigation Incorporated |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? | Less Than Significant Impact with Mitigation Incorporated |
| c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | Less Than Significant Impact with Mitigation Incorporated |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | Less Than Significant 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? | Less Than Significant Impact |

CEQA SIGNIFICANCE DETERMINATIONS FOR BIOLOGICAL RESOURCES

A Natural Environment Study was prepared for the Project to evaluate the effects of this Project on biological resources, including sensitive plants and wildlife species (Caltrans 2022h). This section summarizes the findings of this study.

The 452-acre biological study area (BSA) for the Project includes the Project footprint plus a variable-sized buffer of at least 250 feet around the Project footprint on all sides (Figure 2-1). The BSA can be generalized as predominately disturbed, non-native, ruderal grassland along both sides of SR 12, but intermittently mixed with a mosaic of brackish marsh, wetland, and vernal pool habitats.



LEGEND

- Biological Study Area (452.03 acres)
- Project Footprint (51.04 acres)

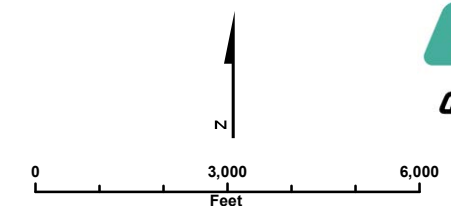


FIGURE 2-1
Biological Study Area
 State Route 12
 Major Pavement Rehabilitation Project
 EA 04-2Q550, SOL-12-PM 7.7/14.1
 Solano County, California

Databases were used identify sensitive biological resources that could occur in the Project area and be affected by the Project. The database search included the California Natural Diversity Database (CNDDB), the USFWS Information for Planning and Conservation, the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California, and the National Wetlands Inventory database.

Field surveys were conducted during the months of February, March, April, and July 2021, which included an aquatic resource delineation, Swainson's hawk protocol surveys, and rare plant survey. During the months of February, March, and April 2022, field surveys conducted included a reconnaissance-level field survey and habitat assessment, aquatic resources delineation, and a California tiger salamander coverboard survey.

a) Less Than Significant Impact with Mitigation Incorporated

The Project would have less than significant impacts with mitigation incorporated, either directly or through habitat modification, on any identified candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW, USFWS, or the National Oceanic and Atmospheric Administration (NOAA) NMFS.

The special-status species in this section are potentially present within or adjacent to the BSA. A list of special-status species with a potential to occur in the Project area is provided in Appendix E.

Special-Status Plant Species: No special-status plant species were observed within the BSA during the 2021 protocol-level rare plant survey. There are no anticipated impacts on special-status plant species.

Swainson's Hawk: The Swainson's hawk (*Buteo swainsoni*) is a state threatened species that breeds in California and winters in Central and South America. Swainson's hawks require large, open grasslands with abundant prey in association with suitable nest trees. The grassland areas surrounding the BSA constitute foraging habitat for the Swainson's hawk.

There are eight documented occurrences of Swainson's hawk within 5 miles of the BSA. The closest occurrence of a nesting Swainson's hawk is 3.4 miles east of the BSA, near the intersection of Lambie Road and Goose Haven Road. There are no documented occurrences within 0.25 mile of the BSA. Although suitable nesting trees are sparse within the SR 12 Project limits, there are six groves of suitable nesting trees adjacent to the highway on the eastern half of the Project starting at Nurse Slough Road. Additional groves of suitable nesting trees are within 0.25 mile

of the BSA along the western portion of the Project. The agricultural areas surrounding the BSA offer foraging habitat for *Buteo*-genus hawks, including the Swainson's hawk.

Protocol-level surveys for Swainson's hawk were conducted in March and April 2021 to determine if any nesting birds are present in the vicinity of the BSA. No nests or Swainson's hawk individuals were observed in the BSA during those surveys.

Construction activities would result in temporary impacts to Swainson's hawk foraging habitat from vegetation clearing and the permanent loss of foraging habitat. Disturbance to Swainson's hawk from construction activities could result in the incidental failure of active nests, leading to loss of fertile eggs or nestlings; however, the Project is unlikely to result in the take of nests, eggs, young, or individual Swainson's hawks with implementation of project features and AMMs.

Implementation of PF-BIO-4, PF-BIO-5, PF-BIO-7, PF-BIO-10, PF-BIO-13, PF-BIO-14, PF-BIO-17, AMM-BIO-1 through AMM-BIO-3, and AMM-BIO-6 would minimize potential impacts to Swainson's hawk and/or Swainson's hawk nests and eggs if present. Additional AMMs specific to Swainson's hawk would be implemented if required by CDFW during the permitting phase of the Project. Implementation of MM-BIO-1 would compensate for impacts to California tiger salamander habitat, which often overlaps with Swainson's hawk. Therefore, MM-BIO-1 would indirectly benefit Swainson's hawk. Impacts would be considered less than significant.

Western Burrowing Owl: The western burrowing owl (*Athene cunicularia*) is a state species of special concern. Breeding habitat for this species consists of open areas with mammal burrows and includes native prairie, pastures, fallow fields, road and railway rights-of-way, and urban habitats. Foraging habitat includes cropland, pastures, fallow fields, and areas with vegetation greater than 3 feet tall.

There are multiple CNDDDB records of the western burrowing owl within 5 miles of the BSA, including throughout the Potrero Hills and on and surrounding Travis Air Force Base. Areas of the BSA composed of grasslands are potentially suitable nesting habitat for burrowing owls. Two adult burrowing owls were observed in two locations within the Project footprint during a reconnaissance survey conducted on October 18, 2021. One burrowing owl was observed using ground squirrel burrows within the Project footprint. Focused surveys for the species were not conducted. There are several culverts that may function as temporary roosts for the western burrowing owl. Construction activities could result in temporary impacts on potential burrowing owl breeding habitat.

Impacts to western burrowing owl would be less than significant. The implementation of PF-BIO-2, PF-BIO-4 through PF-BIO-7, PF-BIO-10, PF-BIO-13, PF-BIO-14, AMM-BIO-1, AMM-BIO-2, and AMM-BIO-7 would further lessen the impacts of the Project on this species.

Northern Harrier: The northern harrier (*Circus cyaneus*) is a state species of special concern, with one occurrence approximately 5 miles southwest of the BSA. The BSA contains suitable nesting habitat within the tall vegetation of the brackish marsh as well as additional habitat for foraging in the freshwater wetland and non-native grasslands. This species has moderate potential to occur in the BSA. Project-related construction activities would occur within and adjacent to potential nesting and foraging northern harrier habitat. Accidental spills or runoff from the Project footprint could potentially enter and degrade the brackish marsh habitat; however, measures such as PF-WQ-1 through PF-WQ-3 would be implemented to minimize and avoid this potential indirect impact; no impact to habitat is anticipated.

Demolition and construction activities such as the use of hydraulic hammers to break up existing concrete on the bridges at Union Creek and Denver Creek would generate noise that could disrupt the nesting northern harrier's behavior. Disruption of reproduction and disturbance due to noise could result in the abandonment of eggs and/or young.

Impacts to the northern harrier would be less than significant. The implementation of PF-BIO-2, PF-BIO-4 through PF-BIO-7, PF-BIO-10, PF-BIO-13, PF-BIO-14, PF-WQ-1 through PF-WQ-3, and AMM-BIO-1 and AMM-BIO-2 would further lessen impacts to the species.

California Ridgway's Rail: The California Ridgway's rail (formerly California Clapper Rail) (*Rallus obsoletus obsoletus*) is listed as federally endangered and state endangered and is a state fully protected species. Critical habitat has not been designated for the California Ridgway's rail. This species occurs primarily in tidal salt and brackish marshes that have consistent tidal flows or access to tidal channel networks nesting and cover habitat, and prey supply of invertebrates. This species' current range is restricted to the tidal salt and brackish marshes surrounding the San Francisco Bay, which includes the South and Central Bay, the San Pablo Bay, and the Suisun Marshes. Nesting habitat must include sloughs to provide invertebrate prey items and escape from predators (USFWS 2013). Nests are built on elevated structures surrounded by vegetative cover at an elevation that does not become completely inundated during high tides. Small tidal channels with dense vegetation are important foraging areas (USFWS 2013).

A total of six occurrences of California Ridgway's rail have been documented within a 5-mile radius of the BSA, with no occurrences overlapping the BSA. The closest occurrence is 4,500 feet southwest of the BSA. The BSA has little to no natural tidal channels and no California cordgrass. Because use of brackish marshes by California Ridgway's rail is largely restricted to major sloughs and rivers, this species is not anticipated to occur in the Project footprint. The BSA contains portions of potentially suitable foraging and dispersal tidal marsh habitat; however, the closest patch of suitable intertidal channels that California Ridgway's rail requires is located approximately 700 feet from SR 12.

If the species is present, indirect impacts from dust or noise may extend outside of the BSA and have a potential to affect California Ridgway's rail individuals. Dust control measures will be implemented per the Stormwater Pollution Prevention Plan AMM; therefore, airborne dust and/or soil particles would be minimal. Construction activities at Union Creek Bridge are the most likely to generate high enough noise levels to potentially disrupt rails. California Ridgway's rails are at increased risk of predation when they flush or run, or disruption of reproduction and disturbance due to noise that could result in the abandonment of eggs and/or young. However, since the California Ridgway's rail habitat surrounding the Union Creek Bridge is of marginal quality, it is unlikely that the disturbance would adversely affect this species. Implementation of pre-construction surveys and work buffer during the rail nesting season would allow the Project to avoid acoustic disturbances to nesting rails that may cause abandonment of eggs and/or young. Other construction noise that may be generated by the Project would be similar in magnitude to ambient roadway noise.

Overall, the species is not anticipated to occur directly adjacent to SR 12 or within the Project footprint, as the Suisun Marsh Complex is well studied and there is a lack of documented occurrences within the BSA. Additionally, most vegetated areas in the BSA do not provide the higher marsh vegetation the species generally requires for cover, retreat, and breeding. While narrow strips of vegetation are present along the waterward sides of SR 12, these areas likely do not provide enough cover for this cryptic species. Overall, this species is not anticipated to occur in the Project footprint.

Implementation of PF-BIO-3 through PF-BIO-7, PF-BIO-9, PF-BIO-11, PF-BIO-13, PF-BIO-14, PF-WQ-1 through PF-WQ-3, AMM-BIO-1, AMM-BIO-2, and AMM-BIO-4 would minimize potential impacts to California Ridgway's rail. Impacts would be less than significant.

California Black Rail: California black rail (*Laterallus jamaicensis coturniculus*) is a state threatened and state fully protected species. The California black rail occurs

across a wider variety of habitat types than the California Ridgway's rail. California black rail habitat generally includes salt marshes, freshwater marshes, and wet meadows. Most California populations are nonmigratory, and these vegetation communities provide breeding, foraging, and overwintering habitats for the species. California black rail forages in the same habitats that it uses for breeding. Near tidal areas, the rails also require dense cover of upland vegetation to provide protection from predators when the birds must leave marsh habitats during high tides. Typical associated vegetation includes pickleweed in salt marshes and bulrush (*Scirpus* spp.) in less saline habitats.

There are nine occurrences of the California black rail within a 5-mile radius of the BSA, none of which overlap the BSA. The closest occurrence is approximately 4,500 feet southwest of the BSA. California black rail has a moderate potential to occur in the BSA because the BSA contains extensive brackish bulrush marsh on both sides of the highway west of Union Creek.

Project-related construction activities that would occur within California black rail habitat along the edge of the Project footprint in bullrush brackish marshes include two culvert replacements west of Union Creek as well as the Union Creek bridge rail replacement and the Denverton Creek bridge rail replacement. Direct or indirect effects on California black rails occurring in or near the bridge rail work and culvert replacements may include an alarm response on the part of the bird, causing it to flush, move away from the source of disturbance, or wait out the disturbance. California black rails are at increased risk of predation when they flush or run, and they could fly accidentally into the construction zone. Direct effects could also include disruption of reproduction due to noise that could result in the abandonment of eggs and/or young. Accidental spills or stormwater runoff could enter and degrade the brackish marsh habitat. Construction activities in or adjacent to the brackish marsh would indirectly and directly affect this species.

Implementation of the AMMs, including restricting Project activities to approved work areas and installation of erosion control materials and construction site BMPs where applicable, would be implemented to avoid direct take of this species in the unlikely event that suitable habitat is occupied. Implementation of AMM-BIO-4 would include work windows, pre-construction surveys, and work buffers as determined in consultation with CDFW to allow the Project to avoid acoustic disturbances to nesting rails that may cause abandonment of eggs and/or young.

Impact to the California black rail would be less than significant. The implementation of PF-BIO-3 through PF-BIO-7, PF-BIO-9, PF-BIO-11, PF-BIO-13, PF-BIO-14, PF-WQ-1 through PF-WQ-3, AMM-BIO-1, AMM-BIO-2, and AMM-BIO-4 would further minimize impacts to the species.

Tricolored Blackbird: The tricolored blackbird (*Agelaius tricolor*) is a state threatened species and a California species of special concern. For breed site selection, the species requires open accessible water; a protected nesting substrate, including either flooded or thorny or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few kilometers (up to 4 miles) of the nesting colony. Open rangeland/cattle pasture, annual grassland, and hay fields have been documented as adequate foraging habitats.

There are two reported CNDDB occurrences of tricolored blackbird in Suisun Marsh, with the closest occurrence less than 2 miles south of SR 12 near Potrero Hills. There is also a reported CNDDB occurrence of tricolored blackbird near Denverton Creek, approximately 1 mile north of SR 12.

Within the Project footprint (i.e. adjacent to SR 12), the extensive brackish bulrush marsh west of and along the banks of Union Creek as well as bulrush marsh observed in other areas west and on the banks of Denverton Creek provide suitable habitat for this species.

There is potential for this species to occur or nest near the Project; therefore, Project construction has the potential to disturb nests, eggs, or individual tricolored blackbirds. Construction disturbance during the breeding season could result in the incidental failure of nearby nests, leading to loss of fertile eggs or nestlings. However, with the implementation of project features and AMMs, no take of nests, eggs, or individual is anticipated. Pre-construction surveys would be conducted in suitable nesting habitat during the breeding season. On-going biological monitoring of work near suitable habitat, worker environmental awareness training, and ESA demarcation would also aid in avoiding impacts to the species.

Potential Project impacts include temporary direct impacts on foraging habitat resulting from vegetation clearing. Indirect impacts to downstream habitat from accidental spills or incidental runoff from the Project footprint would be avoided with implementation of construction site BMPs.

Implementation of PF-BIO-4 through PF-BIO-7, PF-BIO-9, PF-BIO-10, PF-BIO-13, PF-BIO-14, PF-WQ-1 through PF-WQ-3, AMM-BIO-1, and AMM-BIO-2 would minimize potential impacts to tricolored blackbird. Impacts would be less than significant.

Western Pond Turtle: The western pond turtle (*Emys marmorata*) is a California special species of concern; it has no federal status. The western pond turtle is found in ponds, marshes, rivers, streams, and irrigation ditches that typically have rocky or

muddy bottoms and support aquatic vegetation. The western pond turtle requires terrestrial habitat that is adjacent to aquatic habitat for nesting.

There are four CNDDDB recorded occurrences of the western pond turtle within 5 miles of the BSA, and approximately 10 western pond turtles were observed in Union Creek at the north side of SR 12 during February 2022 surveys. Within the BSA, both Union Creek and Denverton Creek provide suitable habitat for this species.

Construction activities such as bridge work and dewatering would disturb western pond turtle aquatic habitat along the bed and banks of Union Creek and Denverton Creek. Direct impacts to the western pond turtle during construction would be minimized with the implementation of AMM-BIO-2. The implementation of PF-BIO-4, PF-BIO-5, PF-BIO-7, PF-BIO-9, PF-BIO-10 through PF-BIO-14, AMM-BIO-1, and AMM-BIO-2 would further minimize potential impacts to western pond turtle. Impacts would be less than significant.

Nesting Migratory and Non-game Birds: Migratory bird species protected under the Migratory Bird Treaty Act and Fish and Game Codes Section 3503 and Section 3800 may occur in or near the BSA. Raptors that could potentially forage within the vicinity of the BSA during Project activities include golden eagle (*Aquila chrysaetos*), bald eagle (*Haliaeetus leucocephalus*), and red-tailed hawk (*Buteo jamaicensis*). The BSA and adjacent landscape provides nesting and foraging habitat for a wide range of bird species. Most birds found in the BSA are protected under the Migratory Bird Treaty Act. Biologists documented several species of birds in the BSA during other surveys. The habitat within the BSA is suitable foraging and potential breeding habitat for bird species.

Vegetation removal during construction would temporarily impact foraging habitat and potential nesting habitat for migratory birds. In addition, noise and visual disturbance could impact potential nesting birds through nest failure or abandonment. Pre-construction nesting bird surveys would be performed to determine nest activity, identify potentially active nests within the BSA during construction, and implement appropriate construction work buffers around active nests.

Impacts to migratory birds would be less than significant. Implementation of PF-BIO-4 through PF-BIO-7, PF-BIO-9, PF-BIO-11, PF-BIO-13, PF-BIO-14, AMM-BIO-1, and AMM-BIO-2 would minimize potential impacts to migratory birds such as the clapper rail and California black rail.

California Tiger Salamander: The California tiger salamander (*Ambystoma californiense*) is both state and federally listed as a threatened species. Critical habitat has been designated for California tiger salamander, but there is no designated critical habitat within the BSA. The closest designated critical habitat is located approximately 1 mile northeast of the BSA.

California tiger salamanders are typically associated with annual grasslands that provide underground refugia, created by burrowing animals, with nearby vernal pools or similar habitats consisting of season pools or ponds for breeding.

There are numerous CNDDDB recorded occurrences of California tiger salamander within 5 miles of the BSA, with the closest recorded occurrence approximately 1 mile south of the BSA. California tiger salamander larvae or eggs have been observed in seven ponds on the Potrero Hills Landfill property. California tiger salamander upland habitat is also present, as soil cracks, debris piles, and ground squirrel burrows occur throughout the Potrero Hills. An occurrence from March 2010 is located near SR 12 in the North Suisun Mitigation Bank immediately north of the Project. This occurrence included the observation of two California tiger salamander larvae in a temporary pond surrounded by grazed annual grasslands. This would place a breeding population of California tiger salamander within the BSA but outside the Project footprint.

California tiger salamanders are assumed to move into grassy upland areas within 1.3 miles of suitable breeding locations. There are multiple features in the BSA, including seasonally inundated wetlands, ponds, and drainages, that could provide potential aquatic habitat for breeding. All grasslands within 1.3 miles of a suitable breeding site are considered suitable upland habitat. The annual grassland within the BSA is within 1.3 miles of a suitable breeding location and is assumed to potentially support California tiger salamander.

No California tiger salamander, larvae, or eggs were observed during 2022 site visits within the BSA; however, protocol surveys for this species were not conducted. Several of the aquatic features within the BSA that are considered suitable for breeding were surveyed by setting out coverboards near existing culverts for migrating adults or juveniles during 2022; results of those board surveys were negative. In the absence of data from the cover board study, a habitat assessment will be used to determine which culverts can be replaced with upsized designs which would better facilitate California tiger salamander passage under the highway.

The Project would install Type 60M concrete barriers in the SR 12 median, which would be a barrier to any California tiger salamander attempting to disperse across the roadway. However, the new concrete barriers in the center median would be

replacing existing K-rail which already present a barrier to California tiger salamander dispersal in the existing condition. The Project would not add travel lanes, change the speed limit, or otherwise increase the volumes of traffic on SR 12. Culvert replacements would either be replaced in-kind or increased in diameter. Therefore, no new barriers to dispersal for this species would occur from the Project components. The new barrier will be designed to include nine-inch holes and vertical gaps which will provide more opportunities for wildlife to pass through than is currently present in the temporary K-rail.

Most of the Project is confined to the existing roadway and adjacent shoulders. The Project would have temporary impacts on approximately 2.63 acres and permanent impacts to 0.29 acre of upland California tiger salamander dispersal habitat, as well as temporary impacts to 0.002 acre and permanent impacts to 0.0004 acre of California tiger salamander aquatic habitat. Therefore, the Project would have a potentially significant impact on the California tiger salamander.

However, with the implementation of PF-BIO-1 through PF-BIO-5, PF-BIO-7, PF-BIO-9 through PF-BIO-12, PF-BIO-15, PF-WQ-1 through PF-WQ-3, AMM-BIO-1, through AMM-BIO-3, MM-BIO-1, and MM-BIO-2, impacts to California tiger salamander would be reduced to less than significant with mitigation incorporated.

Salt Marsh Harvest Mouse: The salt marsh harvest mouse (*Reithrodontomys raviventris*) is both state and federally listed as an endangered species and is a state fully protected species. The salt marsh harvest mouse is known to inhabit tidal marsh, as well as other habitats. The species has been documented in the brackish marsh habitats immediately south of SR 12 on the western side of Union Creek. The closest record is less than 0.5 mile from the western end of the BSA. Additional records include occurrences 7.5 miles south of the SR 12 crossing of Nurse Slough.

Focused surveys were not conducted for the salt marsh harvest mouse, but suitable habitat for this species was observed during other site surveys. Because focused surveys for the salt marsh harvest mouse were not conducted, the Project assumes the salt marsh harvest mouse is potentially present in the salt/brackish marsh habitats on the southern side of SR 12 and all transitional areas within 50 feet of these marsh habitats.

Most of the Project is confined to the existing roadway and adjacent shoulders. However, the replacement of two culverts, shoulder widening, and the work at Union Creek bridge would result in 0.529 acre of temporary direct impacts and 0.05 acres of permanent direct impacts to brackish marsh habitat. The Project may harass the salt marsh harvest mouse due to exclusion fencing, vegetation removal, and impacts

to brackish marsh habitat. However, the Project will not result in injury or death of salt marsh harvest mouse.

Implementation of AMMs and MM-BIO-1 would reduce temporary and permanent impacts to salt marsh harvest mouse habitat. To mitigate permanent habitat loss, Caltrans will purchase credits post-construction from an approved conservation bank (if available) or via contribution to offsite local habitat restoration projects or programs (as specified in MM-BIO-1). The total credits to be purchased will be determined during final design and permitting. With implementation of PF-BIO-1 through PF-BIO-5, PF-BIO-7, PF-BIO-9, PF-BIO-10, PF-BIO-12, PF-BIO-14, PF-BIO-17, AMM-BIO-1 through AMM-BIO-3, and MM-BIO-1, impacts to salt marsh harvest mouse would be less than significant with mitigation incorporated.

Suisun Shrew: The Suisun shrew (*Sorex ornatus sinuosus*) is considered a species of special concern by the CDFW. It occurs in tidal and brackish marsh communities along the north shore of San Pablo and Suisun bays (Owens and Hoffmann 1983). There are no CNDDDB recorded occurrences of this species within 5 miles of the BSA. Focused surveys were not conducted for Suisun shrews in the BSA, but suitable habitat for this species was observed during other site surveys. The salt/brackish marsh and adjacent transitional areas associated with Union Creek and Nurse Slough located on the south side of SR 12 provide conditions considered suitable for Suisun shrew.

Most of the Project is confined to the existing roadway and adjacent shoulders. The replacement of two culverts, work on the Union Creek bridge, and shoulder widening would result in 0.529 acre of temporary impacts and 0.05 acre of permanent direct impacts to brackish marsh habitat. The Project may harass the Suisun shrew due to exclusion fencing, vegetation removal, and impacts to brackish marsh habitat. However, the Project will not result in injury or death of Suisun shrew.

With implementation of PF-BIO-1 through PF-BIO-5, PF-BIO-7, PF-BIO-9, PF-BIO-10, PF-BIO-12, PF-BIO-14, PF-BIO-17, AMM-BIO-1 through AMM-BIO-3, and MM-BIO-1, impacts to Suisun shrew would be considered less than significant with mitigation incorporated.

Delta Green Ground Beetle: The Delta green ground beetle (*Elaphrus viridis*) is a federally listed threatened species. Delta green ground beetles are only known to exist in six areas in the Jepson Prairie area of Solano County. Primary habitat for the Delta green ground beetle is the immediate shoreline of seasonal wetlands on Pescadero clay loam and Solano-Pescadero complex soils that support the appropriate mix of sparse, low-growing vegetation and preferred prey (primarily springtails, such as *Collembola*).

There are five CNDDDB records for Delta green ground beetle within 5 miles of the BSA. Large seasonal vernal pools that are suitable for Delta green ground beetle occurs within and near the BSA, but there are no suitable large vernal pools or seasonal lakes within the Project footprint. The closest suitable pools are located around 0.1 mile south of the ROW between Scally Lane and Branscombe Road.

Most of the Project is confined to the existing roadway and adjacent shoulders. The Project footprint does not overlap with suitable habitat for Delta green ground beetle; therefore, there would be no effect on the species.

To minimize indirect and direct impacts to the Delta green ground beetle and its habitat, the Project would implement PF-BIO-4, PF-BIO-5, PF-BIO-14, PF-WQ-1 through PF-WQ-3, and AMM-BIO-1 through AMM-BIO-3. Impacts to the Delta green ground beetle would be less than significant.

Special-Status Vernal Pool Branchiopods: Three species of special-status vernal pool branchiopods are federally listed and have potential to occur within the BSA. The vernal pool tadpole shrimp (*Lepidurus packardii*) and the conservancy fairy shrimp (*Branchinecta conservatio*) are both listed as federally endangered, while the vernal pool fairy shrimp (*Branchinecta lynchi*) is federally listed as threatened. Vernal pool branchiopods are dependent on the seasonal nature of their habitat, which consists of depressions that become inundated during winter rains and dry up completely by summer. There are 17 CNDDDB recorded occurrences within a 5-mile radius and there is critical habitat present within the BSA for all three brachiopod species. There are several small to medium-sized vernal pools within the BSA.

The small to medium-sized pools that are expected to be suitable for vernal pool fairy shrimp would also be classified as habitat for conservancy fairy shrimp when the pools are in critical habitat. However, observations suggest conservancy fairy shrimp often are found in pools that are relatively large and turbid.

Most of the Project is confined to the existing roadway and adjacent shoulder and would avoid any impacts to vernal pools or other seasonal wetlands. The Project footprint does not overlap with suitable habitat for vernal pool tadpole shrimp or conservancy fairy shrimp; therefore, there would be no direct impacts on these vernal pool species.

The Project would temporarily impact 0.002 acre and permanently impact 0.005 acre of the potential vernal pool fairy shrimp habitat. However, with the implementation of PF-BIO-2 through PF-BIO-4, PF-BIO-7, PF-BIO-9, PF-BIO-14, PF-WQ-1 through PF-WQ-3, AMM-BIO-1 through AMM-BIO-3, and MM-BIO-1, impacts to special-

status vernal pool branchiopods would be reduced to less than significant impact with mitigation incorporated.

Townsend's Big-eared Bat: Townsend's big-eared bat (*Corynorhinus townsendii*) is a California species of special concern. It is not listed under the federal or state Endangered Species Acts and no critical habitat has been designated for the species.

Townsend's big-eared bats are found throughout California, but the details of its distribution are not well known. The species requires cavity-type habitats such as caves, tree basal hollows, mines, tunnels, buildings, bridges, or other human-made structures for roosting, and they may use separate sites for night, day, hibernation, or maternity roosts. This species has been documented to use culvert structures for roosting and, depending on the culvert structure, could use culverts within the Project area.

There are no CNDDDB occurrences for Townsend's big-eared bats within 5 miles of the BSA. No individuals or signs of bats were observed during field visits. The Union Creek and Denverton Creek bridges may be suitable for bat roosting but are not suitable for large maternal roosts.

Impacts to Townsend's big-eared bats would be less than significant. Implementation of PF-BIO-3, PF-BIO-4, PF-BIO-7, PF-BIO-9, PF-BIO-11, PF-BIO-13, PF-BIO-14, AMM-BIO-1 through AMM-BIO-3, and AMM-BIO-8, would further minimize potential impacts to Townsend's big-eared bats.

b) Less Than Significant Impact with Mitigation Incorporated

The vernal pools within the BSA were determined to be part of the CDFW sensitive natural community known as Northern Claypan Vernal Pool. This community has a global and state threat rank of 2 and is considered to be at risk due to restricted range, few occurrences, steep declines, severe threats, and other factors. The vernal pools, as well as other seasonal wetlands in the Project vicinity, function as critical habitat for federally listed vernal pool tadpole shrimp, conservancy fairy shrimp, and vernal pool fairy shrimp, as previously described in the Special-Status Vernal Pool Branchiopods section.

In addition, alkali heath marsh and salt marsh bulrush vegetation alliances are also classified as sensitive natural communities (Caltrans 2022h). Sensitive natural communities also include habitats that have high resource values, such as other wetlands and streams.

The Project would result in temporary and permanent impacts to vernal pools and salt marsh bulrush vegetation. It is anticipated that 0.002 acre of vernal pool and 0.019 acre of salt marsh bulrush vegetation would be temporarily impacted. The permanent impacts to sensitive natural communities would be to 0.005 acre of vernal pools.

With implementation of PF-BIO-2 through PF-BIO-5, PF-BIO-7, PF-BIO-9, PF-BIO-12, PF-BIO-14, PF-WQ-1 through PF-WQ-3, AMM-BIO-1 through AMM-BIO-3, and MM-BIO-1, impacts to environmentally sensitive natural communities would be considered less than significant with mitigation incorporated.

c) Less Than Significant Impact with Mitigation Incorporated

An aquatic resources field survey was performed in February 2022 adjacent to SR 12. Aquatic features were delineated from PM 7.7 to PM 8.9 at Scally Lane. Sample points were established for each given aquatic resource type to characterize wetlands and other waters of the United States for the Project (Caltrans 2022h). Within the ROW, approximately 14.08 acres of potentially jurisdictional waters of the United States were identified, including 11.10 acres of wetlands and 2.98 acres of other waters. The aquatic resources field survey will be verified by USACE during the design phase when the Project design is more refined.

The Project would temporarily impact 0.22 acre and permanently impact 0.07 acre of potentially jurisdictional wetlands, and temporarily impact 0.52 acre and permanently impact 0.04 acre of potentially jurisdictional other waters (Table 2-2) within the Project footprint. These temporary impacts would occur during vegetation clearing, dewatering activities, replacement of culverts, and other drainage improvements. Permanent impacts include shading of the bed and banks of the creeks from bridge widening, placement of rock slope protection at culvert outlets, and shoulder widening.

Table 2-2. Impacts to Potential Wetlands and Other Waters

| Potential Waters of the United States | Temporary Impacts (acres) | Permanent Impacts (acres) |
|---------------------------------------|---------------------------|---------------------------|
| Wetlands | 0.201 | 0.015 |
| Estuarine and Marine Wetland | 0.019 | 0 |
| Freshwater Emergent Wetland | 0.180 | 0.010 |
| Vernal Pool | 0.002 | 0.005 |
| Other Waters | 0.380 | 0.063 |

| Potential Waters of the United States | Temporary Impacts (acres) | Permanent Impacts (acres) |
|---------------------------------------|---------------------------|---------------------------|
| Culverted Waters | 0.056 | 0 |
| Drainages | 0.209 | 0.023 |
| Creeks | 0.115 | 0.040 |
| Total | 0.581 | 0.078 |

Note: Totals are approximate due to rounding. Acreages are preliminary pending completion of protocol-level delineation of aquatic resources.

As part of MM-BIO-1, Caltrans will compensate for wetland and waters of the United States that are filled or disturbed as a part of the proposed Project to ensure no net loss of habitat functions and values. During the design phase, Caltrans will determine the mitigation ratios in coordination with the appropriate state and federal agencies. At a minimum, the compensation will be at a 1:1 ratio and will be accomplished through a combination of onsite mitigation and/or purchase of mitigation credits. Development of a Mitigation and Monitoring Plan is a requirement of the regulatory permits and will include a description of the offsite and onsite restoration. The Mitigation and Monitoring Plan will be developed and tailored for the proposed mitigation site before construction.

With the implementation of PF-AQ-1, PF-BIO-1 through PF-BIO-4, PF-BIO-7, PF-BIO-9, PF-BIO-13, PF-WQ-1 through PF-WQ-3, AMM-BIO-1, AMM-BIO-3, MM-BIO-1, and MM-BIO-2, the Project would have a less than significant impact with mitigation incorporated on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, and coastal areas) through direct removal, filling, hydrological interruption, or other means.

d) Less than Significant Impact

Suisun Bay marshlands are found on the southern side of SR 12 in two locations within the Project limits, including near Union Creek and near Denverton Creek. These marshlands provide a wildlife dispersal corridor, including habitat to migrating waterfowl. The BSA contains transition habitat with grassland adjacent to marsh, which is important habitat for salt marsh harvest mouse. The highway hinders movement and dispersal of small animals due to high traffic volumes and concrete barriers in the median. There are existing cross-culverts that may provide a link for aquatic species and species that use grassland habitat for dispersal. Essential fish habitat in Union Creek or Denverton Creek does not extend into the BSA; however, these streams provide aquatic habitat and dispersal for western pond turtle, tricolored blackbird, and other wildlife. The Project would replace the existing K-rail with concrete barriers Type 60M, which would not constitute a change compared to

existing conditions. The K-rail has been in place for at least 10 years and represents the current environmental baseline. The Project would not construct any new permanent barriers to wildlife movement or otherwise interfere with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites from existing conditions.

Construction activities and WEF (PF-BIO-5) would temporarily preclude wildlife from the six culvert replacement work areas. In addition, a temporary creek diversion system would be used at both Union Creek and Denver Creek while abutment wingwalls are built for the bridges. The temporary creek diversion system would be removed after Project completion; following Project completion, all disturbed areas would be restored. Therefore, post construction, the Project is not expected to affect the habitat's long-term suitability to support wildlife corridors or other animal movements. With AMM-BIO-9, Caltrans would coordinate with USFWS and CDFW to determine which culvert replacement location(s) would best be designed to facilitate passage for the California tiger salamander.

Impacts to migratory wildlife corridors would be less than significant. Implementation of PF-BIO-4, through PF-BIO-6, PF-BIO-9, PF-BIO-12, PF-BIO-17, PF-BIO-18, and AMM-BIO-9 would further minimize potential impacts to wildlife passage.

e) No Impact

The Project would not conflict with any local policies or ordinances protecting biological resources. No trees would be removed during the Project; therefore, there would be no impact.

f) Less Than Significant Impact

The Project limits are located within the Solano Multispecies Habitat Conservation Plan (Solano HCP) (Solano County Water Agency 2012). The Solano HCP was developed to support the issuance of an incidental take permit required by the March 1999 Solano Project Contract Renewal Biological Opinion between the USFWS and Bureau of Reclamation. The Solano HCP covers approximately 557,000 acres of Solano County. The HCP ensures compliance with both state and federal endangered species regulations while accommodating future urban growth and development and ongoing maintenance and operations of existing public and private facilities within Solano County.

The biological project features and AMMs as listed in Appendix A are consistent with those outlined in the Solano HCP, therefore resulting in a less than significant impact.

AVOIDANCE AND MINIMIZATION MEASURES

AMM-BIO-1: Biological Monitoring. The agency-approved biologist(s) would be onsite during vegetation clearing, installation of wildlife exclusion (WEF), initial ground-disturbing activities in previously undisturbed areas, installation of temporary creek diversion systems and dewatering, work that occurs in wetlands or in waters below Mean Higher High Water elevation in tidally influenced areas, and operation of loud equipment within 300 feet of brackish marsh areas, and thereafter when construction activities occur that could result in take of sensitive wildlife. The agency-approved biologist(s) would keep copies of applicable permits in their possession when onsite.

AMM-BIO-2: Pre-construction Surveys. Before initial ground-disturbing activities, the agency-approved biologist(s) would conduct work area surveys, including for special-status wildlife species. Focused surveys would be conducted 48 hours before construction and daily as needed.

AMM-BIO-3: Work Windows. The following measures would be implemented in and adjacent to delineated wetland areas in the Project area:

- Work within upland habitat for California tiger salamander would occur between March 1 and November 30.
- Work within 250 feet of vernal pools would occur between May 1 and November 1.
- Work in wetlands or other waters of the United States would be scheduled between June 1 and October 31.
- Work in estuarine and marine wetlands, would not occur within 2 hours before or after extreme high tide events (6.5 feet above Mean Lower Low Water elevation or greater as determined from the nearest NOAA tidal gage station to the activity) when the marsh plain is inundated.

AMM-BIO-4: California Clapper Rail and California Black Rail Pre-Construction Survey. Where California black rail habitat is present within 300 feet of the BSA or California clapper rail habitat is present within 700 feet of the BSA, or as determined by CDFW, a pre-construction survey to determine if the species are present would be conducted for work occurring between February 1 and August 31. Specific survey requirements and timing would be determined in consultation with USFWS and CDFW.

If breeding California clapper rail or California black rail are determined to be present, Caltrans will immediately consult with USFWS and/or CDFW and establish an appropriate buffer for construction activities that could cause harassment during the rail nesting season. Caltrans would also implement California clapper rail or California black rail protection measures resulting from the consultation.

AMM-BIO-5: Listed Plant Surveys. Botanical surveys would be conducted in areas of suitable habitat for rare plant species during the appropriate blooming season(s). If a listed plant species is discovered in an area where there would be ground-disturbing activities, the location would be marked or fenced for avoidance. Ground-disturbing work near special-status plant species would proceed under supervision of an agency-approved biologist.

AMM-BIO-6: Swainson's Hawk Pre-Construction Surveys. If construction activities occur during the Swainson's hawk nesting season (March 15 to September 15), Caltrans would conduct focused Swainson's hawk surveys during the spring prior to construction, using guidelines such as the one set forth in the *Recommended Timing And Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). If an active nest is discovered within 0.5 mile of the Project area, Caltrans would immediately stop any work that has potential to result in take of Swainson's hawk and coordinate with CDFW for further guidance.

AMM-BIO-7: Western Burrowing Owl Pre-Construction Surveys. An agency-approved biologist(s) would conduct pre-construction surveys for western burrowing owls prior to the breeding season (February 1 through August 31), including inspecting the job sites and adjacent areas, within 500 feet, for burrows with typical characteristics such as owl pellets, feathers, or white markings.

If burrowing owl activity is observed in locations planned for excavation and an adequate buffer cannot be established during the non-breeding season (September 1 through January 31), resident and migrant wintering burrowing owls may be evicted from the construction area using passive relocation techniques, including potentially providing suitable alternative burrows located within 330 feet of the occupied burrows that can be protected during Project construction. Prior to construction, Caltrans would prepare an Exclusion Plan for review and approval by CDFW.

AMM-BIO-8: Pre-Construction Bat Surveys and Avoidance Measures. The agency-approved biologist would conduct a visual inspection and habitat assessment for potentially suitable bat roosting habitat during the design phase of the Project and prior to construction.

If suitable bat roosting habitat is identified during survey in design phase, Caltrans would consider methods to offset permanent impact to habitat.

Assessments of bridges would inspect all open crevices. The pre-construction bat survey must be conducted during one of the following two time periods:

- March 1 to April 15
- August 31 to October 15

If the habitat assessment reveals suitable bat habitat in trees and tree trimming is scheduled from April 16 through August 30 and/or October 16 through February 28, then presence/absence surveys would be conducted 2 to 3 days before tree trimming. If the presence/absence surveys do not find bats, then tree trimming may be conducted. If the presence/absence surveys indicate bat occupancy, the occupied trees would be trimmed during an agency-approved period.

If the habitat assessment reveals suitable roosting habitat for bats, the appropriate focused surveys and exclusionary measures would be implemented prior to construction during an agency-approved period. If Caltrans identifies roosting bats through the pre-construction survey, Caltrans' biological staffs would submit a bat exclusionary plan for regulatory agencies' approval prior to construction.

AMM-BIO-9: Culvert Design. Prior to construction, Caltrans would coordinate with USFWS and CDFW to determine which culvert replacement location(s) would be designed to facilitate passage for California tiger salamander and other similar wildlife.

AMM-BIO-10: Standard Guardrail Feature for Wildlife Crossings. Caltrans would incorporate gaps at regular intervals along the proposed permanent concrete barrier (Type 60M) to enhance wildlife passage (Figure 1-4). This interval would be determined in coordination with regulatory agencies in the design and permitting process.

AMM-BIO-11: Fish Passage Assessment. A first pass and, if necessary, second pass assessment would be conducted at all stream crossings in the Design phase of the Project. Caltrans would submit the assessment to the CDFW and add it to the CALFISH database. If any fish passage barrier is identified, remediation would be designed in consultation with CDFW. The Project would comply with Fish and Game Code section 5901 and would not install or maintain any device or structure that impedes the passing of fish up and down stream of SR 12.

MITIGATION MEASURES

MM-BIO-1: Compensation to Offset Project Permanent Impacts. To offset permanent impacts from the Project, Caltrans will implement a compensation package based on the estimated impacts on protected natural resources, including wetlands, waters, and suitable habitat in the range of the listed species. Compensation will be determined in coordination with USFWS, USACE, RWQCB, CDFW, and/or BCDC during the design phase. At a minimum, the compensation will be a 1:1 ratio and will be accomplished through a combination of onsite mitigation and/or purchase of mitigation credits. Compensation will include any one or a combination of the following approaches:

- Offsite mitigation through the purchase of credits at an approved conservation bank(s)
- Development of a compensation plan that will provide in-lieu funding to a nearby restoration program or restoration project that would create, restore, preserve, or enhance resources similar to those adversely affected by the Project
- Onsite restoration within the Caltrans ROW

The Mitigation and Monitoring Plan will be developed and tailored for the proposed mitigation site before construction.

Compensation for temporary impacts on protected natural resources will be achieved through onsite in-kind habitat restoration to return the site to pre-construction conditions or better.

Caltrans will provide a Funding Assurance Letter to the appropriate regulatory resource agencies stating that sufficient funds for California tiger salamander habitat compensation have been budgeted.

MM-BIO-2: Wetland Mitigation Monitoring. After construction, Caltrans will monitor onsite vegetation at temporarily impacted wetland habitats and where any additional wetland enhancement or restoration is implemented as compensatory mitigation. Reports to environmental regulatory agencies on the status of monitoring following Project completion will be submitted as determined in Project permits and authorization. The Caltrans mitigation requirement will be considered satisfied once the target acreage of wetland habitat to be restored is successful, as determined and approved by the regulatory agencies requiring compensatory mitigation.

2.3.5 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? | No Impact |
| 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 formal cemeteries? | No Impact |

CEQA SIGNIFICANCE DETERMINATIONS FOR CULTURAL RESOURCES

This section summarizes the findings of the Section 106 Closeout Memo prepared by Caltrans (Caltrans 2022g). The Section 106 Closeout Memo summarizes the Historic Properties Survey Report and an Archaeological Survey Report prepared by Caltrans as part of its identification efforts. Caltrans determined a finding of no historic properties to be affected (Caltrans 2022g). No further archaeology or architectural history studies are required at this time.

a, b, c) No Impact

There are no known archaeological or historical resources known to be present within the area of potential effects; therefore, the proposed Project would not affect cultural resources and would result in no impact. Implementation of PF-CULT-1 and PF-CULT-2 would reduce potential impacts to undiscovered cultural resources.

2.3.6 Energy

Would the Project:

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

CEQA SIGNIFICANCE DETERMINATIONS FOR ENERGY

An energy analysis report (Caltrans 2022c) was completed for the Project. This section summarizes the findings of this report.

a) Less Than Significant Impact

Activities that consume energy also generate byproducts. Greenhouse gases (GHGs) are the most closely studied byproducts of energy consumption because they are linked to climate change (also refer to Section 2.1.8, Greenhouse Gas Emissions). To assess gasoline and diesel consumed by construction equipment and vehicles, the Road Construction Emissions Model, version 9.0.0, provided by the Sacramento Metropolitan Air Quality Management District was used to quantify carbon dioxide (CO₂) emissions, and vehicle miles traveled (VMT) of workers' vehicles. In addition, U.S. Environmental Protection Agency (USEPA) GHG equivalencies formulas were used to convert GHG and VMT to fuel volumes. It was assumed that diesel would be used by construction vehicles and equipment, while gasoline would be used during a worker's commute. A summary of energy usage in terms of fuel consumption is shown in Table 2-2.

Table 2-3. Construction Equipment and Vehicle Fuel Consumption

| Diesel (gallons) | Gasoline ^[a] (gallons) |
|---------------------|--------------------------------------|
| 67,156.39 | 4,191.48 |

^[a] Gasoline fuel consumption was adjusted to account for the final Safer Affordable Fuel-Efficient (SAFE) Rule.

Construction activities would be short-term and would not increase roadway capacity on SR 12 that could affect energy use. During construction, BMPs, as described under PF-AQ-3 and PF-Energy-1, would be implemented for energy efficiency of construction equipment. Operation of the Project would have minimal energy

consumption pertaining to routine maintenance. The impact would be less than significant.

b) No Impact

The Project would resurface the pavement on both mainline traveled ways and shoulders and reconstruct two bridges along SR 12. Traffic volumes and types of vehicles using the roadway would not change from existing conditions. In addition, the Project would not conflict with state and local plans for renewable energy and energy efficiency; therefore, there would be no impact.

2.3.7 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 geologic, seismic, and palaeontologic analysis report was completed for this Project (Caltrans 2022d). This section summarizes the findings of this report.

The Project site is on SR 12 from 0.5 mile east of Walters Road/Lawler Ranch Parkway to 0.5 mile east of Shiloh/Lambie Road in Solano County. Geologic mapping of the Project alignment indicates that the Project site is underlain by engineered fill (roadway embankment) overlaying Quaternary fan and basin deposits. The U.S. Geological Survey Quaternary Faults and Folds Database (2006) indicates that the historically active Green Valley fault lies approximately 9.3 miles west of the site (Caltrans 2022d).

a, b, c, d, e) No Impact

The Project would not expose the public to significant geologic or seismic hazards. While strong ground shaking may occur at the site, proposed Project elements pose no additional impacts to the public. The Project would not expose the public to fault rupture or seismically induced slope instability or liquefaction. There are no hazards due to collapsible or expansive soils, erodible soils or landslides. Septic tanks or alternative wastewater disposal systems are not proposed for this Project. There would be no impact.

f) No Impact

Native Quaternary deposits throughout the Project site may contain fossils below 5 feet, however Project elements would be confined to the roadway prism and not impact native soils (Caltrans 2022d). There would be no impact on a unique paleontological resource or site, or unique geologic feature.

2.3.8 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? | No Impact |

CEQA SIGNIFICANCE DETERMINATIONS FOR GREENHOUSE GAS EMISSIONS

A construction GHG emissions analysis memorandum (Caltrans 2022e) was completed for the Project. This section summarizes the findings of this review.

a) Less Than Significant Impact

Construction-generated GHG includes emissions resulting from material processing by onsite construction equipment, workers commuting to and from the Project site, and traffic delays due to construction. These GHG emissions would be produced at different rates throughout the Project depending on the activities involved at various phases of construction.

Based on available Project information, the construction-related GHG emissions were calculated using the Road Construction Emissions Model, version 9.0.0, provided by the Sacramento Metropolitan Air Quality Management District. The analysis was focused on vehicle-emitted GHG. CO₂ is the single most important GHG pollutant due to its abundance when compared with other vehicle-emitted GHGs, including methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), and black carbon.

For a construction duration of 16 months, the total amount of CO₂ produced as a result of construction was estimated to be 698.94 tons. Table 2-3 summarizes the construction-related emissions, including the total carbon dioxide equivalent (CO₂e) emissions.

Table 2-4. Construction-related GHG Emissions

| CO₂ (tons) | CH₄ (tons) | N₂O (tons) | Total CO₂e (metric tons) ^[a] |
|--|--|--|---|
| 698.94 | 0.13 | 0.03 | 645.12 |

^[a] CO₂e presents the total emissions from all GHG parameters (i.e., CO₂, CH₄, and N₂O). Gases are converted to CO₂e by multiplying by their global-warming potential. Specifically, global-warming potential is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO₂.

Implementation of PF-AQ-2, PF-AQ-3, PF-Energy-1, and PF-GHG-1 would reduce GHG emissions from construction activities. In addition, because of 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 during operation; therefore, the impact would be less than significant.

b) No Impact

The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The Project would not increase roadway capacity or contribute to a long-term increase in GHG emissions. Therefore, there would be no impact.

2.3.9 Hazards and Hazardous Materials

Would the Project:

| Question | CEQA Determination |
|---|------------------------------|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | Less Than Significant Impact |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | Less Than Significant Impact |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | 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 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? | Less Than Significant 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? | Less Than Significant Impact |

CEQA SIGNIFICANCE DETERMINATIONS FOR HAZARDS AND HAZARDOUS MATERIALS

a, b) Less Than Significant Impact

The proposed widening of the Union Creek and Denver Creek bridges would necessitate a bridge survey that ascertains the presence or absence of asbestos-containing material in the bridge concrete to be disturbed. In addition, the proposed roadway shoulder widening would require a site investigation that helps determine what regulatory requirements, if any, would be applied to the excavated soil if it is to be reused as fill material within the Project limits or disposed of at a landfill. The bridge survey and site investigation would be planned and conducted during the Project's design phase. Depending upon the findings of the bridge survey and site investigation, appropriate hazard mitigation and waste management special provisions would be prepared and included in the Project specifications. With

implementation of PF-HAZ-1 and PF-HAZ-2, the impact would be less than significant.

c, d) No Impact

There are no schools located within a 0.25-mile radius of the Project site. In addition, the Project area is not listed on any hazards or hazardous waste sites compiled pursuant to Government Code Section 65962.5; therefore, there would be no impact.

e) Less Than Significant Impact

The Project is located approximately 1.25 air-miles from Travis Air Force Base (AFB). Due to the length of the Project, multiple noise contours established by the Travis AFB *Air Installation Compatible Use Zone Study* are within the Project area and range from 60 to 79 decibels (Travis AFB 2009). Noise levels associated with the use of construction equipment with occasional air traffic going to and from Travis AFB and vehicle traffic along SR 12 would be considered excessive at times. There are no people residing within the area subject to these noise levels, and construction workers would use earplugs or other sound-dampening devices in accordance with Occupational Safety and Health Administration guidelines. The impact would be less than significant.

f, g) Less Than Significant Impact

Construction and operation of the Project would not significantly interfere with an emergency evacuation or response plan. During construction, the Project would implement a TMP (PF-TRA-1) ensuring that one-way traffic controls would be used during construction to maintain access for police, fire, medical services, and the traveling motorist. Emergency response would receive priority through the Project area in the event of a medical emergency, wildfire, earthquake, or other evacuation effort. The impact would be less than significant.

2.3.10 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 groundwater quality? | Less Than Significant Impact |
| b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | No Impact |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: | No Impact |
| 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 off-site; | 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 water quality study was completed by Caltrans (Caltrans 2021a) for the Project in March 2021, with another in February 2022 (Caltrans 2022f). A summary of the findings of this analysis is presented here.

The Project is located within the San Francisco Bay Region Water Quality Control Board. The Project is located within the Union Creek Frontal Suisun Bay Estuaries subwatershed of the Wooden Valley Creek Frontal Suisun Bay Estuaries watershed, which is part of the hydrologic sub-area named Suisun Slough (207.23) of the Suisun Hydrologic Unit (Caltrans 2021a). This subwatershed is part of a hydrologic sub-area that encompasses approximately 100,894 acres (Caltrans 2021a). Zoning uses in this watershed include agricultural preserve and marsh protection (Solano County

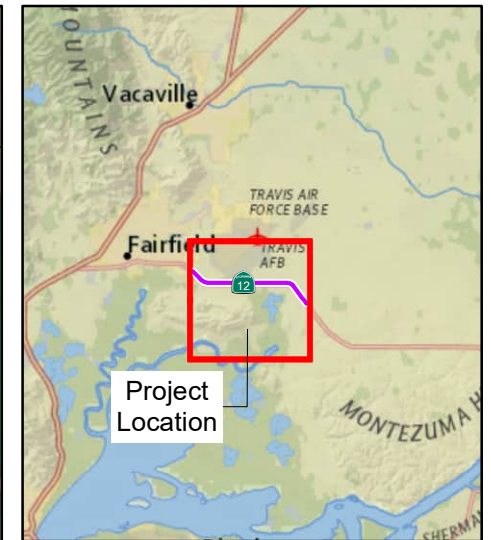
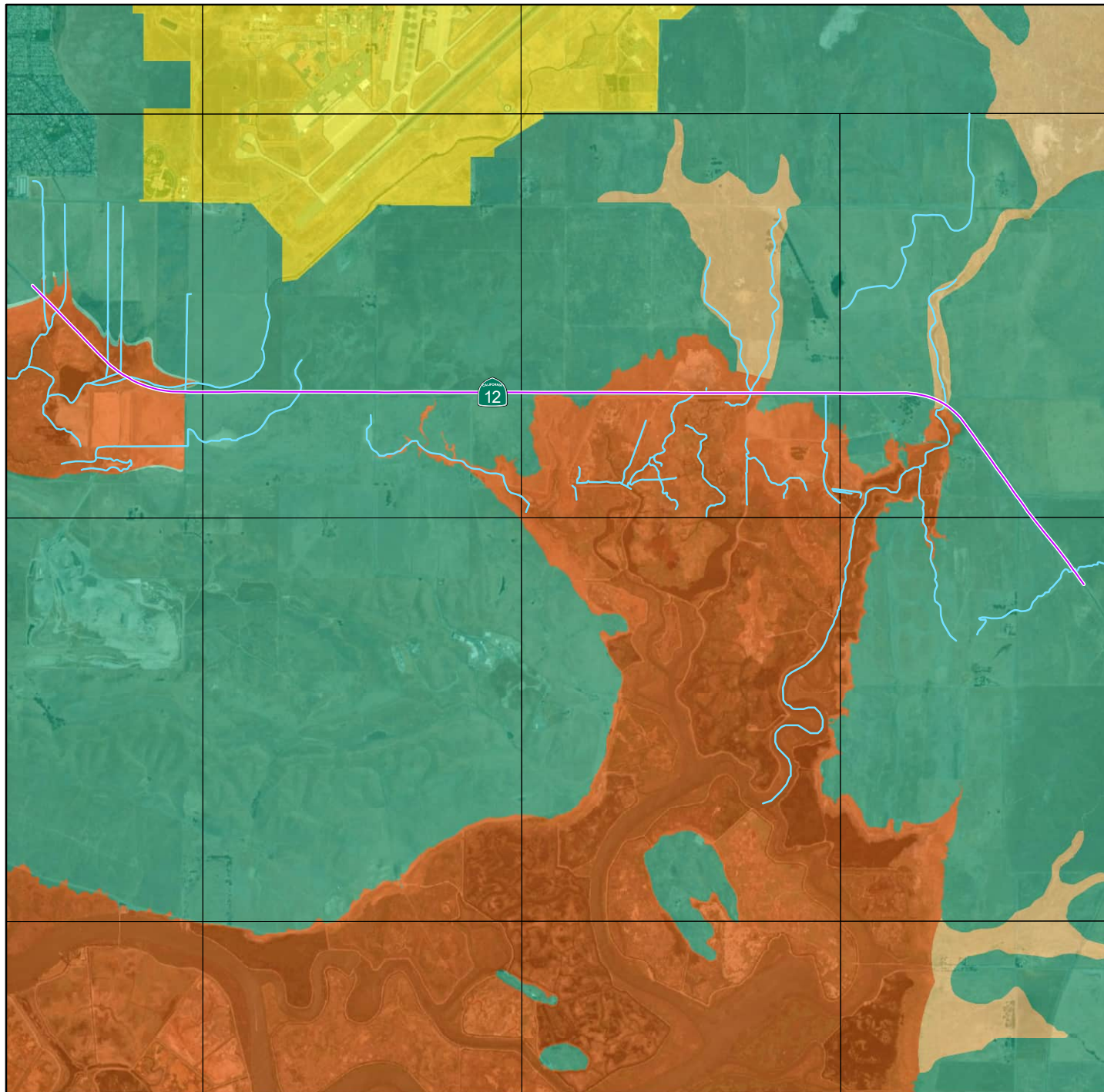
n.d., 2017). Receiving waters of the watershed are Union Creek, Denverton Creek, Suisun Slough, and Montezuma Slough. All of these receiving waters ultimately discharge to Suisun Bay, which is located approximately 7 miles south of the Project (Caltrans 2021a). According to the Calwater Watershed information, the Project is located within a high-risk receiving watershed area (Caltrans 2021a).

Per Federal Emergency Management Agency Flood Insurance Rate Maps (06095C0476E, effective May 4, 2009; 06095C0477F, effective August 3, 2016; 06095C0482F, effective August 3, 2016; 06095C0484F, effective August 3, 2016; and 06095C0481F, August 3, 2016) the Project is located within a Zone A, Zone AE, and Zone X floodplain. This Zone AE floodplain has a base flood elevation of 10 feet above mean sea level (FEMA 2021). Figure 2-2 shows the floodplain in the Project area. Zone AE floodplains indicate areas inundated with a 1 percent annual chance of flooding (100-year flood).

a) Less Than Significant Impact

The Project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Multiple water bodies are located within and around the Project vicinity, of which Suisun Bay and Suisun Slough are on the 303(d) list of impaired water bodies for California.

The State Water Resources Control Board issued a statewide CGP for construction activities (2009-0009-DWQ, CAS000002, as amended by 2010-0014-DWQ and 2012-0006-DWQ). The CGP applies to stormwater discharges from land where clearing, grading, and excavation result in a disturbed soil area of 1 acre or greater. Projects subject to the CGP require a SWPPP per Caltrans Standard Specification 13, Water Pollution Control. The disturbed soil area for the Project would be approximately 2.6 acres, and the post-construction treatment area (new net impervious area) would be approximately 0.42 acre (Caltrans 2022f). The Project would result in a disturbed soil area of approximately 2.6 acre; therefore, an SWPPP would be required as described in PF-WQ-1.



LEGEND

- Project Site
- National Hydrography Dataset
- Flood Insurance Rate Map Panels
- Flood Zone**
 - A - 1% Annual Chance Flood Hazard
 - AE - 1% Annual Chance Flood Hazard
 - D - Undetermined Flood Hazard
 - X - 0.2% Annual Chance Flood Hazard
 - X - Area of Minimal Flood Hazard

Data Sources:
 FEMA National Flood Hazard Layer
 USGS National Hydrography Dataset
 Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
 National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, Increment P Corp.

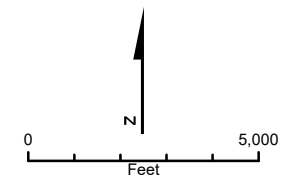


Figure 2-2
FEMA Flood Zones
 State Route 12
 Major Pavement Rehabilitation Project
 EA 04-2Q550, SOL-12-PM 7.9/14.1
 Solano County, California

Potential temporary impacts to existing water quality would result from active construction areas, which could lead to the release of fluids, concrete material, construction debris, sediment, and litter beyond the perimeter of the site. Implementation of PF-WQ-2, temporary construction site BMPs, would be used for sediment control and material management. A stream diversion system and dewatering area would be needed as a result of the proposed culvert work and work for wingwall construction at Union Creek bridge and Denver Creek bridge.

A 401 and 404 permit is expected to be required for this Project because of work and fill in waters of the United States. This Project would need to consider permanent water quality treatment BMPs, as discussed in PF-WQ-3. The net new impervious surface is calculated to be approximately 0.42 acre. It is anticipated that the RWQCB 401 certification would include requirements for post-construction stormwater treatment for the 0.42 acre of new impervious surface resulting from construction of the Project. A potential area for bioretention basin was identified near PM 14.03 and would be confirmed in a later Project phase. It would treat approximately 0.48 acre of impervious surface area.

With implementation of PF-WQ-1 through PF-WQ-3, the Project would not substantially degrade surface water quality and the impact would be less than significant.

b) No Impact

The Project would have no effect to groundwater supplies or groundwater recharge areas in the Project vicinity. There would be no impact.

c(i), (ii), (iii), (iv)) No Impact

The Project would not substantially alter the existing drainage pattern of the Project site and would not result in substantial erosion or siltation. The Project would not result in an increase of surface runoff, create runoff that would exceed existing storm drain systems, or create substantial additional sources of polluted runoff. The Project would not impede or redirect flood flows. There would be no impact.

d) No Impact

The Project limits are covered under the Federal Emergency Management Agency 100-year floodplain in several locations, as defined by the agency's Flood Insurance Rates Maps (numbers 06095C0476E, 06095C0477F, 06095C0481F, 06095C0482F, and 06095C0484F). Impacts to the flood system in the vicinity occur under existing conditions because of the existing roadway grades and drainage system of dikes, overside drains, cross-culverts, unlined ditches and swales. The Project proposes to rehabilitate the pavement surface by overlaying the existing pavement. The existing

inlets would also be adjusted to the new pavement elevation and the existing AC dikes and overside drains would be removed and replaced in-kind. The Project would not impact natural and beneficial floodplain values or support incompatible floodplain development. Potential impacts to existing roadway drainage facilities would be determined during a later phase of the Project, when more detailed information is provided. Therefore, the paving would have no impact on the floodplain.

The proposed Project is not in seiche or tsunami zones. There would be no impact.

e) No Impact

The Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. There would be no impact.

2.3.11 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? | Less Than Significant Impact |

CEQA SIGNIFICANCE DETERMINATIONS FOR LAND USE AND PLANNING

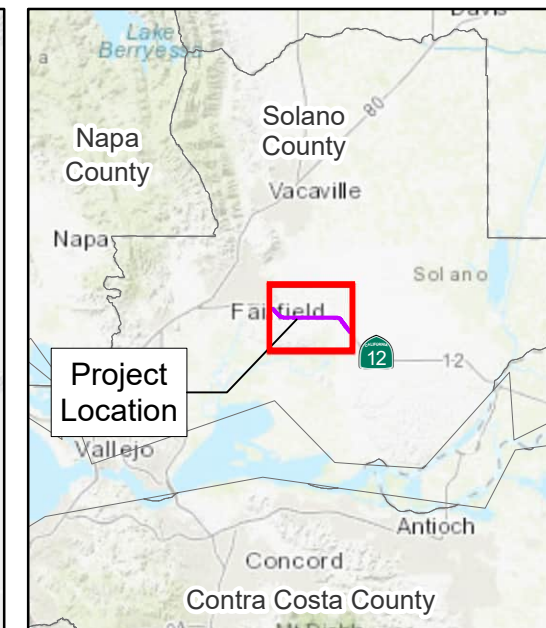
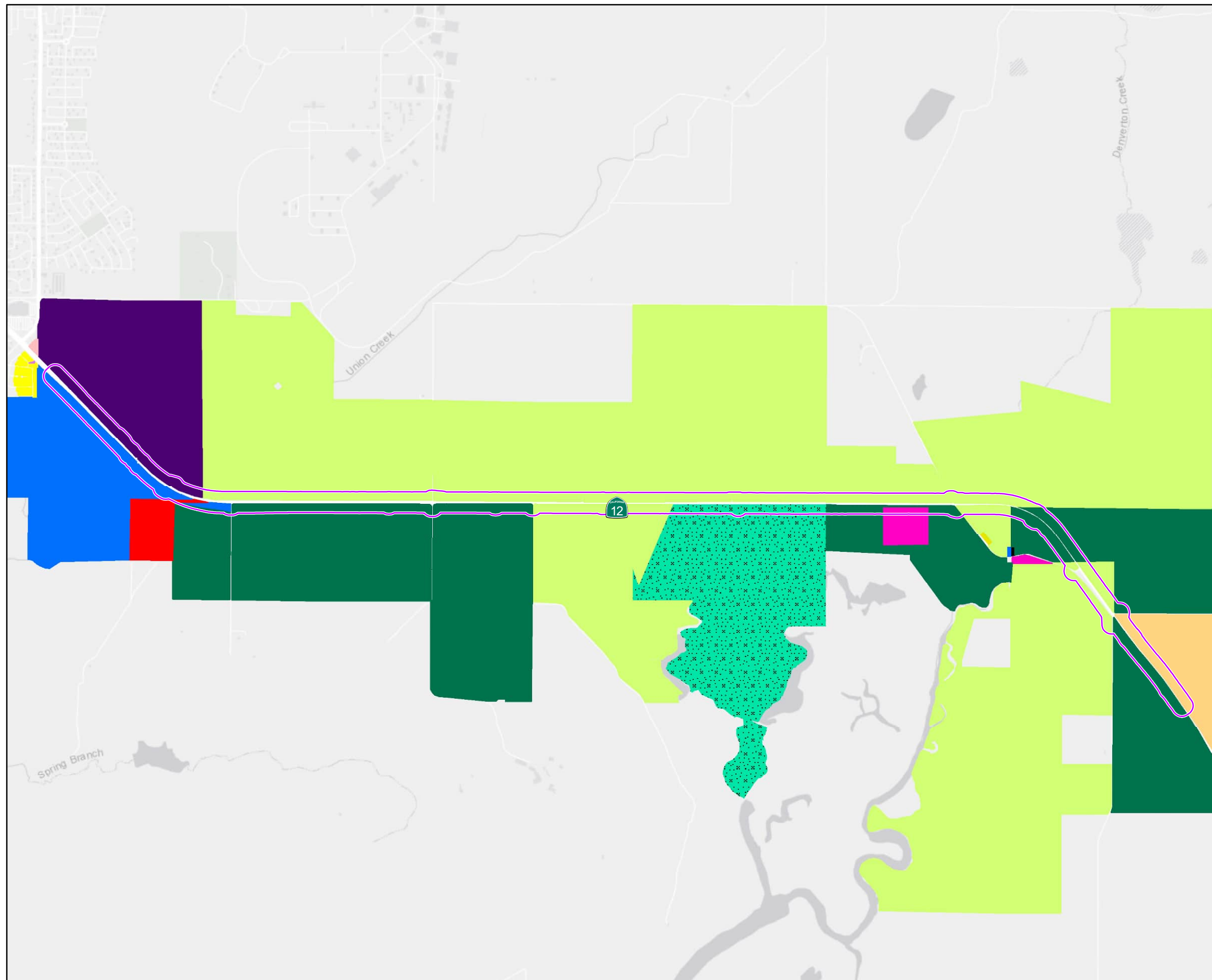
The Project site is on SR 12 from 0.5 mile east of Walters Road/Lawler Ranch Parkway to 0.5 mile east of Shiloh/Lambie Road in Solano County. The Solano County Zoning Map shows that the north side of the Project limits is zoned as Exclusive Agriculture 160 acres (A-160) and the south side of the Project limits is zoned as Marsh Preservation, Suisun Marsh Agriculture 160 acres (ASM-160), and Exclusive Agriculture 160 acres (A-160) (Solano County n.d.). Designated land uses within the Project limits are depicted in Figure 2-3, Land Use Map.

Portions of the proposed Project are within San Francisco Bay Conservation and Development Commission (BCDC) jurisdiction, as defined by the McAteer-Petris Act, the San Francisco Bay Plan, the Suisun Marsh Preservation Act of 1977, and the Suisun Marsh Protection Plan of 1976, which provide policies for protection in the Suisun Marsh Protection Plan Management Areas. The Primary Management Area consists of marsh and the Secondary Management Area consists of upland areas (Figure 2-4).

Per the McAteer-Petris Act, BCDC is responsible for granting or denying permits for any proposed fill; extraction of materials; or substantial changes in use of any water, land, or structure within the Commission's jurisdiction (California Government Code Section 66632). As defined in Section 66632, "fill" means earth or any other substance or material, including pilings or structures placed on pilings, and structures floating at some or all times and moored for extended periods, such as houseboats and floating docks. Fill also includes structures cantilevered over San Francisco Bay.

Relevant areas of BCDC jurisdiction for the Project may include the following:

- Section 66602 of the McAteer-Petris Act states, in part, "that maximum feasible public access, consistent with a proposed project, should be provided."



LEGEND

- Project Site
- Commercial Sales and Service
- Dry Farming Land
- Governmental and Miscellaneous
- Marsh Land
- Prop 19 - Intergeneration Trns
- Range and Watershed Land
- Range Land
- Rural Single Family Residential > 1 AC
- Single Family Residential
- Taxable Below Minimum Value
- Transitional Land
- Vacant Commercial Land
- Vacant Residential Land

Data Source:
Solano County Parcels July 2022

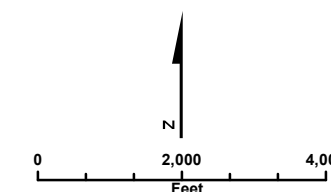
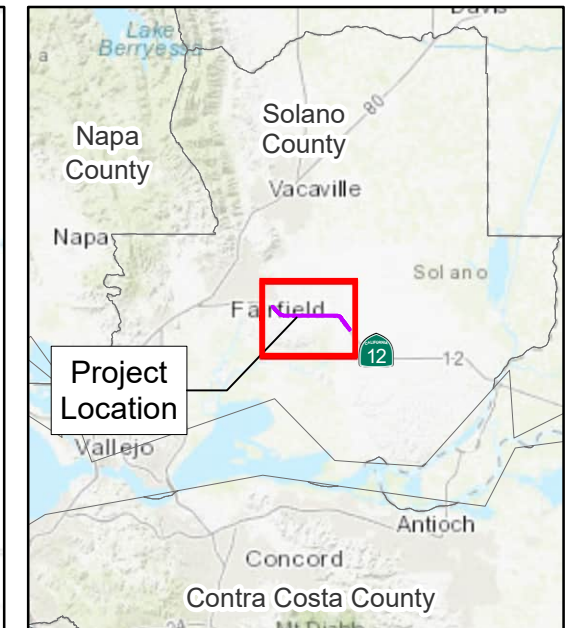
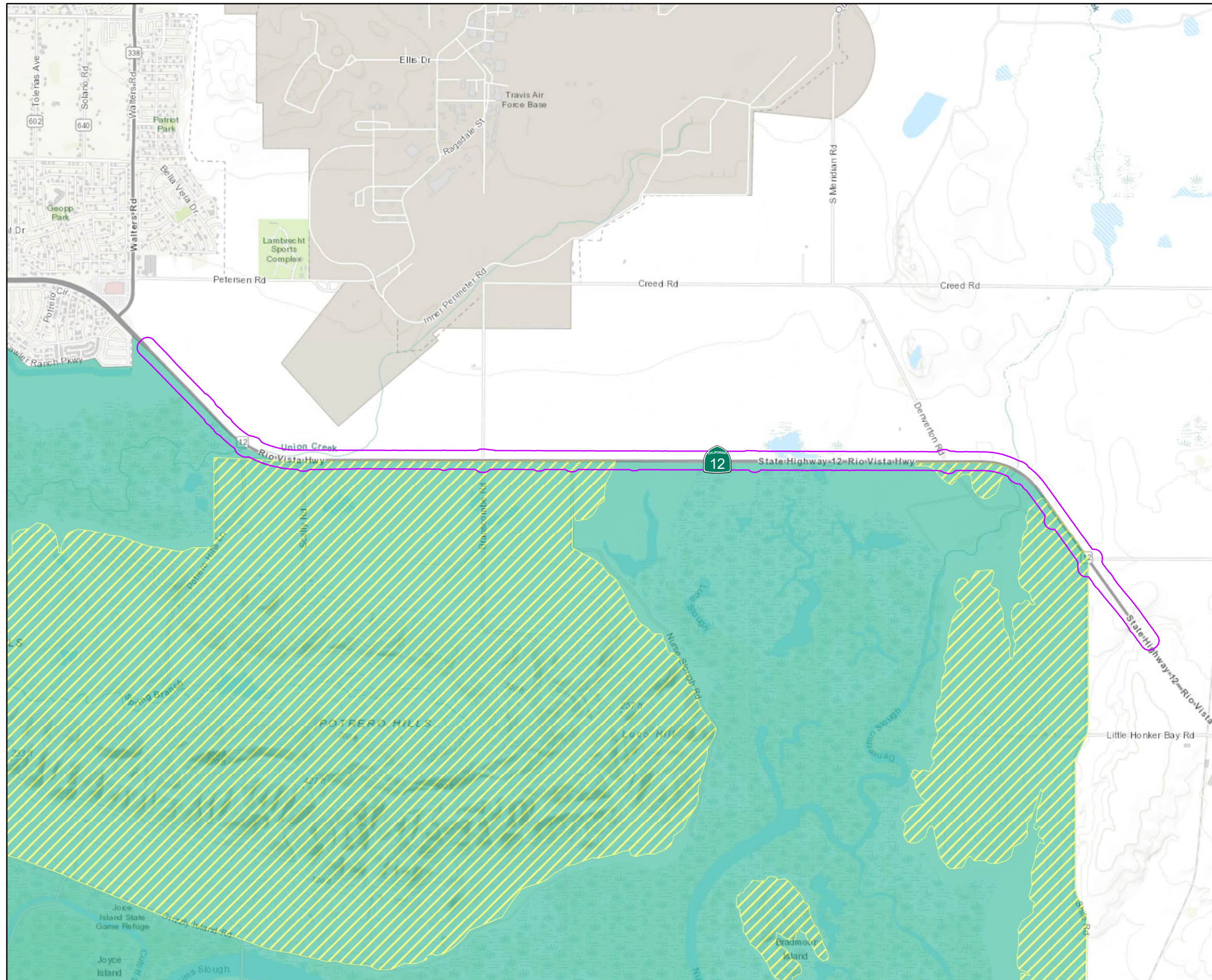


Figure 2-3
Land Use Map
 State Route 12
 Major Pavement Rehabilitation Project
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 Solano County, California



LEGEND

- Project Site
- Primary Management Area - Marsh
- Secondary Management Area - Upland

Data Source:
San Francisco Bay Conservation and Development Commission
December 1976

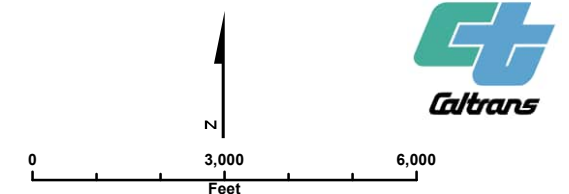


Figure 2-4
Suisun Marsh Protection Plan
Management Areas
State Route 12
Major Pavement Rehabilitation Project
EA 04-2Q550, SOL-12-PM 7.7/14.1
Solano County, California

- The Suisun Marsh Protection Plan Management Areas. The proposed Project includes work (bridge widening) that would cantilever over creeks that feed into Suisun Marsh.

BCDC's programmatic maintenance permit, Permit No. M1987.042.06, authorizes the maintenance of existing state highways including resurfacing, repair, and replacement of pavement surfaces on existing roads so long as the areas of the paved surfaces are not increased.

a) No Impact

The proposed Project involves rehabilitating the existing roadway and associated features to prevent future roadway damage and improve the safety of the traveling public. No changes in land use would occur from the proposed Project.

The Project would not physically divide an established community. Therefore, there would be no impact.

b) Less Than Significant Impact

Construction activities may occur within BCDC jurisdiction (temporary impacts), as would bridge widening (permanent impacts) to accommodate standard lane and shoulder width, as well as new, wider bridge railings that would cantilever over creeks that feed into Suisun Marsh, which would constitute fill. Temporary creek diversions would be used at Union Creek and Denverton Creek to provide dry work areas during bridge abutment wingwall construction. All activities would be temporary and construction materials would be staged in nearby staging areas outside of BCDC jurisdiction. All construction materials would be removed following Project completion and the Project area would be returned to its previous condition. There would be a less than significant impact.

The Project would comply with Solano County land use, transportation, and circulation goals as stated in the Solano General Plan (Solano County 2008). The Project would not cause a significant environmental impact because of conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, there would be no impact.

AVOIDANCE AND MINIMIZATION MEASURES

Because there would be no Project-related temporary or permanent impacts to land use in the proposed Project limits, no avoidance, minimization, and/or mitigation measures are proposed. The Project would require authorization from BCDC, and such authorization would include conditions for the Project to be consistent with

policies of the San Francisco Bay Plan, the Suisun Marsh Protection Plan, and the McAtteer-Petris Act.

2.3.12 Mineral Resources

Would the Project:

| Question | CEQA Determination |
|--|--------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | 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

Mineral resources mined or produced in Solano County include mercury, sand and gravel, clay, stone products, calcium, and sulfur (Solano County 2008). The western portion of the Project near Travis AFB falls within Mineral Resource Zones described in the California Surface Mining and Reclamation Act mineral land classification reports for Special Report 156 (California Department of Conservation 2022b). Near the east end of the Project by Shiloh/Lambie Road, the Project area falls in a mineral resource area zoned as MRZ-3; these are areas that contain mineral deposits of which the significance cannot be evaluated from current available data.

Approximately 1 mile from the Project site, one quarry has been identified by the California Department of Conservation, Office of Mine Reclamation, as follows: Potrero Hills Quarry (91-48-0004) (California Department of Conservation 2022c).

a, b) No Impact

The Project would not result in the loss of availability of a known mineral resource that would be of value or result in the loss of availability of a locally important mineral resource recovery site. Therefore, no impacts on mineral resources would result from the Project.

2.3.13 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 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | Less Than Significant Impact |

CEQA SIGNIFICANCE DETERMINATIONS FOR NOISE

The Project does not qualify as either a Type I or Type II project under 23 CFR 772. Therefore, noise abatement does not need to be considered, and a noise study report is not required (Caltrans 2022b).

a) Less Than Significant Impact

During construction, noise generated from construction activities should not exceed 86 decibels (maximum) at 50 feet from the job site between the hours of 9 p.m. and 6 a.m. as required by Caltrans Standard Specification 14-8.

The Project would implement PF-NOI-1 through PF-NOI-4 to ensure further reduction of temporary construction noise levels. The Project would not modify the existing number of travel lanes on SR 12, so traffic noise levels on SR 12 would not increase. There are no nearby residences; therefore, the Project would not expose residences near the Project area to excessive noise levels during construction or operation of the Project.

The Project would not cause a permanent, substantial increase in ambient noise level above existing conditions and noise generated from construction activities would be temporary, resulting in a less than significant impact.

b) Less Than Significant Impact

The Project would not create excessive groundborne vibration or groundborne noise levels. Increases in noise levels from construction activities would be temporary. Following construction, noise levels would not change from existing levels; therefore, impacts would be less than significant.

c) Less Than Significant Impact

Refer to Section 2.1.9, Hazards and Hazardous Materials, CEQA analysis question e), for information regarding excessive noise levels.

2.3.14 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

The proposed Project would improve existing transportation infrastructure and does not have elements that would directly or indirectly induce substantial unplanned population growth. Widening of the existing SR 12 shoulders and the Union Creek bridge and Denverton Creek bridge would comply with current Caltrans standards and improve safety for highway users. The Project would not increase the capacity of SR 12.

The proposed Project is consistent with the Solano County General Plan (Solano County 2008), the Regional Transportation Plan (MTC 2021), and the Solano County Comprehensive Transportation Plan 2040 (Solano Transportation Authority 2020), as well as regional policies and forecasts. The Project would improve transportation mobility and safety along the SR 12 highway corridor.

a, b) No Impact

The proposed roadway safety improvements would not induce population growth directly or indirectly, displace existing housing, or displace people, necessitating the construction of additional or replacement housing elsewhere. The proposed Project would rehabilitate the pavement and shoulders of the mainline roadway, the Union Creek bridge, and the Denverton Creek bridge to increase safety, extend the life of the existing pavement, and improve ride quality. There would be no impact.

2.3.15 Public Services

| Question | CEQA Determination |
|---|------------------------------|
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | N/A |
| Fire protection? | Less Than Significant Impact |
| Police protection? | Less Than Significant Impact |
| Schools? | No Impact |
| Parks? | No Impact |
| Other public facilities? | No Impact |

CEQA SIGNIFICANCE DETERMINATIONS FOR PUBLIC SERVICES

The Project is located on SR 12 from 0.5 mile east of Walters Road/Lawler Ranch Parkway to 0.5 mile east of Shiloh/Lambie Road in Solano County, California. The closest fire station is the Suisun City Fire Department located at 621 Pintail Drive, Suisun City, California 94585, approximately 1.8 miles northwest of the westernmost end of the Project site.

The closest police department is the City of Suisun Police Department located at 701 Civic Center Boulevard, Suisun City, California, 94585, approximately 3.5 miles west of the westernmost end of the Project site.

The Lawler Falls Park and Lawler Ranch Park are approximately 0.8 mile and 1.3 miles west of the westernmost end of the Project site, respectively. The Montebello Vista Park is approximately 1 mile north of the westernmost end of the Project site.

Crescent Elementary School and Suisun Elementary School are approximately 1.8 miles and 1.9 miles west of the westernmost end of the Project site, respectively. Dan O. Root II Health and Wellness Academy is approximately 1.1 miles northwest of the westernmost end of the Project site.

Other public facilities in the Project area are the Solano County Veteran's Service (approximately 4 miles west), the Macedonia Church of God in Christ (approximately 0.5 mile north), and the Irving H. Lambrecht Sports Complex

(approximately 1.6 miles northeast), all around the westernmost end of the Project site.

Public services and facilities are provided and maintained by local and county entities, including fire, police, emergency response, and public works.

a) Less Than Significant Impact and No Impact

The Project would not result in a use that would directly or indirectly induce population and employment growth in Solano County. Therefore, the Project would have no impact on schools, parks, or other public facilities. During construction, the Project would implement a TMP (PF-TRA-1), ensuring that one-way traffic controls would be used during construction to maintain access for police, fire, medical services, and traveling motorists. Emergency response would receive priority through the Project area in the event of a medical emergency, wildfire, earthquake, or other evacuation effort. Impacts on fire and police protection services would be less than significant.

2.3.16 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

The following recreational facilities are located in the Project vicinity:

SAN FRANCISCO BAY NATIONAL ESTUARINE RESEARCH RESERVE

The Rush Ranch Open Space is approximately 2 miles southwest of the Project site in the northeast edge of the Suisun Marsh, a vital component of the San Francisco Bay-Delta Estuary. The Rush Ranch Open Space provides 2,070 acres of open space and recreational and educational opportunities to thousands of visitors each year. Recreational opportunities include self-guided trails for hiking and bird and wildlife viewing. Rush Ranch is a working ranch and also contains a visitor center, blacksmith shop, and historical ranching equipment for its visitors to explore. The Solano Land Trust purchased the Rush Ranch in 1988 with a grant from the Coastal Conservancy, and in 2003, Rush Ranch was designated as part of the San Francisco Bay National Estuarine Research Reserve (Solano Land Trust 2021).

The San Francisco Bay National Estuarine Research Reserve comprises Rush Ranch and China Camp State Park, which is located in San Rafael. It protects over 3,700 acres of tidal marshes and undeveloped uplands that serve as research sites, outdoor classrooms, and recreational opportunities. The primary intent of the Reserve is to support tidal marsh restoration through research, water quality monitoring, education, and coastal stewardship (SFSU 2022).

HILL SLOUGH WILDLIFE AREA

Hill Slough Wildlife Area is located approximately 2 miles southwest of the Project site and contains approximately 1,700 acres of salt tidal marsh, sloughs, and upland grasslands. Hill Slough Wildlife Area provides recreational opportunities such as bird and wildlife viewing and fishing (CDFW 2022b).

GRIZZLY ISLAND WILDLIFE AREA

Grizzly Island Wildlife Area is located south of the Project site near Suisun Bay and Grizzly Bay. Grizzly Island Wildlife Area is approximately 12,900 acres and provides recreational opportunities such as bird and wildlife viewing, hiking, fishing, and hunting opportunities for waterfowl, dove, pheasant, tule elk, and rabbit (CDFW 2022c).

a, b) No Impact

There are no existing neighborhood or recreational parks nor other recreational facilities in the Project area (Solano County 2022). The Project would not impact the recreational facilities described here, nor would it require the construction or expansion of recreational facilities; therefore, there would be no impact.

2.3.17 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? | Less Than Significant Impact |
| b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? | Less Than Significant 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

SR 12 is an east-west route that connects Napa, Solano, Sacramento, San Joaquin and Calaveras counties and is used for local and interregional travel. Within Caltrans District 4, the corridor begins at the intersection of SR 29 and SR 12 at James Canyon in Napa County, and ends at the Rio Vista Bridge at the Solano/Sacramento County line. The corridor is approximately 30 miles long, intersecting SR 29, I-80, SR 113, SR 84, and SR 160, and is considered a major route for the eastern part of the state to access Napa and Sonoma counties. SR 12 connects the Bay Area and Central Valley and allows for the movement of a significant amount of goods while providing access to the Delta.

The Project extends from 0.5 mile east of Walters Road/Lawler Ranch Parkway to 0.5 mile east of Shiloh/Lambie Road from PM 7.7 to PM 14.1 in Solano County. Within the Project limits, SR 12 is a conventional highway with two lanes of travel, one in each direction. There are no high occupancy vehicle lanes along the route and no pedestrian facilities within the Project limits. Bicyclists are permitted on SR 12 and can ride on the shoulders. Existing shoulders are 8 feet wide within the Project area except at PM 10.3 where the shoulders are narrow down to 3 feet wide for approximately 1,400 feet and from PM 9.0 to PM 12.5, where an existing dike is placed within the paved shoulder width and the shoulders are narrowed to 7 feet wide.

a) Less Than Significant Impact

The Project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit roadway or pedestrian facilities, but would conflict with bicycle facilities as directed in Caltrans Director's Policy 37, Complete Streets (Caltrans 2021d). The Project would rehabilitate the pavement along SR 12

and upgrade the Union Creek and Denver Creek bridges and would support the goals outlined in the Transportation and Circulation element of the Solano County General Plan (Solano County 2008).

The Project would conflict with Director's Policy 37, Complete Streets (Caltrans 2021d). This policy requires that the Project, which is a maintenance project, provide "complete streets" facilities for pedestrians walking and bicyclists biking within the Project footprint.

The Project would provide 8 feet shoulders on the bridges and roadway between PM 9.0 and 12.5 within the Project footprint to accommodate bike traffic. These shoulders would be signed and striped as bike lanes. However, it would be difficult to provide pedestrian facilities as part of this Project for several reasons. There are currently no pedestrian facilities along this segment of the highway, making the addition of pedestrian facilities within the Project footprint non-functional as there would be no connectivity to other pedestrian facilities. Pedestrian access from Fairfield to Rio Vista would be dependent on other projects incorporating pedestrian facilities in this corridor, which violates the independent utility requirement for this design component. In addition, adding pedestrian facilities within the Project footprint would increase the amount of impervious surface area, adding drainage impact and requiring more avoidance, minimization, and mitigation measures. Finally, there are wetlands and protected species habitat adjacent to the roadway prism, so further expanding the road to accommodate pedestrians may create more substantial impact on biological resources. Therefore, adding additional bicycle and pedestrian facilities to this Project would not be preferable from a functionality and resource management standpoint.

Implementation of PF-TRA-1 would ensure minimal effects from construction activities to highway users. Therefore, impacts would be less than significant.

b) Less Than Significant Impact

During the construction phase, equipment hauling vehicles and construction workers would be traveling to and from the Project site and would generate a temporary increase in localized traffic until construction is completed. Construction would require lane and shoulder closures during non-peak hours and at night as per the lane closure windows provided by Caltrans District 4 Highway Operations. The Project would not increase vehicular capacity. Therefore, the Project would not result in any changes to VMT as the traffic capacity of SR 12 would not increase. Under CEQA Guidelines Section 15064.3, subdivision b, transportation projects that have no impact on VMT have a less than significant impact.

c) No Impact

The Project would not increase hazards because of a geometric design feature. The proposed Project does not include any design features or construction elements (such as sharp curves or dangerous intersections) that would substantially increase hazards. There would be no impact.

d) Less Than Significant Impact

The Project would not result in inadequate emergency access. The Project could generate short-term traffic congestion and delays, resulting from temporary lane closures of one lane along SR 12 throughout construction. One-way traffic control would be required during construction and detours are not anticipated.

In addition, the TMP (PF-TRA-1) would ensure continued access to emergency service providers along SR 12 during construction. Flaggers would give priority to emergency vehicles on SR 12 while construction activities occur. Therefore, the impact would be less than significant.

2.3.18 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 | No 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | No Impact |

CEQA SIGNIFICANCE DETERMINATIONS FOR TRIBAL CULTURAL RESOURCES

Caltrans contacted the Native American Heritage Commission electronically on December 2, 2020, and the Commission responded on December 12, 2020. Their letter concluded no sacred sites were identified and included a contact list of eight interested individuals or tribes. Native American consultation letters per Section 106 and Assembly Bill 52 guidance were sent electronically to the following contacts on February 24, 2021 (Caltrans 2022g):

- Daniel Gomez (Chairman) and Clifford Mota (Tribal Preservation Liaison), Cachil Dehe Band of Wintun Indians of the Colusa Indian Community
- Donald Duncan (Chairperson), Guidiville Indian Rancheria
- Leland Kinter (Tribal Historic Preservation Officer), Yocha Dehe Wintun Nation

Charlie Wright (Chairperson), Cortina Rancheria-Kletsel Dehe Band of Wintun Indians, was sent a letter by mail as no email was provided.

Follow-up phone calls were made on June 21, 2021, and messages left for all individuals describing additional bridge work that was added to the Project. No responses have been received.

a, b) No Impact

The Project would not cause a substantial adverse change in the significance of tribal cultural resources. No tribal cultural resources were reported in record searches; no response have been received from Native American groups or individuals regarding the presence of tribal cultural resources. Based on this report, there would be no impact.

PF-CULT-1 and PF-CULT-2, would be implemented if cultural resources or human remains are discovered during Project construction.

2.3.19 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 storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | No 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

The Project area is located on an established highway in Solano County where existing infrastructure is already in place. As described in Section 1.6.1, overhead utility wires are visible at PM 9.02, PM 9.90, and PM 13.56. Relocation of utilities is not anticipated.

a, b, c) No Impact

Construction of the Build Alternative would generate minor amounts of wastewater but would not exceed wastewater treatment requirements of the RWQCB due to requirements set forth in waste discharge requirements and in the Section 401 Water Quality Certification Permit. Utilities would not be relocated, and Caltrans would notify utility owners of the Project construction schedule (PF-UTIL-3). The Project would not increase the number of residents in the area because residential land uses are not proposed. The Project would not increase the demand for additional water supplies or wastewater treatment facilities. Therefore, no new or expanded water entitlements would be needed to serve the local community near the Project. There would be no impact.

d, e) No Impact

The proposed Project would not generate excessive demand for potable water supplies or services of a wastewater treatment provider. Further, solid waste created from the Project would be removed from the construction work areas and recycled or properly disposed of offsite. Where possible, materials from the site would be reused on the Project site or elsewhere. The Project would comply with local management and reduction statutes and regulations related to solid waste. The Project would not result in any substantial demands for solid waste disposal and would comply with federal, state, and local statutes regarding the disposal of solid waste.

Implementation of PF-UTIL-1 and PF-UTIL-2 would require the proper disposal of construction trash. Therefore, there would be no impact.

2.3.20 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 |
| 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

The Project area and surrounding land uses are not located within a very high fire hazard severity zone or local or state responsibility area (CAL FIRE 2021).

a) Less Than Significant Impact

The Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. As stated in Section 2.1.17, Transportation, a TMP would be developed during the design phase and would ensure priority for emergency responders traveling along SR 12 during construction activities and times of one-way traffic control. The TMP would also provide instructions for response and evacuation in case of an emergency. Therefore, the impact would be less than significant.

b, c, d) No Impact

The construction and operation of the proposed Project would not exacerbate wildfire risks, require the installation or maintenance of infrastructure that may exacerbate wildfire risk, or expose people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. The Project proposes to rehabilitate existing pavement and roadway shoulders along SR 12 and upgrade two bridges to be consistent with current Caltrans standards. The Project does not involve the occupation of habitable structures and does not include the installation of associated infrastructure that would exacerbate wildfire risk.

2.3.21 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 Impact 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? | No Impact |

CEQA SIGNIFICANCE DETERMINATIONS FOR MANDATORY FINDINGS OF SIGNIFICANCE

a) Less Than Significant Impact with Mitigation Incorporated

As discussed in Section 2.1.4, the Project would have the potential to result in significant impacts to biological resources that would be made less than significant with the proposed mitigation measures. The Project would implement AMMs and project features to reduce potential impacts on biological resources (Appendix A). In addition, MM-BIO-1 proposes compensatory mitigation to offset unavoidable Project impacts. Further, implementation of MM-BIO-2 would ensure mitigation requirements are met through the monitoring period of onsite vegetation at temporarily impacted wetland habitats and where any additional wetland enhancement or restoration is implemented as compensatory mitigation. The impact would be less than significant with mitigation incorporated.

b) Less Than Significant Impact

The Project would not increase roadway capacity, induce growth, or change land use patterns. All potential impacts would be minimized through the implementation of project features, AMMs, and mitigation measures. Table 2-4 provides a list and description of past, current and foreseeable projects in the proposed Project vicinity. Other highway improvement projects near SR 84, such as the Miner Slough Replacement Bridge Project, are anticipated to occur within a similar timeframe;

therefore, cumulative effects may occur (such as traffic detours and temporary community impacts). However, Caltrans routinely coordinates with regional transportation managers and local agencies to minimize impacts in the region resulting from construction of multiple planned projects. The short duration and limited scope of this Project would not contribute considerably to cumulative environmental impacts, and Project-related impacts to resources would be reduced with the proper implementation of project features, AMMs, and mitigation measures. Therefore, the Project would have less than significant impacts.

Past, current, and reasonably foreseeable future projects along the SR 12 corridor or adjacent to the Suisun Marsh would all undergo (or have undergone) separate environmental review and require separate environmental permitting from regulatory agencies. Although these and similar projects could result in impacts to habitat for protected special-status species, most current and future projects that affect species and their habitats are expected to be required to mitigate these impacts through the CEQA, California Fish and Game Code Section 1600, or Sections 401/404 Clean Water Act permitting processes. As a result, most projects in the region would mitigate their impacts, minimizing cumulative impacts to protected special-status species. With implementation of project features, AMMs, and mitigation measures, the Project would not make a considerable contribution to cumulative effects on federal- or state-listed species, and the impact would be less than significant.

Table 2-5 lists current and foreseeable projects in Solano County (Caltrans 2022i). These projects are considered along with past projects, the Build Alternatives, and the No-Build Alternative in the cumulative impact analysis.

Table 2-5. Past, Current and Foreseeable Projects

| Name | Location | Project Proponent | Proposed Uses | Status |
|--------------------------------|---|-------------------|--|------------|
| SHOPP ID: 20885 EA 0K100 | Solano County SR 12 – PM 2.21/25.78 | Caltrans | Enhance pedestrian safety by installing accessible pedestrian signal systems and countdown timers and upgrading crosswalk markings | Design |
| SHOPP ID: 23043 | Solano County SR 12 – PM 0/7.9 | Caltrans | Address 30.6 lane miles of pavement, asphalt pavement rehab, Class II Buffered bike lanes | Conceptual |
| SHOPP ID: 20648 | Solano County SR 12 – PM 14.1/20.68 | Caltrans | Address 16.1 lane miles of pavement, asphalt pavement rehab, Class I bike lane, crossing islands, new/modify crosswalks | Conceptual |

| Name | Location | Project Proponent | Proposed Uses | Status |
|---|---|-------------------|--|------------------------|
| SHOPP ID: 22189 EA 0W110 | In Fairfield and Suisun from Beck Avenue to Lawler Ranch Parkway/Walters Road SR 12 – R3.206/7.474 | Caltrans | Install flashing beacons, signal ahead warning signs and pavement markings, guard rails, and pedestrian access/sidewalks | Design |
| State Route 12 Roadway Resurfacing, Restoration and Rehabilitation Project EA 0J630 | Currie Road to Sacramento County Line in Solano County – PM 20.57/26.41 | Caltrans | Repair roadway pavement cracking, upgrade shoulders, travel lanes, vertical sight distances, cross slopes, and drainage systems to current standards Address existing flooding problems and upgrade to facilities for Americans with Disabilities Act compliance | Design |
| Paving and Widening Project EA 04-0T10U4 | Solano County PM 7.9/20.6 | Caltrans | Replaced AC surfacing at various locations while placing 0.1-foot AC overlay on the existing pavement | Completed 2011 |
| Median Barrier Project EA 04-3A6304 | Solano County PM 7.9/20.6 | Caltrans | Installed K-rails along the centerline of the highway with crash cushions and channelizers Project scope did not include pavement resurfacing | Completed 2007 |
| AC Digouts Project EA 04-0P7504 | Solano County PM 7.5/13.6 and 20.5/25.0 | Caltrans | Performed cold-planing of AC pavement and placement of hot mix asphalt | Completed October 2021 |

ID = identification

c) No Impact

Construction activities would temporarily increase criteria pollutant emissions and traffic. The Project would incorporate project features and AMMs throughout construction to minimize potential impacts to the human environment resulting from the construction of the Project. The Project would not have a substantial direct or indirect impact on the human environment; therefore, there would be no impact.

2.4 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the Earth's climate system. The Intergovernmental Panel on Climate Change, established by the United Nations and World Meteorological Organization in 1988, is devoted to 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 (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), and various hydrofluorocarbons (HFCs). CO₂ 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 CO₂ that is the main driver of climate change. In the U.S. and in California, transportation is the largest source of GHG emissions, mostly CO₂.

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.

2.4.1 Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

FEDERAL

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the Project level.

The National Environmental Policy Act (NEPA) (42 United States Code Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (FHWA 2019). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values— “the triple bottom line of sustainability” (FHWA n.d.). Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

The federal government has taken steps to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 United States Code Section 6201) as amended by the Energy Independence and Security Act of 2007, and the Corporate Average Fuel Economy (CAFE) Standards. This act established fuel economy standards for on-road motor vehicles sold in the United States. The U.S. Department of Transportation’s (USDOT) National Highway Traffic and Safety Administration sets and enforces the CAFE standards based on each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States. USEPA calculates average fuel economy levels for manufacturers and also sets related GHG emissions standards under the Clean Air Act. Raising CAFE standards leads automakers to create a more fuel-efficient fleet, which improves our nation’s energy security, saves consumers money at the pump, and reduces GHG emissions (USDOT 2014).

USEPA published a final rulemaking on December 30, 2021, that raised federal GHG emissions standards for passenger cars and light trucks for model years 2023 through 2026, increasing in stringency each year. This rulemaking revised lower emissions standards that had been previously established for model years 2021 through 2026 in the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part Two in June 2020. The updated standards will result in avoiding more than 3 billion tons of GHG emissions through 2050 (USEPA 2021a).

STATE

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to, the following:

EO S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to the following levels:

- Year 2000 levels by 2010
- Year 1990 levels by 2020
- 80 percent below year 1990 levels by 2050

This goal was further reinforced with the passage of Assembly Bill (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

Assembly Bill (AB) 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (CARB) create a scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.” The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code Section 38551(b)). The law requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

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

SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires CARB to set regional emissions reduction targets for passenger vehicles. The metropolitan planning organization (MPO) for each region must then develop a Sustainable Communities Strategy (SCS) that integrates transportation, land use, and housing policies to plan how it will achieve the emissions target for its region.

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

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

EO B-30-15 (April 2015): This EO establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMTCO₂e).^[1] Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016: This SB codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

SB 1386, Chapter 545, 2016: This SB declared "it to be the policy of the state that the protection and management of natural and working lands ... is an important strategy in meeting the state's greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

SB 743, Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on VMT, to promote the state's goals of reducing GHG emissions and traffic related air pollution and promoting

^[1] GHGs differ in how much heat each traps in the atmosphere, called global-warming potential. CO₂ is the most important GHG, so amounts of other gases are expressed relative to CO₂, using a metric called carbon dioxide equivalent (CO₂e). The global-warming potential of CO₂ is assigned a value of 1, and that of other gases is assessed as multiples of CO₂.

multimodal transportation while balancing the needs of congestion management and safety.

SB 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires CARB to prepare a report that assesses progress made by each MPO in meeting their established regional GHG emission reduction targets.

EO B-55-18 (September 2018): This EO sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.

EO N-19-19 (September 2019): This EO advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce GHG emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This EO also directs CARB to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

2.4.2 Environmental Setting

The proposed Project is in a rural area, surrounded by lands zoned as Exclusive Agriculture, Marsh Preservation, and Suisun Marsh Agriculture. SR 12 is considered a major route for the eastern part of the state to access Napa, Solano, and Sonoma counties. Within the Project limits, SR 12 is a conventional highway with two lanes of travel, one in each direction. The Project would not increase vehicular capacity, and there are no high occupancy vehicle lanes along the route. The Transportation and Circulation element of the Solano County General Plan guides transportation development and addresses GHGs in the Project area. The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

GHG INVENTORIES

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. USEPA is responsible for documenting GHG emissions nationwide, and CARB does so for the state, as required by Health and Safety Code 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 USEPA to the United Nations provides a comprehensive accounting of all human-produced sources of GHGs in the United States. The 1990-2019 inventory found that overall GHG emissions were 6,558 million metric tons in 2019, down 1.7 percent from 2018 but up 1.8 percent from 1990 levels. Of these, 80 percent were CO₂, 10 percent were CH₄, and 7 percent were N₂O; the balance consisted of fluorinated gases. CO₂ emissions in 2019 were 2.2 percent less than in 2018 but 2.8 percent more than in 1990. As shown in Figure 2-4, the transportation sector accounted for 29 percent of U.S. GHG emissions in 2019 (USEPA 2021b, 2021c).

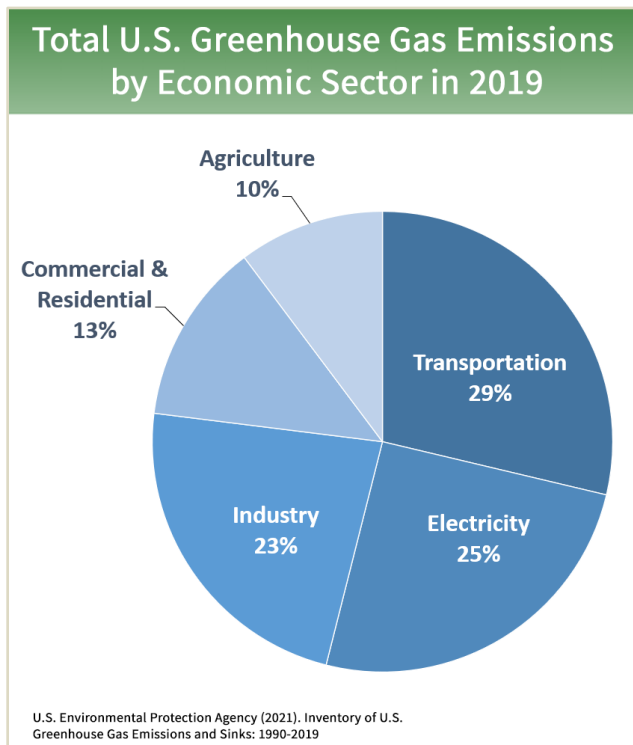


Figure 2-5. U.S. 2019 Greenhouse Gas Emissions

Source: USEPA 2021d

STATE GHG INVENTORY

CARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2021 edition of the GHG emissions inventory reported emissions trends from 2000 to 2019. It found total California emissions were 418.2 MMTCO₂e in 2019, a reduction of 7.2 MMTCO₂e since 2018 and almost 13 MMTCO₂e below the statewide 2020 limit of 431 MMTCO₂e. The transportation sector (including intrastate aviation and off

road sources) was responsible for about 40 percent of direct GHG emissions, a 3.5 MMTCO₂e decrease from 2018 (Figure 2-6). Overall statewide GHG emissions declined from 2000 to 2019 despite growth in population and state economic output (Figure 2-7) (CARB 2021a).

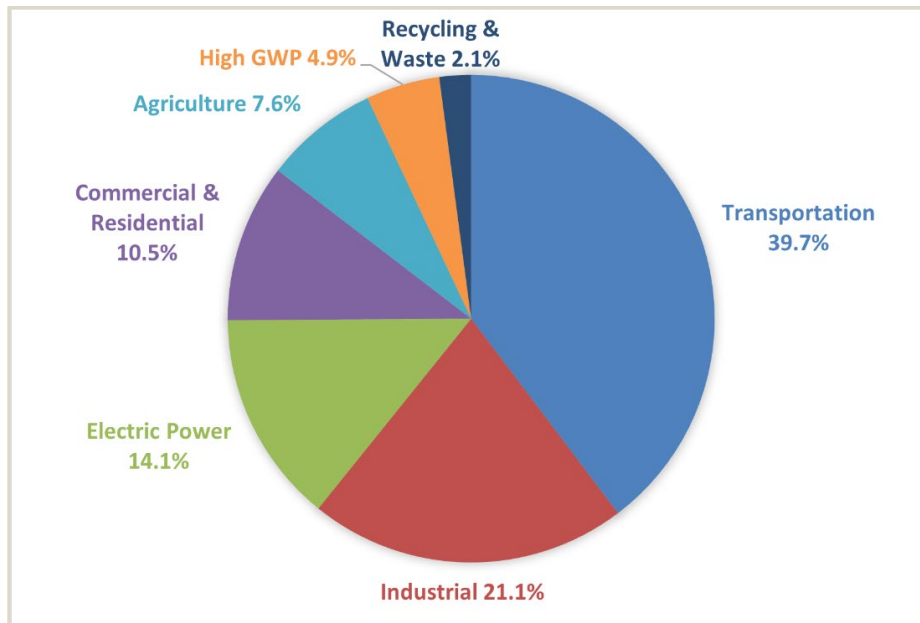


Figure 2-6. California 2019 Greenhouse Gas Emissions by Economic Sector

Source: CARB 2021a

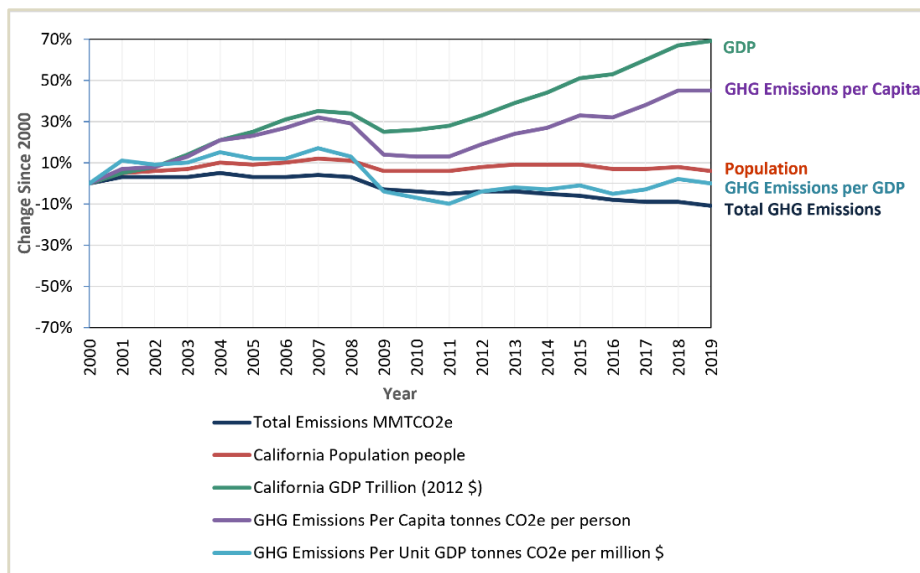


Figure 2-7. Change in California Gross Domestic Product, Population, and GHG Emissions since 2000

Source: CARB 2021a

AB 32 required CARB 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. CARB adopted the first Scoping Plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions.

REGIONAL PLANS

CARB sets regional GHG reduction targets for California's 18 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 (RTP)/SCS. The Project is captured in the Plan Bay Area 2050 Transportation Project List (RTPID 21-TO1-004 and RTPID 21-TO1-006), the RTP/SCS for the Association of Bay Area Governments and Metropolitan Transportation Commission (ABAG and MTC); this program includes funding to operate and maintain the Bay Area's local bridges and highways. Improvements include bridge rehabilitation, replacement or retrofitting with no new capacity, and state highway resurfacing and/or rehabilitation with no new capacity, preventive maintenance, and emergency repair (ABAG/MTC 2021). Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The regional reduction target for ABAG/MTC is 19 percent by 2035 (CARB 2021b). The RTP/SCS aims to reduce per-capita delay and CO₂ emissions.

In 2011, Solano County adopted a Climate Action Plan to address climate change, with the following objectives:

- Reduce total GHG emissions within the County to 20 percent below 2005 levels by 2020 (20 percent below state law requirements)
- Create adaptation strategies to address impacts of climate change on the county

The Climate Action Plan recommends 31 measures and 94 implementing actions the community can take to reduce emissions and countywide contributions to global climate change (Solano County 2011).

2.4.3 Project Analysis

GHG emissions from transportation projects can be divided into those produced during operation of the State Highway System (operational emissions) and those produced during construction. The primary GHGs produced by the transportation sector are CO₂, CH₄, N₂O, and HFCs. CO₂ emissions are a product of burning gasoline or diesel fuel in internal combustion engines, along with relatively small

amounts of CH₄ and N₂O. A small amount of HFC emissions related to refrigeration is also included in the transportation sector.

The CEQA Guidelines generally address GHG emissions as a cumulative impact due to the global nature of climate change (Public Resources Code Section 21083(b)(2)). As the California Supreme Court explained, “because of the global scale of climate change, any one project’s contribution is unlikely to be significant by itself.” (Cleveland National Forest Foundation v. San Diego Assn. of Governments [2017] 3 Cal.5th 497, 512). In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the Project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.

OPERATIONAL EMISSIONS

This Project proposes to resurface the existing pavement on both mainline traveled ways and shoulders. There are also two bridges within the Project area, Union Creek bridge and Denverton Creek bridge, that would be upgraded to be consistent with Caltrans current standards. The Project would not increase the vehicular 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 12, no increase in VMT would occur. While some GHG emissions during the construction period would be unavoidable, no increase in operational GHG emissions is expected.

CONSTRUCTION EMISSIONS

Construction GHG emissions would result from material processing and transportation, onsite 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.

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

Construction-related GHG emissions were calculated using the Road Construction Emissions Model, version 9.0, provided by the Sacramento Metropolitan Air Quality Management District. It was estimated that for the construction duration of 16 months, the total amount of CO₂, CH₄, and N₂O produced due to construction would be 698.94 tons, 0.13 ton, and 0.03 ton, respectively.

The following project features would be implemented to reduce or eliminate construction-related GHG emissions where practicable:

- **PF-AQ-2: Idling and Access Points.** Idling times would be minimized either by shutting off equipment when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure [Title 13, Section 2485 of California Code of Regulations]). Clear signage would be provided for construction workers at all access points. Construction activities involving the extended idling of diesel equipment or vehicles would be prohibited, to the extent feasible.
- **PF-AQ-3: Maintaining Construction Equipment and Vehicles.** All construction equipment and vehicles would be maintained and properly tuned in accordance with manufacturer's specifications. All equipment would be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- **PF-Energy-1: Minimize Energy Consumption from Construction Activities.** Energy consumption from construction activities would be minimized by the use of construction BMPs, including, but not limited to the following:
 - Limit idling of vehicles and equipment.
 - Use solar power as a power source, if feasible.
 - Ensure regular maintenance of construction vehicles and equipment.
 - If feasible, recycle nonhazardous waste and excess materials to reduce disposal offsite.
- **PF-GHG-1: Energy Reduction.** Solar energy would be used to reduce the use of non-renewable energy during construction.

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

2.4.4 CEQA Conclusion

While the proposed Project will result in GHG emissions during construction, it is anticipated that the Project will not result in any increase in operational GHG emissions. The 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 Section 2.2.5.

2.4.5 Greenhouse Gas Reduction Strategies

STATEWIDE EFFORTS

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

Major sectors of the California economy, including transportation, will need to reduce emissions to meet 2030 and 2050 GHG emissions targets. The Governor's Office of Planning and Research identified five sustainability pillars in a 2015 report (OPR 2015):

- (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
- (5) Stewarding natural resources, including forests, working lands, and wetlands, to ensure that they store carbon, are resilient, and enhance other environmental benefits

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 VMT. Reducing today's petroleum use in cars and trucks is a key state goal for reducing GHG 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 EO 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 the draft *Natural and Working Lands Climate Smart Strategy* for public comment in October 2021 (California Natural Resources Agency 2021b).

CALTRANS ACTIVITIES

Caltrans continues to be involved on the Governor's Climate Action Team as CARB 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 INVESTMENTS

The *Climate Action Plan for Transportation Infrastructure* (CAPTI) builds on EOs 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 the action plan, 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 2050 (CTP 2050)* 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 Plan 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 2021b).

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 2021c).

CALTRANS POLICY DIRECTIVES AND OTHER INITIATIVES

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) established a Caltrans policy to ensure coordinated efforts to incorporate climate change into Caltrans decisions and activities. *Caltrans Greenhouse Gas Emissions and Mitigation Report* (Caltrans 2020b) provides a comprehensive overview of Caltrans' emissions. The report documents and evaluates current Caltrans procedures and activities that track and reduce GHG emissions and identifies additional opportunities for further reducing GHG emissions from Caltrans-controlled emission sources, in support of Caltrans and state goals.

PROJECT-LEVEL GHG REDUCTION STRATEGIES

The following measures would also be implemented in the Project to reduce GHG emissions and potential climate change impacts from this Project:

- **PF-AES-1: Vegetation Protection.** Existing trees and vegetation would be preserved to the extent feasible. Trees and vegetation outside of the clearing and grubbing limits would be protected from the contractor's operations, equipment, and materials storage. Tree trimming and pruning, where required, would be under the direction of a certified arborist.

- **PF-Energy-1: Minimize Energy Consumption from Construction Activities.** Energy consumption from construction activities would be minimized by the use of construction BMPs, including, but not limited to the following:
 - Limit idling of vehicles and equipment.
 - Use solar power as a power source, if feasible.
 - Ensure regular maintenance of construction vehicles and equipment.
 - If feasible, recycle nonhazardous waste and excess materials to reduce disposal offsite.
- **PF-GHG-1: Energy Reduction.** Solar energy would be used to reduce the use of non-renewable energy during construction.
- **PF-TRA-1: Traffic Management Plan.** A Traffic Management Plan (TMP) would be developed by Caltrans during the design phase. The TMP would include public information, motorist information, incident management, construction, and alternate routes. In addition, one-way traffic control, lane closures, flaggers and phasing, portable changeable message signs, flaggers and the California Highway Patrol's Construction Zone Enhanced Enforcement Program would be incorporated into the TMP to minimize delays to local residents and highway users, as feasible. The TMP would also provide access for police and emergency service providers. Lane closures would be planned in coordination with Caltrans and Solano County and would include notices to emergency services providers, and the public in advance.

2.4.6 Adaptation

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

FEDERAL EFFORTS

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

The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the “human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways” (USGCRP 2018).

The USDOT *Policy Statement on Climate Adaptation* in June 2011 committed the federal Department of Transportation to “integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions” (USDOT 2011).

In 2014, FHWA Order 5520, *Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*, established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (FHWA 2019).

STATE EFFORTS

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

California's Fourth Climate Change Assessment (Fourth Assessment) (State of California 2018) is the state's effort to “translate the state of climate science into useful information for action.” It provides information that will help decision makers across sectors and at state, regional, and local scales protect and build the resilience of the state's people, infrastructure, natural systems, working lands, and waters. The State's approach recognizes that the consequences of climate change occur at the intersections of people, nature, and infrastructure. The Fourth Assessment reports that if no measures are taken to reduce GHG emissions by 2021 or sooner, the state is projected to experience a 2.7- to 8.8-degree-Fahrenheit increase in average annual maximum daily temperatures, with impacts on agriculture, energy demand, natural systems, and public health; a two-thirds decline in water supply from

snowpack and water shortages that will impact agricultural production; a 77 percent increase in average area burned by wildfire, with consequences for forest health and communities; and large-scale erosion of up to 67 percent of Southern California beaches and inundation of billions of dollars' worth of residential and commercial buildings due to sea level rise (State of California 2018).

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

In 2008, then-governor Arnold Schwarzenegger recognized the need when he issued EO S-13-08, focused on sea level rise. Technical reports on the latest sea level rise science were first published in 2010 and updated in 2013 and 2017. The 2017 projections of sea level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018. This EO also gave rise to the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan), which addressed the full range of climate change impacts and recommended adaptation strategies. The Safeguarding California Plan was updated in 2018 and again in 2021 as the *California Climate Adaptation Strategy* (California Natural Resources Agency 2021a), incorporating key elements of the latest sector-specific plans such as the *Natural and Working Lands Climate Smart Strategy* (California Natural Resources Agency 2021b), *Wildfire and Forest Resilience Action Plan* (State of California 2021), *Water Resilience Portfolio* (State of California 2020), and the *CAPTI* (California State Transportation Agency 2021). Priorities in the 2021 California Climate Adaptation Strategy include acting in partnership with California Native American tribes, strengthening protections for climate-vulnerable communities that lack capacity and resources, nature-based climate solutions, use of best available climate science, and partnering and collaboration to best leverage resources (California Natural Resources Agency 2021a).

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change in addition to sea level rise also threaten California's infrastructure. At the direction of EO B-30-15, the California Governor's Office of Planning and Research

(OPR) published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2018 to encourage a uniform and systematic approach.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group to help actors throughout the state address the findings of California's Fourth Climate Change Assessment. It released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*, in 2018. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts (Climate Change Infrastructure Working Group 2018).

CALTRANS ADAPTATION EFFORTS

Caltrans Vulnerability Assessments

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

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

PROJECT ADAPTATION ANALYSIS

Sea Level Rise

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

Precipitation and Flooding

As noted in Section 2.1.10, the Project site is within Zone A, Zone AE, and Zone X floodplains. Zone AE floodplains indicate areas inundated with a 1 percent annual chance of flooding (100-year flood). The Caltrans District 4 Climate Change Vulnerability Assessment indicates the potential for a 0.6 to 4.9 percent increase in 100-year storm precipitation depth in the Project vicinity by 2025 and a 5.0 to 9.9 percent increase by 2085 on the northwestern portion of the Project vicinity, whereas the southeastern portion of the Project vicinity remains at a 0.6 to 4.9 percent increase by 2085 (Caltrans 2017b, 2020c). A number of local geomorphic variables affect how a given precipitation event would affect streamflow, making it difficult to

assess potential impacts at a particular location. However, as discussed in Section 2.1.10, the Project would not change the 100-year water surface elevation within the Project area. Stormwater runoff from the roadway would continue to sheet flow off the pavement similar to existing conditions. The Project would also implement temporary construction site BMPs to reduce the amount of pollutants being discharged into the receiving waterbodies and avoid storing hazardous and nonhazardous materials within the Zone AE floodplain.

Wildfire

The Project is not surrounded by areas identified as high fire hazard severity zones, and the Project itself is not within a high fire hazard severity zone area (CAL FIRE 2008). The Caltrans Climate Change Vulnerability Assessment for District 4 evaluated roads at risk for future wildfire and determined that the Project is not in an area of wildfire risk nor characterized as within or along exposed roadway (Caltrans 2017b). The Project would serve the same use and vehicular capacity as the existing facility and would not increase wildfire risks. Caltrans would implement AMM-WF-1 to reduce the potential wildfire risks during construction. The Project is not likely to be subject to effects of wildfire that could occur under climate change.

AMM-WF-1: Implement Fire Prevention Practices During Construction. Caltrans would implement the following fire prevention practices to reduce the potential for wildfire:

- Internal combustion engines, stationary and mobile, would be equipped with spark arrestors. Spark arrestors would be in good working order.
- Contractor would keep all construction sites and staging areas free of grass, brush, and other flammable materials.
- Personnel would be trained in the practices of the fire safety plan relevant to their duties.
- Construction and maintenance personnel would be trained and equipped to extinguish small fires.
- Work crews would have fire extinguishing equipment on hand, as well as emergency numbers and cell phone or other means of contacting the fire department.

- Smoking would be prohibited while operating equipment and would be limited to paved or graveled areas or areas cleared of all vegetation. Smoking would be prohibited within 30 feet of any combustible material storage area (including fuels, gases, and solvents). Smoking would be prohibited in any location during a Red Flag Warning issued by the National Weather Service for the Project area.

Chapter 3 List of Preparers

The primary persons responsible for contributing to, preparing, and reviewing this report are listed in Table 3-1.

Table 3-1. List of Preparers and Reviewers

| Organization | Name | Role |
|--------------|-------------------|---|
| Caltrans | Jason Mac | Project Manager |
| Caltrans | Yenha Nguyen | Project Engineer |
| Caltrans | Khon Tram | Utilities |
| Caltrans | Leia Torrejon | Utilities |
| Caltrans | Karen Mai | Water Quality |
| Caltrans | Chris Else | Landscape Architecture |
| Caltrans | Mostafa Faghihi | Water Quality |
| Caltrans | Maxwell Lammert | Acting Office Chief, Environmental Analysis |
| Caltrans | Lily Mu | Acting Branch Chief, Napa and Solano Counties, Environmental Analysis |
| Caltrans | Skylar Nguyen | Environmental Scientist, Napa and Solano Counties, Environmental Analysis |
| Caltrans | Scott M. Williams | Acting Office Chief, Office of Environmental Analysis |
| Caltrans | Joey Aquion | Construction |
| Caltrans | Siria Che Wu | Air Quality/Noise |
| Caltrans | Lindsay Busse | Archaeology (Cultural) |
| Caltrans | Alicia Sanhueza | Architectural Historian |
| Caltrans | Khai Leong | Structure Hydraulics |
| Caltrans | Jinpei Feng | Structure Hydraulics |
| Caltrans | Jessica Chan | Landscape Architect |
| Caltrans | Robin Amatya | Senior Transportation Engineer (Hydraulics) |
| Caltrans | Chris Riden | Senior Transportation Engineer (Geotech) |
| Caltrans | Gregory Currey | Senior Transportation Planner (Bike/Ped) |
| Caltrans | Joe Downing | Structure Design |
| Caltrans | Shella Orson | Right of Way Project Coordinator |
| Caltrans | Chris Wilson | Hazardous Waste |

| Organization | Name | Role |
|--------------|----------------------|--|
| Caltrans | Rosa Maria Candiotti | Structure Design |
| Caltrans | Rick Donofrio | Materials |
| Caltrans | Mostafa Mo Faghihi | Water Quality |
| Caltrans | Martin Mercado | Senior Construction Engineer |
| Caltrans | Mohammad Zabolzadeh | Material Design Branch Chief |
| Caltrans | Atif Abrar | Senior Transportation Engineer |
| Caltrans | Youseff Yazbek Karam | Transportation Engineer |
| Caltrans | John Seal | Environmental Scientist |
| Caltrans | Matthew Rechs | Senior Biologist/Branch Chief |
| Caltrans | Lindsay Vivian | Acting Office Chief, Office of Biological Sciences and Permits |
| Jacobs | Morgan Angulo | Environmental Planner |
| Jacobs | Holly Barbare | Biologist |
| Jacobs | David Carlson | Project Manager |
| Jacobs | Clarice Ericsson | Publications Technician |
| Jacobs | Erin Kraft | Environmental Planner |
| Jacobs | Erik Lauritzen | Environmental Planner |
| Jacobs | Scott Lindeman | Biologist |
| Jacobs | Loretta Meyer | Senior Environmental Planner |
| Jacobs | Hannah Minderhout | Environmental Planner |
| Jacobs | Leslie O'Connor | Technical Editor |
| Jacobs | Yassaman Sarvian | Environmental Planner |
| Kleinfelder | Robert Solotar | Permitting Specialist |

Chapter 4 Distribution List

The IS/MND was circulated on October 7, 2022, to the following agencies and government officials:

Agencies

Federal Agencies

Environmental Protection Agency, Region IX Federal Activities Office, CMD-2
75 Hathorne Street
San Francisco, CA 94105-3901

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

U.S. Fish and Wildlife Service
2800 Cottage Way W-2605
Sacramento, CA 95825

U.S. Army Corps of Engineers
Sacramento District
ATTN: Regulatory Branch
1325 J Street, Room 1480
Sacramento, CA 95825

State Agencies

Bay Area Air Quality Management District
Chief Executive Officer
939 Ellis Street
San Francisco, CA 94109

California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, CA 9812

California Department of Fish and Wildlife
Region 3
2825 Cordelia Rd #100
Fairfield, CA 94534

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

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

San Francisco Bay Conservation and Development Commission
375 Beale St., Suite 510
San Francisco, CA 94105

Solano County Water Agency
810 Vaca Valley Parkway, Suite 203
Vacaville, CA 95688

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

Elected Officials

Federal Officials

UNITED STATES SENATE

The Honorable Dianne Feinstein
United States Senate
1 Post Street, Suite 2450
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The Honorable Alex Padilla
United States Senate
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San Francisco, CA 94101

UNITED STATES HOUSE OF REPRESENTATIVES

The Honorable John Garamendi
United States House of Representatives, CA-3
1261 Travis Blvd., Suite 180
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The Honorable Bill Dodd
California State Senate, District 3
2721 Napa Valley Corporate Drive
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CALIFORNIA STATE ASSEMBLY

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The Honorable Jim Spering
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The Honorable Mitch Mashburn
Solano County Board of Supervisors, District 5
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City Officials

Mayor Pro Tem Alma Hernandez
Suisun City Council
City Hall
701 Civic Center Blvd
Suisun City, CA 94585

Council Member Wanda Williams
Suisun City Council
City Hall
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Council Member Jane Day
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Council Member Mike Hudson
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Appendix A Project Features, Avoidance and Minimization Measures, and Mitigation Measures

Appendix A Project Features, Avoidance and Minimization Measures, and Mitigation Measures

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|---------------|---------------------------|--|
| Aesthetics | PF-AES-1 | Vegetation Protection. Existing trees and vegetation would be preserved to the extent feasible. Trees and vegetation outside of the clearing and grubbing limits would be protected from the contractor's operations, equipment, and materials storage. Tree trimming and pruning, where required, would be under the direction of a certified arborist. |
| Aesthetics | PF-AES-2 | 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 where required. |
| Aesthetics | PF-AES-3 | Construction Staging. Except as detailed in the Contract Plans, staging areas would not affect existing landscaped areas resulting in death and/or removal of trees and shrubs, or disruption and destruction of existing irrigation facilities. |
| Aesthetics | PF-AES-4 | Construction Waste. During construction operations, unsightly material and equipment in staging areas would be placed where they are less visible and/or covered where possible. |
| Aesthetics | PF-AES-5 | Construction Lighting. Construction lighting would be directed toward the immediate vicinity of active work and would avoid light trespass through directional lighting, shielding, and other measures as needed. |
| Air Quality | PF-AQ-1 | Dust Control. Dust control measures would be included in the SWPPP and implemented to minimize construction impacts to existing communities. The plan would incorporate measures such as sprinkling, speed limits, covering transported material loads, and timely revegetation of disturbed areas as needed, as well as posting a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints and at BAAQMD regarding compliance with applicable regulations. Water trucks or dust palliatives would be applied to the site, including unvegetated areas, and equipment as often as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emissions or at the ROW line, depending on air pollution control district and air quality management district regulations and local ordinances. |

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|---------------|---------------------------|--|
| Air Quality | PF-AQ-2 | Idling and Access Points. Idling times would be minimized either by shutting off equipment when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure [Title 13, Section 2485 of California Code of Regulations]). Clear signage would be provided for construction workers at all access points. Construction activities involving the extended idling of diesel equipment or vehicles would be prohibited, to the extent feasible. |
| Air Quality | PF-AQ-3 | Maintaining Construction Equipment and Vehicles. All construction equipment and vehicles would be maintained and properly tuned in accordance with manufacturer's specifications. All equipment would be checked by a certified mechanic and determined to be running in proper condition prior to operation. |
| Biology | PF-BIO-1 | Documentation at Project Site. A Permit Compliance Binder would be maintained at the construction site at all times and presented to resource agency (USACE, USFWS, CDFW, BCDC and/or RWQCB) personnel upon request. The Permit Compliance Binder would include a copy of all original permits and agreements, and any extensions and amendments to the permits and agreements. |
| Biology | PF-BIO-2 | Work According to Documents. Except as they are contradicted by measures within the permits and agreements, all work would be conducted in conformance with the Project description in the permits and agreements, and the AMMs provided in the permits and agreements. |
| Biology | PF-BIO-3 | Agency-Approved Biologist(s). Prior to construction, the qualifications of the biological monitor(s) would be submitted to USFWS and CDFW for review and approval. |
| Biology | PF-BIO-4 | Designation of Environmentally Sensitive Areas and Construction and Storage Areas. Caltrans will delineate construction areas and ESAs (defined as areas containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed) on the final construction plans. The approved biological monitor will be onsite to direct the installation of high-visibility, orange ESA fencing to prevent encroachment of construction personnel and equipment onto sensitive areas during construction activities, as needed. Staging, storage, and parking areas will be located on paved or graveled surfaces within the ROW and away from any designated ESAs, as specified by the Project biologist, to avoid construction impacts to natural communities. Equipment and materials storage sites will be located as far away from residential and park uses as practicable. At the discretion of the Caltrans biologist, ESA fencing may be removed at times when construction is no longer active in the area. |

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|---------------|---------------------------|--|
| Biology | PF-BIO-5 | <p>Wildlife Exclusion Fencing. Before ground-disturbing activities commence, high-visibility wildlife exclusion fencing (WEF) (suitable for amphibian and small mammal exclusion) would be installed along ESA/ground-disturbance boundaries to protect sensitive wildlife and to keep them from entering the work site. The final Project plans and specifications in the bid solicitation package would depict the locations WEF would be installed and specify acceptable fencing material and installation methods and prohibited construction-related activities in ESA. The WEF would be maintained until ground-disturbing activities near the ESA is complete:</p> <ul style="list-style-type: none"> • Supports for the WEF would be placed on the inside of the work area to prevent wildlife from using them to climbing into the work area. • The fence fabric would be at least 36 inches high. • The fencing would be made of a heavy plastic sheeting material that is too smooth for salt marsh harvest mouse to climb. • The toe of the fence fabric would be buried approximately 6 inches in the ground to prevent wildlife from crawling or burrowing underneath it. |
| Biology | PF-BIO-6 | <p>Fence and Signpost Caps. Fence or signposts would have the top of the post capped and/or the top three post holes covered or filled with screws or bolts to prevent the entrapment of wildlife, specifically birds of prey.</p> |
| Biology | PF-BIO-7 | <p>Restore Disturbed Areas. Temporarily disturbed areas, including staging areas, would be restored to the maximum extent practicable. Construction-related materials would be removed. Exposed slopes and bare ground would be reseeded with native species to stabilize and prevent erosion.</p> |
| Biology | PF-BIO-8 | <p>Invasive Weed Control. To reduce the spread of non-native, invasive plants, these species would be controlled within the Project footprint to the maximum extent practicable, in accordance with Caltrans' Highway Design Manual Topic 110.5, Control of Noxious Weeds – Exotic and Invasive Species, and Executive Order 13112, Invasive Species, and by methods approved by a Caltrans' landscape architect or vegetation control specialist. Vehicles and equipment would be thoroughly cleaned before arriving on the site to prevent the spread of noxious weeds from other locations. In work areas where California Department of Food and Agriculture listed noxious weeds or California Invasive Plant Council (Cal-IPC) Moderate- or High-rated weed species occur in fruit or flower and may be disturbed during construction-related activities, the contractor would be required to clear vegetation at the beginning of location disturbance, and contain the plant material associated with these noxious weeds, and dispose of them in a manner that will not promote the spread of the species. Areas subject to noxious weed removal or disturbance will be replanted with fast growing native grasses or a native erosion control seed mixture.</p> |

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|---------------|---------------------------|--|
| Biology | PF-BIO-9 | <p>Construction Site Best Management Practices. The following site restrictions would be implemented to avoid or minimize potential effects on listed species and their habitats:</p> <ul style="list-style-type: none"> • Speed Limit. Vehicles would not exceed 15 miles per hour in unpaved areas of the Project footprint, to reduce dust and excessive soil disturbance. • Trash Control. Food and food-related trash items would be secured in sealed trash containers and removed from the site at the end of each day. • Pets. Pets would be prohibited from entering the Project limits during construction. • Firearms. Firearms would be prohibited within the Project limits, except for those carried by authorized security personnel or local, state, or federal law enforcement officials. |
| Biology | PF-BIO-10 | <p>Vegetation Removal. Native vegetation would be cleared only when necessary and would be cut above soil level except in areas that would be excavated. Pre-construction and bird nesting surveys would be conducted prior to removal of vegetation. If active nests are found, then an appropriate buffer would be established, and the nest would be monitored for compliance with the Migratory Bird Treaty Act and Fish and Game Code Section 3503.</p> <p>During vegetation removal in potential salt marsh harvest mouse habitat, the agency-approved biologist would inspect areas to be cleared immediately prior to vegetation removal and would monitor the vegetation removal process. Herbaceous vegetation would be removed from impact areas to eliminate cover for salt marsh harvest mice, thereby discouraging them from entering impact areas.</p> <p>Vegetation removal would start at the road shoulder and proceed away from the work area and toward contiguous areas of suitable habitat to allow any salt marsh harvest mice in the exclusion area to passively relocate into adjacent habitat. Vegetation would not be removed during a flooding event that inundates the marsh because these are the conditions in which salt marsh harvest mice are most likely to be present in the biological study area (BSA). Initial removal of pickleweed, salt-grass, and other vegetation in the marked areas would be done using hand tools exclusively. This would allow any small mammals, including salt marsh harvest mice, to escape the BSA under the cover of vegetation, and would encourage movement of such small mammals toward available vegetated habitat outside the BSA. All herbaceous vegetation that could potentially conceal a salt marsh harvest mouse within the BSA would be removed. All vegetation that is removed would be hauled offsite the day it is removed and would not be left on the site to provide potential cover for small mammal species.</p> |
| Biology | PF-BIO-11 | <p>Construction Lighting and Signage. Construction area lighting would be used only where necessary for safety and signage. Downcast lighting and shielding to minimize artificial lighting of natural areas would be used throughout the Project footprint.</p> |

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|---------------|---------------------------|--|
| Biology | PF-BIO-12 | Cover Staged Materials. Culverts, pipes, hoses, and similar structures less than 12 inches in diameter would be closed, covered or capped to prevent animal entry upon arrival to the Project site. Culverts, pipes, hoses, and similar structures would be inspected for wildlife before it is buried, capped, used, or moved. |
| Biology | PF-BIO-13 | Nesting Bird Protection. During the bird nesting season (February 1 to September 30), an agency-approved biologist would conduct pre-construction surveys for active bird nests no more than 3 days before the start of ground or vegetation disturbance events and every 14 days during Project activities. Tree and/or shrub trimming would be conducted outside of bird nesting season unless monitoring results show no active nesting is taking place as discussed for the following buffer zones: If an active nest is identified during construction that may be impacted by Project activities, a no-disturbance buffer of 300 feet for raptors and 50 feet for non-raptors would be established immediately and the agency-approved biologist would be notified so that the nest can be monitored. A reduced or enlarged buffer, and other protection measures would be implemented as needed and in consultation with the appropriate wildlife agency. |
| Biology | PF-BIO-14 | Worker Environmental Awareness Training. Before the onset of construction, an agency-approved biologist would conduct training for all construction personnel. At a minimum, the training would include the following: <ul style="list-style-type: none"> • A description of all special-status species and their habitats • The potential occurrence of these species in the job sites • An explanation of the status of these species and protection under the federal Endangered Species Act, California Endangered Species Act, and all other federal, state, and local regulatory requirements • The measures to be implemented to conserve listed species and their habitats as they relate to the work site • Boundaries within which construction may occur A fact sheet conveying this information would be prepared and distributed to all construction crews and project personnel entering the project footprint. Upon completion of the program, personnel would sign a form stating that they attended the program and understand all AMMs and implications of the federal Endangered Species Act, California Endangered Species Act, and all other federal, state, and local regulatory requirements. |
| Biology | PF-BIO-15 | Prohibition of Monofilament Netting. Erosion control materials (i.e., wattles, matting, and blankets) will not contain plastic monofilament netting that could entrap or harm wildlife. Acceptable substitutes would include coconut coir matting or tackifying hydroseeding compounds. |

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|---------------|---------------------------|---|
| Biology | PF-BIO-16 | <p>Discovery of Injured or Dead Special-Status Species. Immediately upon discovery of any dead, or injured, or species regulated by USFWS, NMFS, or CDFW, Caltrans would provide appropriate notifications to the agency(s) with jurisdiction. Storage and transport to the nearest wildlife care facility may be necessary in direct coordination with agencies.</p> |
| Biology | PF-BIO-17 | <p>Wildlife Species Relocation. If wildlife is encountered during construction, all work in the vicinity that could result in the injury or death of the wildlife would be stopped immediately and it would be allowed to leave the job site unharmed. If it is determined that they could be injured or killed by construction activities, the agency-approved biologist, in coordination with Caltrans and the appropriate state and federal wildlife agencies, would do the following:</p> <ul style="list-style-type: none"> • Conduct, monitor, and supervise all capture, handling, exclusion, and relocation activities • Ensure that sufficient personnel are available for safe and efficient collection of the wildlife • Ensure that proper training and any required permitting or licensing is current for personnel identifying, handling, and conducting safe capture of listed species <p>Where listed species cannot be captured, handled, excluded, or relocated, actions that could injure or kill individuals would be avoided or delayed until the species leaves the affected area.</p> |
| Biology | PF-BIO-18 | <p>Aquatic Species Relocation. Aquatic species relocation will occur within Union Creek prior to and during dewatering efforts. An aquatic species relocation plan will be developed and submitted to the agencies for approval prior to dewatering occurring.</p> |
| Cultural | PF-CULT-1 | <p>Discovery of Cultural Resources. If previously unidentified cultural resources are unearthed during construction, work would be halted in that area until a qualified archaeologist can assess the significance of the discovery.</p> |
| Cultural | PF-CULT-2 | <p>Discovery of Human Remains. If remains are discovered during dredging activities, all work within 60 feet of the discovery would halt and the Caltrans Cultural Studies Office would be called. Caltrans Cultural Resources Studies Office Staff would assess the remains and, if they are determined to be human, would contact the County Coroner, per Public Resources Code, 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, then the coroner would contact the Native American Heritage Commission, which would assign a Most Likely Descendant. Caltrans would consult with the Most Likely Descendant on treatment and reburial of the remains. Further provisions of Public Resources Code, Section 5097.98 would be followed as applicable.</p> |

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|---------------------------------|---------------------------|--|
| Energy | PF-ENERGY-1 | <p>Minimize Energy Consumption from Construction Activities. Energy consumption from construction activities would be minimized by the use of construction BMPs, including, but not limited to the following:</p> <ul style="list-style-type: none"> • Limit idling of vehicles and equipment. • Use solar power as a power source, if feasible. • Ensure regular maintenance of construction vehicles and equipment. • If feasible, recycle nonhazardous waste and excess materials to reduce disposal offsite. |
| Greenhouse Gas Emissions | PF-GHG-1 | <p>Energy Reduction. Solar energy would be used to reduce the use of non-renewable energy during construction.</p> |
| Hazards and Hazardous Materials | PF-HAZ-1 | <p>Caltrans Standard Specifications and Hazardous Waste Regulations. The current Caltrans Standard Specifications Section 13-4, Job Site Management, would be implemented to prevent and control spills or leaks from construction equipment and storage of fuels, paints, cleaners, solvents, and lubricants. All aspects of the project associated with transport, storage, use, and disposal of hazardous materials would be done in accordance with the California Health and Safety Code and the appropriate local, state, and federal hazardous waste regulations. Handling and management of hazardous materials would comply with the current Caltrans Standard Specification Section 14-11, Hazardous Waste and Contamination, which outlines handling, storing, and disposing of hazardous waste.</p> |
| Hazards and Hazardous Materials | PF-HAZ-2 | <p>Soil and Groundwater Investigation. A soil and groundwater investigation for metals (primarily lead) and other contaminants of concern (e.g., petroleum hydrocarbons and volatile organic compounds) would be completed during the Project's design phase to characterize and profile the soil and groundwater to be encountered by the construction of the proposed build alternatives. Depending upon the findings of the site investigation, appropriate hazardous waste management special provisions would be prepared and included in the project specifications.</p> |
| Water Quality | PF-WQ-1 | <p>Stormwater Pollution Prevention Plan. To comply with the CGP, the Project contractor is required to implement a SWPPP containing BMPs for stormwater pollution control. The SWPPP would be prepared by the contractor and approved by Caltrans and would detail the implementation of temporary construction site BMPs during all phases of construction to avoid or minimize sediment or other pollutions effects to surface water, groundwater, or domestic water supplies. The SWPPP would include erosion control BMPs implemented to minimize wind- or water-related stormwater pollutions on the construction site. These prevention measures would also fulfill the requirements of the San Francisco Regional Water Quality Control Board (RWQCB). The Caltrans BMP Guidance Handbook would provide the design staff with guidance for including appropriate</p> |

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|---------------|---------------------------|--|
| | | <p>provisions in the construction contract that would prevent or minimize stormwater and non-stormwater discharges and protect sensitive areas. At a minimum, protective measures would include the following:</p> <ul style="list-style-type: none"> Any discharging of pollutants from vehicle and equipment cleaning into any storm drains or watercourses would be disallowed. Vehicle and equipment fueling and maintenance operations would be kept at least 50 feet away from watercourses, except at established commercial gas stations or an established vehicle maintenance facility. All grindings and asphaltic-concrete waste would be stored within previously disturbed areas absent of habitat and at a minimum of 50 feet from any downstream riparian habitat, aquatic habitat, culvert, or drainage feature. Dedicated fueling and refueling practices would be designated as part of the approved SWPPP. Dedicated fueling areas would be protected from stormwater runoff and be located at least 50 feet from downslope drainage facilities and water courses. Fueling must be performed on level-grade areas. Onsite fueling would only be used when and where sending vehicles and equipment offsite for fueling is impractical. When fueling must occur onsite, the contractor would designate an area to be used subject to the approval of the resident engineer representing Caltrans. Drip pans or absorbent pads would be used during onsite vehicle and equipment fueling. Spill containment kits would be maintained onsite at all times during construction operations and/or staging or fueling of equipment. Dust control measures would be implemented. These would consist of regular truck watering of construction access areas and disturbed soil areas, including the use of organic soil stabilizers, if required, to minimize airborne dust and soil particles generated from graded areas. For disturbed soil areas, the use of tackifier to control dust emissions blowing off of the ROW or out of the construction area during construction would be included in the construction contract. Watering guidelines would be established to avoid any excessive runoff that may flow into contiguous areas. Any material stockpiles would be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion. All of these efforts would be consistent with the RWQCB or approved SWPPP. Dust control would be addressed during the environmental education session. Coir rolls or straw wattles would be installed along or at the base of slopes during construction to capture sediment. Graded areas would be protected from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas. |

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|---------------|---------------------------|---|
| Water Quality | PF-WQ-2 | <p>Construction Site BMPs. To prevent or reduce impacts to water quality during construction, construction site BMPs would be deployed for sediment control and material management. These include:</p> <ul style="list-style-type: none"> • Job Site Management: This non-stormwater discharge and waste management practice includes considerations for operations, illicit discharge detention and reporting, vehicle and equipment cleaning, vehicle and equipment fueling, and material use. • Temporary Fiber Rolls: A fiber roll consists of straw or other similar materials placed on the face of the slopes at regular intervals to intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff. • Silt Fence: A silt fence is a temporary linear sediment barrier of permeable fabric designed to intercept and slow the flow of sediment-laden sheet flow runoff. Silt fences allow sediment to settle from runoff before water leaves the construction site. Silt fences are placed below the toe of exposed and erodible slopes, downslope of exposed soil areas, around temporary stockpiles and along streams and channels. Silt fences should not be used to divert flow or in streams, channels, or anywhere flow is concentrated. • Drainage Inlet Protection: Drainage inlet protection is a practice to reduce sediment from stormwater runoff discharging from the construction site prior to entering the storm drainage system. Effective drainage inlet protection allows sediment to settle out of stormwater or filters sediment from the stormwater before it enters the drain inlet. Drainage inlet protection is the last line of sediment control defense prior to stormwater leaving the construction site. • Portable Concrete Washout: This waste management BMP contains procedures and practices that would minimize or eliminate the discharge of concrete waste materials to the storm drain systems or watercourses. • Temporary Cover: This BMP involves the placement of geosynthetic fabrics (geotextiles), plastic covers, or erosion control blankets/mats to stabilize DSA and protect soil from erosion by wind or water. • Stockpile Management: This BMP consists of procedures and practices to eliminate pollution of stormwater from stockpiles of soil and paving materials (such as concrete rubble, aggregate, and asphalt concrete). These procedures include locating stockpiles away from drainages, and providing perimeter sediment barriers, soil stabilization, and wind erosion control measures. • Solid Waste Management: This BMP consists of procedures and practices to minimize or eliminate the discharge of pollutants to storm drain systems or watercourses as a result of creation, stockpiling, or removal of construction site wastes. Measures |

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|---------------|---------------------------|--|
| | | <p>include education as well as collection, storage, and disposal practices (such as, plywood and tarp directly on streambed).</p> <ul style="list-style-type: none"> Stream Diversion System: The system consists of upstream and downstream berms, with a pipe conveying runoff to create a dry working environment for temporary access. The system would be required at specific culvert locations and used during the summer months for one or both summers of the construction period. Each stream diversion system would be removed immediately after in-stream work is completed at the location, and would not be left in place during the wet season (typically beginning October 15). A risk analysis would be done to determine the design flow for the stream diversion system. |
| Water Quality | WQ-3 | <p>Permanent Treatment BMPs. Permanent treatment BMPs are as follows:</p> <ul style="list-style-type: none"> Design Pollution Prevention BMP Strategy: The goal of an effective erosion control strategy is to maintain the natural pre-construction conditions. Existing vegetation would be preserved to the maximum extent practicable, and areas disturbed by construction activities would be minimized using construction site BMPs. Preservation involves the identification and protection of desirable vegetation to provide erosion and sediment control benefits. No slopes would be steeper than a 2:1 ratio. When slopes steeper than 2:1 are required, a geotechnical recommendation would be required to support the steeper slope. Disturbed soil areas created by construction activities would receive erosion control treatments sufficient to address the erosion potential of the slope. Permanent Design Pollution Prevention measures would be identified during later Project phases and may include decompaction, compost mulch, fiber rolls, coir netting, and hydroseed/hydromulch. Treatment BMP Strategy: Treatment BMPs would address the post-construction water quality impacts and remove pollutants from stormwater runoff before discharging to receiving waters. The Project currently proposes the use of biofiltration strips as the stormwater treatment devices to meet Project requirements. The locations for the biofiltration strips would be determined during later Project phases. |
| Noise | PF-NOI-1 | <p>Idling of Internal Combustion Engines. Unnecessary idling of internal combustion engines would be avoided within 100 feet of sensitive receptors.</p> |
| Noise | PF-NOI-2 | <p>Maintaining Internal Combustion Engines. All internal combustion engines would be maintained properly to minimize noise generation. Internal combustion engine driven equipment must be equipped with manufacturer recommended intake and exhaust mufflers that are in good condition and appropriate for the equipment.</p> |
| Noise | PF-NOI-3 | <p>Quiet Air Compressors. The Project would utilize “quiet” air compressors and other “quiet” equipment where such technology exists.</p> |

| Resource Area | Project Feature Reference | Project Feature Title and Description |
|-------------------------------|---------------------------|--|
| Noise | PF-NOI-4 | Construction Schedule. Construction activities would mostly occur during the day, between 6 a.m. and 9 p.m. Noisy operations would be scheduled to occur within the same time period to the greatest extent possible. The total noise level would not be significantly greater than the level produced if operations are performed separately. Some nighttime construction would occur and would adhere to Caltrans Standard Specification 14-8.02. |
| 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 public information, motorist information, incident management, construction, and alternate routes. In addition, one-way traffic control, lane closures, flaggers and phasing, portable changeable message signs, flaggers and the California Highway Patrol's Construction Zone Enhanced Enforcement Program would be incorporated into the TMP to minimize delays to local residents and highway users, as feasible. The TMP would also provide access for police and emergency service providers. Lane closures would be planned in coordination with Caltrans and Solano County and would include notices to emergency services providers, and the public in advance. |
| Utilities and Service Systems | 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 by the contractor at least once daily from the Project limits. A trash reduction system would also be developed by the contractor, approved by Caltrans, and implemented per Caltrans Statewide National Pollution Discharge Elimination System Permit and San Francisco Regional Water Quality Control Board Cease and Desist Order. |
| Utilities and Service Systems | PF-UTIL-2 | Treated Wood Waste. Wood removed from metal beam guardrails would be considered treated wood waste and disposed of by the contractor pursuant to Caltrans Standard Specifications. |
| Utilities and Service Systems | PF-UTIL-3 | Notify Utility Owners of Construction Schedule to Protect Utilities. Caltrans would notify utility companies of construction schedules for proposed Project work to minimize potential disruption of utility service. |

| Resource Area | AMM Reference | AMM Title and Description |
|---------------|---------------|--|
| Aesthetics | AMM-AES-1 | Minimize Construction Appearance. During construction, Caltrans would minimize the appearance of construction equipment and staging areas on SR 12 and would locate construction equipment and materials in a screened staging area beyond direct view of the motoring public and residential properties to the extent feasible. |
| Aesthetics | AMM-AES-2 | Rail Design: During the design phase, Caltrans would design the bridge rails and guardrails along SR 12 to be see-through, which would allow views of the surrounding environment, as directed by Caltrans Landscape Architecture staff. |
| Aesthetics | AMM-AES-3 | Glare Effects: Glare Effects. During the design phase, Caltrans would reduce glare by ensuring the design would be treated with a combination of roughening surface texture and coloring concrete to reduce glare, as directed by the Caltrans Office of Landscape Architecture. |
| Aesthetics | AMM-AES-4 | Post-Construction Site Grading and Contours: Prior to completion of construction activities, Caltrans would use contour grading and slope rounding to produce smooth, flowing contours consistent with site topography, to increase context sensitivity and reduce engineered appearance of slopes. |
| Biology | AMM-BIO-1 | Biological Monitoring. The agency-approved biologist(s) would be onsite during vegetation clearing, installation of wildlife exclusion (WEF), initial ground-disturbing activities in previously undisturbed areas, installation of temporary creek diversion systems and dewatering, work that occurs in wetlands or in waters below Mean Higher High Water elevation in tidally influenced areas, and operation of loud equipment within 300 feet of brackish marsh areas, and thereafter when construction activities occur that could result in take of sensitive wildlife. The agency-approved biologist(s) would keep copies of applicable permits in their possession when onsite. |
| Biology | AMM-BIO-2 | Pre-construction Surveys. Before initial ground-disturbing activities, the agency-approved biologist(s) would conduct work area surveys, including for special-status wildlife species. Focused surveys would be conducted 48 hours before construction and daily as needed. |

| Resource Area | AMM Reference | AMM Title and Description |
|---------------|---------------|--|
| Biology | AMM-BIO-3 | <p>Work Windows. The following measures would be implemented in and adjacent to delineated wetland areas in the Project area:</p> <ul style="list-style-type: none"> • Work within upland habitat for California tiger salamander would occur between March 1 and November 30. • Work within 250 feet of vernal pools would occur between May 1 and November 1. • Work in wetlands or other waters of the United States would be scheduled between June 1 and October 31. • Work in estuarine and marine wetlands, would not occur within 2 hours before or after extreme high tide events (6.5 feet above Mean Lower Low Water elevation or greater as determined from the nearest National Oceanic and Atmospheric Administration [NOAA] tidal gage station to the activity) when the marsh plain is inundated. |
| Biology | AMM-BIO-4 | <p>California Clapper Rail and California Black Rail Pre-Construction Survey. Where California black rail habitat is present within 300 feet of the BSA or California clapper rail habitat is present within 700 feet of the BSA, or as determined by CDFW, a pre-construction survey to determine if the species are present would be conducted for work occurring between February 1 and August 31. Specific survey requirements and timing would be determined in consultation with USFWS and CDFW.</p> <p>If breeding California clapper rail or California black rail are determined to be present, Caltrans will immediately consult with USFWS and/or CDFW and establish an appropriate buffer for construction activities that could cause harassment during the rail nesting season. Caltrans would also implement California clapper rail or California black rail protection measures resulting from the consultation.</p> |
| Biology | AMM-BIO-5 | <p>Listed Plant Surveys. Botanical surveys would be conducted in areas of suitable habitat for rare plant species during the appropriate blooming season(s). If a listed plant species is discovered in an area where there would be ground-disturbing activities, the location would be marked or fenced for avoidance. Ground-disturbing work near special-status plant species would proceed under supervision of an agency-approved biologist.</p> |
| Biology | AMM-BIO-6 | <p>Swainson's Hawk Pre-Construction Surveys. If construction activities occur during the Swainson's hawk nesting season (March 15 to September 15), Caltrans would conduct focused Swainson's hawk surveys during the spring prior to construction, using guidelines such as the one set forth in the <i>Recommended Timing And Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley</i> (Swainson's Hawk Technical Advisory Committee 2000). If an active nest is discovered within 0.5 mile of the Project area, Caltrans would immediately stop any work that has potential to result in take of Swainson's hawk and coordinate with CDFW for further guidance.</p> |

| Resource Area | AMM Reference | AMM Title and Description |
|---------------|---------------|--|
| Biology | AMM-BIO-7 | <p>Western Burrowing Owl Pre-Construction Surveys. An agency-approved biologist(s) would conduct pre-construction surveys for western burrowing owls prior to the breeding season (February 1 through August 31), including inspecting the job sites and adjacent areas, within 500 feet, for burrows with typical characteristics such as owl pellets, feathers, or white markings.</p> <p>If burrowing owl activity is observed in locations planned for excavation and an adequate buffer cannot be established during the non-breeding season (September 1 through January 31), resident and migrant wintering burrowing owls may be evicted from the construction area using passive relocation techniques, including potentially providing suitable alternative burrows located within 330 feet of the occupied burrows that can be protected during Project construction. Prior to construction, Caltrans would prepare an Exclusion Plan for review and approval by CDFW.</p> |
| Biology | AMM-BIO-8 | <p>Pre-Construction Bat Surveys and Avoidance Measures. The agency-approved biologist would conduct a visual inspection and habitat assessment for potentially suitable bat roosting habitat during the design phase of the Project and prior to construction.</p> <p>If suitable bat roosting habitat is identified during survey in design phase, Caltrans would consider methods to offset permanent impact to habitat.</p> <p>Assessments of bridges would inspect all open crevices. The pre-construction bat survey must be conducted during one of the following two time periods:</p> <ul style="list-style-type: none"> • March 1 to April 15 • August 31 to October 15 <p>If the habitat assessment reveals suitable bat habitat in trees and tree trimming is scheduled from April 16 through August 30 and/or October 16 through February 28, then presence/absence surveys would be conducted 2 to 3 days before tree trimming. If the presence/absence surveys do not find bats, then tree trimming may be conducted. If the presence/absence surveys indicate bat occupancy, the occupied trees would be trimmed during an agency-approved period.</p> <p>If the habitat assessment reveals suitable roosting habitat for bats, the appropriate focused surveys and exclusionary measures would be implemented prior to construction during an agency-approved period. If Caltrans identifies roosting bats through the pre-construction survey, Caltrans' biological staffs would submit a bat exclusionary plan for regulatory agencies' approval prior to construction.</p> |
| Biology | AMM-BIO-9 | <p>Culvert Design. Prior to construction, Caltrans would coordinate with USFWS and CDFW to determine which culvert replacement location(s) would be designed to facilitate passage for California tiger salamander and other similar wildlife.</p> |

| Resource Area | AMM Reference | AMM Title and Description |
|---------------|---------------|---|
| Biology | AMM-BIO-10 | Standard Guardrail Feature for Wildlife Crossings. Caltrans would incorporate gaps at regular intervals along the proposed permanent concrete barrier (Type 60M) to enhance wildlife passage (Figure 1-4). This interval would be determined in coordination with regulatory agencies in the design and permitting process. |
| Biology | AMM-BIO-11 | AMM-BIO-11: Fish Passage Assessment. A first pass and, if necessary, second pass assessment would be conducted at all stream crossings in the Design phase of the Project. Caltrans would submit the assessment to the CDFW and add it to the CALFISH database. If any fish passage barrier is identified, remediation would be designed in consultation with CDFW. The Project would comply with Fish and Game Code section 5901 and would not install or maintain any device or structure that impedes the passing of fish up and down stream of SR 12. |
| Wildfire | AMM-WF-1 | <p>Implement Fire Prevention Practices During Construction. Caltrans would implement the following fire prevention practices to reduce the potential for wildfire:</p> <ul style="list-style-type: none"> • Internal combustion engines, stationary and mobile, would be equipped with spark arrestors. Spark arrestors would be in good working order. • Contractor would keep all construction sites and staging areas free of grass, brush, and other flammable materials. • Personnel would be trained in the practices of the fire safety plan relevant to their duties. • Construction and maintenance personnel would be trained and equipped to extinguish small fires. • Work crews would have fire extinguishing equipment on hand, as well as emergency numbers and cell phone or other means of contacting the fire department. <p>Smoking would be prohibited while operating equipment and would be limited to paved or graveled areas or areas cleared of all vegetation. Smoking would be prohibited within 30 feet of any combustible material storage area (including fuels, gases, and solvents). Smoking would be prohibited in any location during a Red Flag Warning issued by the National Weather Service for the Project area.</p> |

| Resource Area | Mitigation Measure Reference | Mitigation Measure Title and Description |
|---------------|------------------------------|---|
| Biology | MM-BIO-1 | <p>Compensation to Offset Project Permanent Impacts. To offset permanent impacts from the Project, Caltrans will implement a compensation package based on the estimated impacts on protected natural resources, including wetlands, waters, and suitable habitat in the range of the listed species. Compensation will be determined in coordination with USFWS, USACE, RWQCB, CDFW, and/or Bay Conservation and Development Commission (BCDC) during the design phase. At a minimum, the compensation will be a 1:1 ratio and will be accomplished through a combination of onsite mitigation and/or purchase of mitigation credits. Compensation will include any one or a combination of the following approaches:</p> <ul style="list-style-type: none"> • Offsite mitigation through the purchase of credits at an approved conservation bank(s) • Development of a compensation plan that will provide in-lieu funding to a nearby restoration program or restoration project that would create, restore, preserve, or enhance resources similar to those adversely affected by the Project • Onsite restoration within the Caltrans ROW <p>The Mitigation and Monitoring Plan will be developed and tailored for the proposed mitigation site before construction.</p> <p>Compensation for temporary impacts on protected natural resources will be achieved through onsite in-kind habitat restoration to return the site to pre-construction conditions or better.</p> <p>Caltrans will provide a Funding Assurance Letter to the appropriate regulatory resource agencies stating that sufficient funds for California tiger salamander habitat compensation have been budgeted.</p> |
| Biology | MM-BIO -2 | <p>Wetland Mitigation Monitoring. After construction, Caltrans will monitor onsite vegetation at temporarily impacted wetland habitats and where any additional wetland enhancement or restoration is implemented as compensatory mitigation. Reports to environmental regulatory agencies on the status of monitoring following Project completion will be submitted as determined in Project permits and authorization. The Caltrans mitigation requirement will be considered satisfied once the target acreage of wetland habitat to be restored is successful, as determined and approved by the regulatory agencies requiring compensatory mitigation.</p> |

Appendix B Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION

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September 2021

NON-DISCRIMINATION POLICY STATEMENT

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A blue ink signature of Toks Omishakin, consisting of a stylized 'T' followed by a series of loops and a final flourish.

Toks Omishakin
Director

Appendix C List of Abbreviations

| Acronyms | Definition |
|-------------------|--|
| AB | Assembly Bill |
| ABAG | Association of Bay Area Governments |
| AC | Asphalt concrete |
| AFB | Air Force Base |
| AMM | avoidance and minimization measure |
| ASM-160 | Agriculture 160 acres |
| AT&T | American Telephone and Telegraph |
| BSA | biological study area |
| BMP | best management practice |
| CA | California |
| CAFE | Corporate Average Fuel Economy |
| CAL FIRE | California Department of Forestry and Fire |
| Caltrans | California Department of Transportation |
| CARB | California Air Resources Board |
| CDFW | California Department of Fish and Wildlife |
| CEQA | California Environmental Quality Act |
| CFR | <i>Code of Federal Regulations</i> |
| CGP | Construction General Permit |
| CH ₄ | methane |
| CO ₂ | carbon dioxide |
| CO ₂ e | carbon dioxide equivalent |
| DOT | [U.S.] Department of Transportation |
| EA | Expenditure Authorization |
| EO | executive order |
| ESA | environmentally sensitive area |
| FEMA | Federal Emergency Management Agency |

| Acronyms | Definition |
|------------------|---|
| FHWA | Federal Highway Administration |
| GHG | greenhouse gas |
| HFC | hydrofluorocarbon |
| IS | Initial Study |
| MBGR | metal beam guardrail |
| MGS | Midwest guardrail system |
| MND | Mitigated Negative Declaration |
| MPO | metropolitan planning organization |
| MTC | Metropolitan Transportation Commission |
| N ₂ O | nitrous oxide |
| NCCP | Natural Community Conservation Plan |
| NEPA | National Environmental Policy Act |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| OPR | Office of Planning and Research |
| PF | project feature |
| PG&E | Pacific Gas & Electric |
| PM | post mile |
| Project | State Route 12 Major Pavement Rehabilitation (2R) Project |
| ROW | right of way |
| RTP | Regional Transportation Plan |
| RWQCB | Regional Water Quality Control Board |
| SAFE | Safer Affordable Fuel-Efficient |
| SB | Senate Bill |
| SCS | Sustainable Communities Strategy |
| SF ₆ | sulfur hexafluoride |
| SFSU | San Francisco State University |
| SHOPP | State Highway Operation and Protection Program |

| Acronyms | Definition |
|-----------------|--------------------------------------|
| SMARA | Surface Mining and Reclamation Act |
| SR | State Route |
| SWPPP | Stormwater Pollution Prevention Plan |
| TBD | to be determined |
| TCE | temporary construction easement |
| TMP | Traffic Management Plan |
| USDOT | U.S. Department of Transportation |
| USEPA | U.S. Environmental Protection Agency |
| USFWS | U.S. Fish and Wildlife Service |
| USGCRP | U.S. Global Change Research Program |
| VMT | vehicle miles traveled |
| WEF | wildlife exclusion fencing |

Appendix D List of Technical Studies and References

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Appendix E Species Lists



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:

October 03, 2022

Project Code: 2023-0000510

Project Name: SOL-12 2R (2Q550) Major Pavement Rehab

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.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/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Project Code: 2023-0000510

Project Name: SOL-12 2R (2Q550) Major Pavement Rehab

Project Type: Road/Hwy - Maintenance/Modification

Project Description: The Proposed Project is location on State Route (SR) 12 from 0.5 mile east of Walter Road/Lawler Ranch Pkwy to 0.54 mile east of Shiloh/Lambie Road in Solano County. The Project proposes to rehabilitate the existing mainline traveled ways and shoulders.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.22471145,-121.89282294750451,14z>



Counties: Solano County, California

Endangered Species Act Species

There is a total of 15 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 Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

| NAME | STATUS |
|--|------------|
| Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613 | Endangered |

Birds

| NAME | STATUS |
|---|------------|
| California Clapper Rail <i>Rallus longirostris obsoletus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240 | Endangered |
| California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104 | Endangered |

Amphibians

| NAME | STATUS |
|--|------------|
| California Red-legged Frog <i>Rana draytonii</i> 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 |
| California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076 | Threatened |

Fishes

| NAME | STATUS |
|--|------------|
| Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321 | Threatened |

Insects

| NAME | STATUS |
|--|------------|
| Delta Green Ground Beetle <i>Elaphrus viridis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2319 | Threatened |
| Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743 | Candidate |

Crustaceans

| NAME | STATUS |
|---|------------|
| Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246 | Endangered |
| Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498 | Threatened |
| Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246 | Endangered |

Flowering Plants

| NAME | STATUS |
|---|------------|
| Contra Costa Goldfields <i>Lasthenia conjugens</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7058 | Endangered |
| Keck's Checker-mallow <i>Sidalcea keckii</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5704 | Endangered |
| Soft Bird's-beak <i>Cordylanthus mollis ssp. mollis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8541 | Endangered |
| Suisun Thistle <i>Cirsium hydrophilum var. hydrophilum</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2369 | Endangered |

Critical habitats

There are 4 critical habitats wholly or partially within your project area under this office's jurisdiction.

| NAME | STATUS |
|---|--------|
| Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> https://ecos.fws.gov/ecp/species/8246#crithab | Final |
| Contra Costa Goldfields <i>Lasthenia conjugens</i> https://ecos.fws.gov/ecp/species/7058#crithab | Final |
| Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> https://ecos.fws.gov/ecp/species/498#crithab | Final |
| Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> https://ecos.fws.gov/ecp/species/2246#crithab | Final |

IPaC User Contact Information

Agency: California Department of Transportation District 4

Name: Hannah Minderhout

Address: 111 Grand Ave.

City: Oakland

State: CA

Zip: 94612

Email: [REDACTED]

Phone: [REDACTED]



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: BIOS selection

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|--|--------------|----------------|----------------------|-------------|------------|--------------------------------|
| <i>Acipenser medirostris pop. 1</i> green sturgeon - southern DPS | AFCAA01031 | Threatened | None | G2T1 | S1 | |
| <i>Agelaius tricolor</i> tricolored blackbird | ABPBXB0020 | None | Threatened | G1G2 | S1S2 | SSC |
| <i>Ambystoma californiense pop. 1</i> California tiger salamander - central California DPS | AAAAA01181 | Threatened | Threatened | G2G3T3 | S3 | WL |
| <i>Andrena blennospermatis</i> Blennosperma vernal pool andrenid bee | IIHYM35030 | None | None | G2 | S2 | |
| <i>Asio flammeus</i> short-eared owl | ABNSB13040 | None | None | G5 | S3 | SSC |
| <i>Astragalus tener var. tener</i> alkali milk-vetch | PDFAB0F8R1 | None | None | G2T1 | S1 | 1B.2 |
| <i>Athene cunicularia</i> burrowing owl | ABNSB10010 | None | None | G4 | S3 | SSC |
| <i>Atriplex cordulata var. cordulata</i> heartscale | PDCHE040B0 | None | None | G3T2 | S2 | 1B.2 |
| <i>Atriplex depressa</i> brittlescale | PDCHE042L0 | None | None | G2 | S2 | 1B.2 |
| <i>Atriplex persistens</i> vernal pool smallscale | PDCHE042P0 | None | None | G2 | S2 | 1B.2 |
| <i>Bombus occidentalis</i> western bumble bee | IIHYM24252 | None | Candidate Endangered | G3 | S1 | |
| <i>Branchinecta conservatio</i> Conservancy fairy shrimp | ICBRA03010 | Endangered | None | G2 | S2 | |
| <i>Branchinecta lynchi</i> vernal pool fairy shrimp | ICBRA03030 | Threatened | None | G3 | S3 | |
| <i>Branchinecta mesoavallensis</i> midvalley fairy shrimp | ICBRA03150 | None | None | G2 | S2S3 | |
| <i>Buteo regalis</i> ferruginous hawk | ABNKC19120 | None | None | G4 | S3S4 | WL |
| <i>Buteo swainsoni</i> Swainson's hawk | ABNKC19070 | None | Threatened | G5 | S3 | |
| <i>Carex lyngbyei</i> Lyngbye's sedge | PMCYP037Y0 | None | None | G5 | S3 | 2B.2 |
| <i>Centromadia parryi ssp. parryi</i> pappose tarplant | PDAST4R0P2 | None | None | G3T2 | S2 | 1B.2 |
| <i>Charadrius montanus</i> mountain plover | ABNNB03100 | None | None | G3 | S2S3 | SSC |
| <i>Chloropyron molle ssp. hispidum</i> hispid salty bird's-beak | PDSCR0J0D1 | None | None | G2T1 | S1 | 1B.1 |



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|--|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <i>Chloropyron molle ssp. molle</i> soft salty bird's-beak | PDSCR0J0D2 | Endangered | Rare | G2T1 | S1 | 1B.2 |
| <i>Cicuta maculata var. bolanderi</i> Bolander's water-hemlock | PDAP10M051 | None | None | G5T4T5 | S2? | 2B.1 |
| <i>Circus hudsonius</i> northern harrier | ABNKC11011 | None | None | G5 | S3 | SSC |
| <i>Cirsium hydrophilum var. hydrophilum</i> Suisun thistle | PDAST2E1G1 | Endangered | None | G2T1 | S1 | 1B.1 |
| <i>Coastal Brackish Marsh</i> Coastal Brackish Marsh | CTT52200CA | None | None | G2 | S2.1 | |
| <i>Coturnicops noveboracensis</i> yellow rail | ABNME01010 | None | None | G4 | S1S2 | SSC |
| <i>Danaus plexippus plexippus pop. 1</i> monarch - California overwintering population | IILEPP2012 | Candidate | None | G4T1T2 | S2 | |
| <i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle | IICOL48011 | Threatened | None | G3T2T3 | S3 | |
| <i>Downingia pusilla</i> dwarf downingia | PDCAM060C0 | None | None | GU | S2 | 2B.2 |
| <i>Dumontia oregonensis</i> hairy water flea | ICBRA23010 | None | None | G1G3 | S1 | |
| <i>Egretta thula</i> snowy egret | ABNGA06030 | None | None | G5 | S4 | |
| <i>Elaphrus viridis</i> Delta green ground beetle | IICOL36010 | Threatened | None | G1 | S1 | |
| <i>Emys marmorata</i> western pond turtle | ARAAD02030 | None | None | G3G4 | S3 | SSC |
| <i>Eriogonum truncatum</i> Mt. Diablo buckwheat | PDPGN085Z0 | None | None | G1 | S1 | 1B.1 |
| <i>Extriplex joaquinana</i> San Joaquin spearscale | PDCHE041F3 | None | None | G2 | S2 | 1B.2 |
| <i>Fritillaria liliacea</i> fragrant fritillary | PMLIL0V0C0 | None | None | G2 | S2 | 1B.2 |
| <i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat | ABPBX1201A | None | None | G5T3 | S3 | SSC |
| <i>Gratiola heterosepala</i> Boggs Lake hedge-hyssop | PDSCR0R060 | None | Endangered | G2 | S2 | 1B.2 |
| <i>Hydrochara rickseckeri</i> Ricksecker's water scavenger beetle | IICOL5V010 | None | None | G2? | S2? | |
| <i>Isocoma arguta</i> Carquinez goldenbush | PDAST57050 | None | None | G1 | S1 | 1B.1 |
| <i>Lasiurus cinereus</i> hoary bat | AMACC05032 | None | None | G3G4 | S4 | |



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| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|--|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <i>Lasthenia chrysantha</i> alkali-sink goldfields | PDAST5L030 | None | None | G2 | S2 | 1B.1 |
| <i>Lasthenia conjugens</i> Contra Costa goldfields | PDAST5L040 | Endangered | None | G1 | S1 | 1B.1 |
| <i>Lasthenia glabrata ssp. coulteri</i> Coulter's goldfields | PDAST5L0A1 | None | None | G4T2 | S2 | 1B.1 |
| <i>Lateralus jamaicensis coturniculus</i> California black rail | ABNME03041 | None | Threatened | G3T1 | S1 | FP |
| <i>Lathyrus jepsonii var. jepsonii</i> Delta tule pea | PDFAB250D2 | None | None | G5T2 | S2 | 1B.2 |
| <i>Legenere limosa</i> legenere | PDCAM0C010 | None | None | G2 | S2 | 1B.1 |
| <i>Lepidium latipes var. heckardii</i> Heckard's pepper-grass | PDBRA1M0K1 | None | None | G4T1 | S1 | 1B.2 |
| <i>Lepidurus packardii</i> vernal pool tadpole shrimp | ICBRA10010 | Endangered | None | G4 | S3 | |
| <i>Lilaeopsis masonii</i> Mason's lilaeopsis | PDAP119030 | None | Rare | G2 | S2 | 1B.1 |
| <i>Linderiella occidentalis</i> California linderiella | ICBRA06010 | None | None | G2G3 | S2S3 | |
| <i>Melospiza melodia maxillaris</i> Suisun song sparrow | ABPBXA301K | None | None | G5T3 | S3 | SSC |
| <i>Microseris paludosa</i> marsh microseris | PDAST6E0D0 | None | None | G2 | S2 | 1B.2 |
| <i>Navarretia leucocephala ssp. bakeri</i> Baker's navarretia | PDPLM0C0E1 | None | None | G4T2 | S2 | 1B.1 |
| <i>Neostapfia colusana</i> Colusa grass | PMPOA4C010 | Threatened | Endangered | G1 | S1 | 1B.1 |
| <i>Northern Claypan Vernal Pool</i> Northern Claypan Vernal Pool | CTT44120CA | None | None | G1 | S1.1 | |
| <i>Nycticorax nycticorax</i> black-crowned night heron | ABNGA11010 | None | None | G5 | S4 | |
| <i>Orcuttia inaequalis</i> San Joaquin Valley Orcutt grass | PMPOA4G060 | Threatened | Endangered | G1 | S1 | 1B.1 |
| <i>Plagiobothrys hystriculus</i> bearded popcornflower | PDBOR0V0H0 | None | None | G2 | S2 | 1B.1 |
| <i>Pogonichthys macrolepidotus</i> Sacramento splittail | AFCJB34020 | None | None | G3 | S3 | SSC |
| <i>Puccinellia simplex</i> California alkali grass | PMPOA53110 | None | None | G2 | S2 | 1B.2 |
| <i>Rallus obsoletus obsoletus</i> California Ridgway's rail | ABNME05011 | Endangered | Endangered | G3T1 | S1 | FP |



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| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|--|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <i>Reithrodontomys raviventris</i> salt-marsh harvest mouse | AMAFF02040 | Endangered | Endangered | G1G2 | S1S2 | FP |
| <i>Sidalcea keckii</i> Keck's checkerbloom | PDMAL110D0 | Endangered | None | G2 | S2 | 1B.1 |
| <i>Sorex ornatus sinuosus</i> Suisun shrew | AMABA01103 | None | None | G5T1T2Q | S1S2 | SSC |
| <i>Spergularia macrotheca var. longistyla</i> long-styled sand-spurrey | PDCAR0W062 | None | None | G5T2 | S2 | 1B.2 |
| <i>Spirinchus thaleichthys</i> longfin smelt | AFCHB03010 | Candidate | Threatened | G5 | S1 | |
| <i>Stuckenia filiformis ssp. alpina</i> northern slender pondweed | PMPO03091 | None | None | G5T5 | S2S3 | 2B.2 |
| <i>Symphyotrichum lentum</i> Suisun Marsh aster | PDASTE8470 | None | None | G2 | S2 | 1B.2 |
| <i>Trifolium amoenum</i> two-fork clover | PDFAB40040 | Endangered | None | G1 | S1 | 1B.1 |
| <i>Trifolium hydrophilum</i> saline clover | PDFAB400R5 | None | None | G2 | S2 | 1B.2 |
| <i>Tuctoria mucronata</i> Crampton's tuctoria or Solano grass | PMPOA6N020 | Endangered | Endangered | G1 | S1 | 1B.1 |
| Valley Needlegrass Grassland Valley Needlegrass Grassland | CTT42110CA | None | None | G3 | S3.1 | |

Record Count: 73

CNPS Inventory of Rare and Endangered Plants

| Scientific Name | Common Name | CRPR | CESA | FESA | Blooming Period | Habitat and Microhabitat | Elev. ft (Low) | Elev. ft (High) |
|---|--------------------------|------|------|------|-----------------|--|----------------|-----------------|
| <i>Astragalus tener</i> var. <i>ferrisiae</i> | Ferris' milk-vetch | 1B.1 | None | None | Apr-May | Meadows and seeps, Valley and foothill grassland | 5 | 245 |
| <i>Astragalus tener</i> var. <i>tener</i> | alkali milk-vetch | 1B.2 | None | None | Mar-Jun | Playas, Valley and foothill grassland, Vernal pools. Alkaline | 5 | 195 |
| <i>Atriplex cordulata</i> var. <i>cordulata</i> | heartscale | 1B.2 | None | None | Apr-Oct | Chenopod scrub, Meadows and seeps, Valley and foothill grassland. Alkaline (sometimes) | 0 | 1835 |
| <i>Atriplex coronata</i> var. <i>coronata</i> | crownscale | 4.2 | None | None | Mar-Oct | Chenopod scrub, Valley and foothill grassland, Vernal pools. Alkaline, Clay (often) | 5 | 1935 |
| <i>Atriplex depressa</i> | brittlescale | 1B.2 | None | None | Apr-Oct | Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools. Alkaline, Clay | 5 | 1050 |
| <i>Atriplex persistens</i> | vernal pool smallscale | 1B.2 | None | None | Jun-Oct | Vernal pools | 35 | 375 |
| <i>Blepharizonia plumosa</i> | big tarplant | 1B.1 | None | None | Jul-Oct | Valley and foothill grassland. Clay (usually) | 100 | 1655 |
| <i>Carex lyngbyei</i> | Lyngbye's sedge | 2B.2 | None | None | Apr-Aug | Marshes and swamps | 0 | 35 |
| <i>Castilleja ambigua</i> var. <i>ambigua</i> | johnny-nip | 4.2 | None | None | Mar-Aug | Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools | 0 | 1425 |
| <i>Centromadia parryi</i> ssp. <i>congdonii</i> | Congdon's tarplant | 1B.1 | None | None | May-Oct (Nov) | Valley and foothill grassland | 0 | 755 |
| <i>Centromadia parryi</i> ssp. <i>parryi</i> | pappose tarplant | 1B.2 | None | None | May-Nov | Chaparral, Coastal prairie, Marshes and swamps, Meadows and seeps, Valley and foothill grassland. Alkaline (often) | 0 | 1380 |
| <i>Centromadia parryi</i> ssp. <i>rudis</i> | Parry's rough tarplant | 4.2 | None | None | May-Oct | Valley and foothill grassland, Vernal pools. Alkaline, Roadsides (sometimes), Seeps, Vernal Mesic | 0 | 330 |
| <i>Chloropyron molle</i> ssp. <i>hispidum</i> | hispid salty bird's-beak | 1B.1 | None | None | Jun-Sep | Meadows and seeps, Playas, Valley and foothill grassland. Alkaline | 5 | 510 |

CNPS Inventory of Rare and Endangered Plants

| Scientific Name | Common Name | CRPR | CESA | FESA | Blooming Period | Habitat and Microhabitat | Elev. ft (Low) | Elev. ft (High) |
|--|----------------------------------|------|------|------|---------------------|---|----------------|-----------------|
| <i>Chloropyron molle</i> ssp. <i>molle</i> | soft salty bird's-beak | 1B.2 | CR | FE | Jun-Nov | Marshes and swamps | 0 | 10 |
| <i>Cicuta maculata</i> var. <i>bolanderi</i> | Bolander's water-hemlock | 2B.1 | None | None | Jul-Sep | Marshes and swamps | 0 | 655 |
| <i>Cirsium hydrophilum</i> var. <i>hydrophilum</i> | Suisun thistle | 1B.1 | None | FE | Jun-Sep | Marshes and swamps | 0 | 5 |
| <i>Convolvulus simulans</i> | small-flowered morning-glory | 4.2 | None | None | Mar-Jul | Chaparral, Coastal scrub, Valley and foothill grassland. Clay, Seeps, Serpentine | 100 | 2430 |
| <i>Cryptantha hooveri</i> | Hoover's cryptantha | 1A | None | None | Apr-May | Inland dunes, Valley and foothill grassland | 30 | 490 |
| <i>Delphinium recurvatum</i> | recurved larkspur | 1B.2 | None | None | Mar-Jun | Chenopod scrub, Cismontane woodland, Valley and foothill grassland. Alkaline | 10 | 2590 |
| <i>Downingia pusilla</i> | dwarf downingia | 2B.2 | None | None | Mar-May | Valley and foothill grassland, Vernal pools | 5 | 1460 |
| <i>Eleocharis parvula</i> | small spikerush | 4.3 | None | None | (Apr) Jun-Aug (Sep) | Marshes and swamps | 5 | 9910 |
| <i>Erigeron biolettii</i> | streamside daisy | 3 | None | None | Jun-Oct | Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest. Mesic, Rocky | 100 | 3610 |
| <i>Eriogonum nudum</i> var. <i>psychicola</i> | Antioch Dunes buckwheat | 1B.1 | None | None | Jul-Oct | Inland dunes | 0 | 65 |
| <i>Eriogonum truncatum</i> | Mt. Diablo buckwheat | 1B.1 | None | None | Apr-Sep (Nov-Dec) | Chaparral, Coastal scrub, Valley and foothill grassland. Sandy | 10 | 1150 |
| <i>Eryngium jepsonii</i> | Jepson's coyote-thistle | 1B.2 | None | None | Apr-Aug | Valley and foothill grassland, Vernal pools. Clay | 10 | 985 |
| <i>Erysimum capitatum</i> var. <i>angustatum</i> | Contra Costa wallflower | 1B.1 | CE | FE | Mar-Jul | Inland dunes | 10 | 65 |
| <i>Eschscholzia rhombipetala</i> | diamond-petaled California poppy | 1B.1 | None | None | Mar-Apr | Valley and foothill grassland | 0 | 3200 |
| <i>Extriplex joaquinana</i> | San Joaquin spearscale | 1B.2 | None | None | Apr-Oct | Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland. Alkaline | 5 | 2740 |

CNPS Inventory of Rare and Endangered Plants

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|--|-------------------------|------|------|------|-------------------|--|----------------|-----------------|
| <i>Fritillaria agrestis</i> | stinkbells | 4.2 | None | None | Mar-Jun | Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland. Clay, Serpentinite (sometimes) | 35 | 5100 |
| <i>Fritillaria liliacea</i> | fragrant fritillary | 1B.2 | None | None | Feb-Apr | Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland. Serpentinite (often) | 10 | 1345 |
| <i>Fritillaria pluriflora</i> | adobe-lily | 1B.2 | None | None | Feb-Apr | Chaparral, Cismontane woodland, Valley and foothill grassland. Adobe (often) | 195 | 2315 |
| <i>Gratiola heterosepala</i> | Boggs Lake hedge-hyssop | 1B.2 | CE | None | Apr-Aug | Marshes and swamps, Vernal pools. Clay | 35 | 7790 |
| <i>Hesperevax caulescens</i> | hogwallow starfish | 4.2 | None | None | Mar-Jun | Valley and foothill grassland, Vernal pools. Alkaline (sometimes) | 0 | 1655 |
| <i>Hesperolinon breweri</i> | Brewer's western flax | 1B.2 | None | None | May-Jul | Chaparral, Cismontane woodland, Valley and foothill grassland. Serpentinite (usually) | 100 | 3100 |
| <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> | woolly rose-mallow | 1B.2 | None | None | Jun-Sep | Marshes and swamps | 0 | 395 |
| <i>Iris longipetala</i> | coast iris | 4.2 | None | None | Mar-May (Jun) | Coastal prairie, Lower montane coniferous forest, Meadows and seeps. Mesic | 0 | 1970 |
| <i>Isocoma arguta</i> | Carquinez goldenbush | 1B.1 | None | None | Aug-Dec | Valley and foothill grassland | 5 | 65 |
| <i>Lasthenia chrysantha</i> | alkali-sink goldfields | 1B.1 | None | None | Feb-Apr | Vernal pools. Alkaline | 0 | 655 |
| <i>Lasthenia conjugens</i> | Contra Costa goldfields | 1B.1 | None | FE | Mar-Jun | Cismontane woodland, Playas, Valley and foothill grassland, Vernal pools. Mesic. | 0 | 1540 |
| <i>Lasthenia ferrisiae</i> | Ferris' goldfields | 4.2 | None | None | Feb-May | Vernal pools | 65 | 2295 |
| <i>Lasthenia glabrata</i> ssp. <i>coulteri</i> | Coulter's goldfields | 1B.1 | None | None | Feb-Jun | Marshes and swamps, Playas, Vernal pools | 5 | 4005 |
| <i>Lathyrus jepsonii</i> var. <i>jepsonii</i> | Delta tule pea | 1B.2 | None | None | May-Jul (Aug-Sep) | Marshes and swamps | 0 | 15 |
| <i>Legenere limosa</i> | legenere | 1B.1 | None | None | Apr-Jun | Vernal pools | 5 | 2885 |

CNPS Inventory of Rare and Endangered Plants

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|---|-------------------------|------|------|------|---------------------|--|----------------|-----------------|
| <i>Lepidium latipes</i> var. <i>heckardii</i> | Heckard's pepper-grass | 1B.2 | None | None | Mar-May | Valley and foothill grassland | 5 | 655 |
| <i>Lessingia hololeuca</i> | woolly-headed lessingia | 3 | None | None | Jun-Oct | Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland. Clay, Serpentine | 50 | 1000 |
| <i>Lilaeopsis masonii</i> | Mason's lilaeopsis | 1B.1 | CR | None | Apr-Nov | Marshes and swamps, Riparian scrub | 0 | 35 |
| <i>Lilium rubescens</i> | redwood lily | 4.2 | None | None | (Mar) Apr-Aug (Sep) | Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest. Roadsides (sometimes), Serpentine (sometimes) | 100 | 6265 |
| <i>Limosella australis</i> | Delta mudwort | 2B.1 | None | None | May-Aug | Marshes and swamps, Riparian scrub. Streambanks (usually) | 0 | 10 |
| <i>Lupinus albifrons</i> var. <i>abramsii</i> | Abrams' lupine | 3.2 | None | None | Apr-Jun | Broadleafed upland forest, Chaparral, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland. Serpentine (sometimes) | 410 | 6560 |
| <i>Meesia triquetra</i> | three-ranked hump moss | 4.2 | None | None | Jul | Bogs and fens, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest | 4265 | 9690 |
| <i>Microseris paludosa</i> | marsh microseris | 1B.2 | None | None | Apr-Jun (Jul) | Cismontane woodland, Closed-cone coniferous forest, Coastal scrub, Valley and foothill grassland | 15 | 1165 |
| <i>Myosurus minimus</i> ssp. <i>apus</i> | little mousetail | 3.1 | None | None | Mar-Jun | Valley and foothill grassland, Vernal pools | 65 | 2100 |
| <i>Navarretia leucocephala</i> ssp. <i>bakeri</i> | Baker's navarretia | 1B.1 | None | None | Apr-Jul | Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools. Mesic | 15 | 5710 |
| <i>Neostapfia colusana</i> | Colusa grass | 1B.1 | CE | FT | May-Aug | Vernal pools | 15 | 655 |

CNPS Inventory of Rare and Endangered Plants

| Scientific Name | Common Name | CRPR | CESA | FESA | Blooming Period | Habitat and Microhabitat | Elev. ft (Low) | Elev. ft (High) |
|--|-------------------------------------|------|------|------|-----------------|---|----------------|-----------------|
| <i>Oenothera deltooides</i> ssp. <i>howellii</i> | Antioch Dunes evening-primrose | 1B.1 | CE | FE | Mar-Sep | Inland dunes | 0 | 100 |
| <i>Orcuttia inaequalis</i> | San Joaquin Valley Orcutt grass | 1B.1 | CE | FT | Apr-Sep | Vernal pools | 35 | 2475 |
| <i>Perideridia gairdneri</i> ssp. <i>gairdneri</i> | Gairdner's yampah | 4.2 | None | None | Jun-Oct | Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools. Vernal Mesic | 0 | 2000 |
| <i>Plagiobothrys hystriculus</i> | bearded popcornflower | 1B.1 | None | None | Apr-May | Valley and foothill grassland, Vernal pools | 0 | 900 |
| <i>Puccinellia simplex</i> | California alkali grass | 1B.2 | None | None | Mar-May | Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools, Alkaline, Flats, Lake Margins, Vernal Mesic | 5 | 3050 |
| <i>Senecio hydrophiloides</i> | sweet marsh ragwort | 4.2 | None | None | May-Aug | Lower montane coniferous forest, Meadows and seeps. Mesic | 0 | 9185 |
| <i>Sidalcea keckii</i> | Keck's checkerbloom | 1B.1 | None | FE | Apr-May (Jun) | Cismontane woodland, Valley and foothill grassland. Clay, Serpentine | 245 | 2135 |
| <i>Spergularia macrotheca</i> var. <i>longistyla</i> | long-styled sand-spurrey | 1B.2 | None | None | Feb-May | Marshes and swamps, Meadows and seeps. Alkaline | 0 | 835 |
| <i>Stuckenia filiformis</i> ssp. <i>alpina</i> | northern slender pondweed | 2B.2 | None | None | May-Jul | Marshes and swamps | 985 | 7055 |
| <i>Symphyotrichum lentum</i> | Suisun Marsh aster | 1B.2 | None | None | (Apr) May-Nov | Marshes and swamps | 0 | 10 |
| <i>Trifolium amoenum</i> | two-fork clover | 1B.1 | None | FE | Apr-Jun | Coastal bluff scrub, Valley and foothill grassland | 15 | 1360 |
| <i>Trifolium hydrophilum</i> | saline clover | 1B.2 | None | None | Apr-Jun | Marshes and swamps, Valley and foothill grassland, Vernal pools | 0 | 985 |
| <i>Tuctoria mucronata</i> | Crampton's tuctoria or Solano grass | 1B.1 | CE | FE | Apr-Aug | Valley and foothill grassland, Vernal pools | 15 | 35 |
| <i>Viburnum ellipticum</i> | oval-leaved viburnum | 2B.3 | None | None | May-Jun | Chaparral, Cismontane woodland, Lower montane coniferous forest | 705 | 4595 |

From: Owens, Stephanie
Sent: Tuesday, November 1, 2022 2:56 PM
To: NMFS SpeciesList - NOAA Service Account
Subject: Official Species List-Rio Vista and Birds Landing

Hello, my name is Stephanie Owens and I am a biologist with Jacobs Engineering in Oakland, CA. I am requesting an official species list for the Caltrans State Route 12 Rehabilitation Project. I have copied and pasted the search results for a query I ran for the Rio Vista and Birds Landing quadrants where the project is located. Below my contact information, you will find the results.

Point of Contact:

Stephanie Owens, M.S.
Jacobs
Biologist | Global Environmental Solutions
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Quad Name **Rio Vista**

Quad Number **38121-B6**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) - **X**
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat - **X**
SRWR Chinook Salmon Critical Habitat - **X**
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -

CCV Steelhead Critical Habitat - **X**
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - **X**
Groundfish EFH - **X**
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

**See list at left and consult the NMFS Long Beach office
562-980-4000**

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Birds Landing**

Quad Number **38121-B7**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) -

CC Chinook Salmon ESU (T) -

CVSR Chinook Salmon ESU (T) - **X**

SRWR Chinook Salmon ESU (E) - **X**

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) - **X**

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) - **X**

Eulachon (T) -

sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -

CC Chinook Salmon Critical Habitat -

CVSR Chinook Salmon Critical Habitat -

SRWR Chinook Salmon Critical Habitat -

NC Steelhead Critical Habitat -

CCC Steelhead Critical Habitat -

SCCC Steelhead Critical Habitat -

SC Steelhead Critical Habitat -

CCV Steelhead Critical Habitat -

Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -

Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -

Leatherback Sea Turtle (E) -

North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

**See list at left and consult the NMFS Long Beach office
562-980-4000**

MMPA Cetaceans -
MMPA Pinnipeds -

From: NMFS SpeciesList - NOAA Service Account <nmfs.wcrca.specieslist@noaa.gov>
Sent: Tuesday, November 1, 2022 2:57 PM
To: prvs=33042d4ed3=stephanie.owens@jacobs.com
Subject: [EXTERNAL] Federal ESA - - NOAA Fisheries Species List Re: Official Species List-Rio Vista and Birds Landing

Please retain a copy of each email request that you send to NOAA at nmfs.wcrca.specieslist@noaa.gov as proof of your official Endangered Species Act SPECIES LIST. The email you send to NOAA should include the following information: your first and last name; email address; phone number; federal agency name (or delegated state agency such as Caltrans); mailing address; project title; brief description of the project; and a copy of a list of threatened or endangered species identified within specified geographic areas derived from the NOAA Fisheries, West Coast Region, California Species List Tool. You may only receive this instruction once per week. If you have questions, contact your local NOAA Fisheries liaison.

Appendix F Public Comments and Comment Responses

Comment Memorandum from San Francisco Bay Conservation and Development Commission:

DocuSign Envelope ID: C320FD92-BDE4-49C7-B670-1297EFEAF8A2

San Francisco Bay Conservation and Development Commission

375 Beale Street, Suite 510, San Francisco, California 94105 tel 415 352 3600 fax 888 348 5190
State of California | Gavin Newsom – Governor | info@bcdc.ca.gov | www.bcdc.ca.gov

November 7, 2022

Transmitted Via Email

California Department of Transportation, District 4
P.O. Box 23660, MS 8B
Oakland, CA 94623
ATTN: Maxwell Lammert, Senior Environmental Scientist

SUBJECT: Comments on the Initial Study with Proposed Mitigated Negative Declaration for the State Route 12 Major Pavement Rehabilitation (2R) Project

Dear Mr. Lammert:

Thank you for the opportunity to comment on the Initial Study with Proposed Mitigated Negative Declaration for the State Route 12 Major Pavement Rehabilitation (2R) Project (Project). This opportunity allows the San Francisco Bay Conservation and Development Commission (BCDC or Commission) to comment on aspects of the Project that we would be required to approve or deny through the exercise of our own regulatory authority under the McAteer-Petris Act, Suisun Marsh Preservation Act, and the California Code of Regulations.

I. PROJECT DESCRIPTION SUMMARY

Project. Caltrans proposes rehabilitation of approximately 6.4 miles of State Route 12 in Solano County. The proposed work includes replacing asphalt concrete surfacing and overlay, replacing temporary barriers located in the median with permanent concrete barriers, replacing shoulder and centerline rumble strips, replacing metal beam guardrail with Midwest guardrail system, upgrading crash cushions to current standards, upgrading drainage systems, widening shoulders, removing, and replacing the existing asphalt concrete dikes, and providing erosion control. In addition, the Project proposes to upgrade the bridge railings at the Union Creek bridge and Denverton Creek bridge to be consistent with current Caltrans standards.

Location. The Project site is located along State Route (SR) 12 from Post Mile (PM) 7.7 to PM 14.1 from approximately 0.5 miles east of Walter Road/Lawler Ranch Parkway (westernmost end) to 0.5 miles east of Shiloh/Lambie Road (easternmost end) in Solano County. Project activities will occur in the primary and secondary management areas of Suisun Marsh.



The San Francisco Bay Conservation and Development Commission (BCDC) is a responsible agency with discretionary approval power over aspects of the Project and will rely on the IS/MND when it considers the Project during permitting. BCDC is a State planning and regulatory agency with permitting authority over San Francisco Bay, the Bay shoreline, and Suisun Marsh, as established in the McAtteer-Petris Act and the Suisun Marsh Preservation Act. While the Commission itself has not reviewed the IS/MND, BCDC staff have prepared comments outlining specific Commission issues or policies that should be addressed either in the final IS/MND or through the Commission permitting process as appropriate. As we receive additional details on the project, we will be able to provide more detailed responses and can work closely with the project proponents to ensure the project is consistent with Commission laws and policies.

The comments below are based on the McAtteer-Petris Act, the Commission's San Francisco Bay Plan (Bay Plan), the Suisun Marsh Preservation Act, and the Commission's Suisun Marsh Protection Plan. Commission staff has initially identified and summarized several policies and policy areas that are likely to apply to the project, however we also encourage you to review the McAtteer-Petris Act and Bay Plan directly to ensure the project design complies with all relevant sections of these documents.

Per the McAtteer-Petris Act, BCDC is responsible for granting or denying permits for any proposed fill; extraction of materials; or substantial changes in use of any water, land, or structure within the Commission's jurisdiction (Government Code Section 66632). Additionally, BCDC establishes land use policies for the Bay as a resource and for development of the Bay and shoreline in the Bay Plan, which provides the basis for the Commission's review and actions on proposed projects. Additionally, pursuant to the Suisun Marsh Preservation Act, BCDC is responsible for issuing marsh development permits for all development occurring within the primary management area of Suisun Marsh (Government Code Section 29500 and 29501) and on the basis that such development is consistent with the Suisun Marsh Protection Plan.

II. BCDC Policies

The project as proposed incorporates several areas of impacts that overlay with the McAtteer-Petris Act, the Bay Plan, the Suisun Marsh Preservation Act and Suisun Marsh Protection Plan, which BCDC staff will use to evaluate the Project for a BCDC permit. The following policy areas are not exhaustive, but would benefit from further consideration in assessing the project impacts and finalizing the IS/MND. The policies of both the Bay Plan and the Suisun Marsh Protection Plan apply in Suisun Marsh, but the Suisun Marsh Protection Plan is a more specific application of the general, regional policies of the Bay Plan and for the unique characteristics of the Suisun Marsh. In any cases where there may be conflict between the policies of the two plans, the policies of the Suisun Marsh Protection Plan control.

A. Tidal Marsh Protection

The policies of the Suisun Marsh Protection Plan require that: "[t]he diversity of habitats in the Suisun Marsh and surrounding upland areas should be preserved and enhanced wherever possible to maintain the unique wildlife resource, the seasonal marshes, and

1-1



1-1

lowland grasslands are critical habitats for marsh related wildlife and are essential to the integrity of the Suisun Marsh..." and the "existing uses should continue in the upland grasslands and cultivated area surrounding the critical habitats of the Suisun Marsh in order to protect the marsh and preserve valuable marsh-related wildlife habitats. Where feasible, the value of the upland grasslands and cultivated lands as habitat for marsh-related wildlife should be enhanced." Additionally, the policies of the Bay Plan also require protection and that projects minimize impacts to tidal marshes and tidal flats.

The Project as described would have an anticipated 0.002 acres of temporary and 0.005 acres of permanent impacts to the Northern Claypan Vernal Pool, which function as critical habitat for special-status species vernal pool Branchiopods. Additionally, the Project would temporarily impact 0.22 acres and permanently impact 0.07 acres of potentially jurisdictional wetlands, and temporarily impact 0.52 acres and permanently impact 0.04 acres of potentially jurisdictional other waters within the Project footprint. It is not clear how much of the impact areas are within the Commission's jurisdiction at this time, but this should be quantified and provided to the Commission as part of the application and permitting process.

In addition to habitat impacts described above, several special-status species may be present within or adjacent to the project site. The impacts resulting from Project activities may include, but are not limited to, the following:

- Temporary impacts to California tiger salamander grassland breeding habitat;
- Temporary and permanent direct impacts to brackish marsh habitat for the salt marsh harvest mouse and the Suisun Shrew resulting from replacing culverts, widening shoulders, and the Union Creek bridge construction activities;
- Temporary impacts to special-status bird species with potential occurrence in the project site include: Swainson's Hawk, Western Burrowing Owl, Northern Harrier, California Ridgway's Rail, California Black Rail, and Tricolored Blackbird

To offset these impacts, the proposed mitigation measure MM-BIO-1 will require that Caltrans compensates for wetland and waters of the United States that are filled or disturbed to ensure no net loss of habitat functions and values. To this end, a Mitigation and Monitoring Plan will be developed, in consultation with BCDC and other regulatory agencies. BCDC will work with Caltrans to identify appropriate mitigation for these impacts. The Bay Plan policies on Mitigation direct that mitigation should first and foremost be provided onsite or nearby and should be in-kind. If this is not possible, then there is the potential to consider other options. In the final IS/MND, please provide additionally details on any proposed mitigation options and where these would occur.



B. Fish, Other Aquatic Organisms and Wildlife

1-2 The Bay Plan and Suisun Plan contain several findings and policies designed to protect and enhance habitat connectivity. Bay Plan Tidal Marsh Policy 5, states that “[t]o the greatest extent feasible, habitat projects should be sustained by natural processes; increase habitat connectivity; restore hydrological connections; provide opportunities for endangered species recovery; and provide opportunities for landward migration of Bay habitats.” Bay Plan Tidal Marsh Policy 6 requires, in part, that “[d]esign and evaluation of the project should include an analysis of: j) how the project adheres to regional restoration goals; (k) whether the project would be sustained by natural processes; and (l) how the project restores, enhances, or creates connectivity across Bay habitats at a local, sub-regional, and/or regional scale.” Additionally, the Suisun Marsh Protection Plan Utilities Facilities and Transportation Finding 4 states that “[h]ighways and roads, especially those bordered by chainlink fences, form barriers to movement of terrestrial Marsh wildlife. In addition, traffic on highways and roads creates intermittent noises which may alarm Marsh wildlife, although the actual effects of noise upon wildlife have not been determined.” All of these policies should be considered in the development of the designs of for the Project.

The Project proposes to replace temporary median barriers with permanent concrete 60M type median barriers. In addition, construction activities include relocating concrete dikes, and replacing an estimated six culverts (253 linear feet). Although the Project as described would not “construct any new permanent barriers to wildlife movement or otherwise interfere with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites from existing conditions”, the IS/MND acknowledges that “the highway hinders movement and dispersal of small animals due to high traffic volumes and concrete barriers in the median.” Please provide further consideration of the impacts to wildlife crossings across the roadway and what impacts the median barrier may pose. These impacts should be minimized or mitigated.

C. Water Quality and Erosion Control

1-3 The Project should be designed and constructed in a manner that minimizes the adverse impacts that would result from stormwater runoff and other non-point source pollution entering Suisun Marsh. All necessary best management practices, including hydroseeding, covering stockpiled materials, installing concrete washout facilities, temporary silt fences, fiber rolls, and other necessary measures, should be employed to assure that soil, sediments, or other materials will not be washed, blown, or fall beyond the project site during or after construction. A stormwater management plan should be provided ensuring compliance with requirements of the Regional Water Quality Control Board, San Francisco Bay Region.



1-3

Further, no work should significantly alter water management, circulation or drainage patterns or otherwise adversely affect any salt pond, managed wetland, or other sensitive diked wetland resources. If there are any potential impacts to water management, these should be clearly identified and addressed in the final IS/MND.

1-4

D. Climate Change and Sea Level Rise

The IS/MND concluded that sea level rise is not expected to have direct impacts to transportation facilities as the proposed Project is outside the coastal zone and not in area subject to sea level rise. As the Project lies in and adjacent to wetland areas subject to tidal action, please consider further analysis on risks to State Route 12 from sea level rise. The Bay Plan policies on Climate Change recommend that a risk assessment be prepared by a qualified engineer to evaluate mid-century and end-of-century sea level rise projections, current and planned flood protection, including an inundation map, and identifying potential flooding, degrees of uncertainty, consequences of defense failure, and risks to existing habitat. Please provide further details on the methods used in the referenced *Caltrans District 4 Climate Change Vulnerability Assessment* (2020) to justify the conclusion of no sea level rise impacts to the Project. Please note, that the Commission currently considers the best available science on sea level rise to be the 2018 Ocean Protection Council's Sea Level Rise Guidance, and the methods recommended in this document should be used for assessing the risks of flooding for the Project in the future.

1-5

E. Transportation

The Bay Plan asserts that "a primary goal of transportation planning, from the point of view of preserving and properly using the Bay, should be a substantial reduction in dependence on the single-occupant vehicle." Supporting policies include Bay Plan Transportation Policy 1 that directs the Commission to "...encourage alternative methods of transportation and land use planning efforts that support transit and that do not require fill" and Policy 4 requires that "[t]ransportation projects on the Bay shoreline and bridges over the Bay or certain waterways should include pedestrian and bicycle paths that will either be a part of the Bay Trail or connect the Bay Trail with other regional and community trails. Transportation projects should be designed to maintain and enhance visual and physical access to the Bay and along the Bay shoreline."

The proposed Project, as described in the IS/MND, states that it would conflict with Director's Policy 37, "Complete Streets", which would require that the Project provide facilities for pedestrians and bicyclists within the Project footprint. Please provide further consideration of the Project as to be in compliance with the Complete Streets policy, or justification for the non-assessment of project alternatives which would include those features. In addition, please provide further information in regards to how the proposed Project would align with past, current, and foreseeable future projects along the SR 12 corridor, as referenced in the IS/MND, including:



1-5

- Address 30.6 lane miles of pavement, asphalt pavement rehab, Class II Buffered bike lanes (SHOPP ID 23043);
- Address 16.1 lane miles of pavement, asphalt pavement rehab, Class I bike lane, crossing islands, new/modify crosswalks (SHOPP ID 20648); and
- Install flashing beacons, signal ahead warning signs and pavement markings, guard rails, and pedestrian access/sidewalks (SHOPP ID 22189, EA 0W110).

The Project includes fill or excavation within the Commission's jurisdiction. According to the Bay Plan Transportation Finding (e), fill for bridges and causeways are considered water-oriented uses, however solid fill (such as a levee or embankment) to accommodate a roadway is generally not considered a water-oriented use consistent with the McAteer-Petris Act. The Commission may not be able to approve fill in the Bay for expansion of the roadway sections on embankments. However, it is not clear from the IS/MND which portions of the fill are in which portions of the Commission's jurisdictions and a map may help clarify this. Please contact BCDC staff to help identify the specific Commission jurisdictions in the project area.

1-6

F. Appearance, Design, and Scenic Views

Although SR 12 in Solano County is not designated as a scenic drive in BCDC Bay Plan maps, it is worth considering the impact of Project design on the viewing of the Bay. Bay Plan policies on Appearance, Design, and Scenic Views emphasize that facilities "be located and designed so as not to impact visually on the Bay and shoreline" and "should be designed with views in mind." It is recommended that the height of median be taken into consideration for view impacts and be designed to minimize such impacts for bicyclists and motorists. In addition, please describe any impacts to scenic overlook signage on the side of the road which may result from shoulder widening.

1-7

G. Public Access

Please note that the Commission's law requires that all new development approved under the McAteer-Petris Act include maximum feasible public access consistent with the project. We noted that in our prior discussions with Caltrans staff, there were some ideas of improvements that Caltrans could consider adding to the Project to ensure that maximum feasible public access is included in the project. BCDC will continue having discussions with Caltrans staff on this issue, but it would be great if any potential public access improvements were also incorporated into the project description and analyzed in the final IS/MND.



Responses to SF Bay Conservation and Development Commission Comment Memorandum:

Response to Comment 1-1:

To offset permanent impacts to protected natural resources, including wetlands, waters, and suitable habitat for listed species, Caltrans will implement a mitigation package in consultation with regulatory agencies, including BCDC. At a minimum, mitigation will be at a 1:1 ratio and will be accomplished through a combination of onsite mitigation and/or purchase of mitigation credits. A Mitigation and Monitoring Plan will be developed with regulatory agencies during the permitting process. Please see MM-BIO-1 and 2 for more information.

Response to Comment 1-2:

Caltrans acknowledges that the current highway hinders the movement and dispersal of small animals due to high traffic volumes and existing K-rail barriers in the median. K-rail barriers are typically considered temporary, but this barrier has been in place for over 10 years and is considered the existing condition when evaluating how the Project would impact wildlife movement. All impacts of the Project are assessed in comparison to this existing condition.

This Project proposes to replace the temporary median barrier with permanent concrete Type 60M. These barriers are 42 inches tall (3.3 feet) and represent only a 6-inch increase from the existing barriers. In addition, 800 linear feet of new Midwest Guardrail System (MGS) would be installed as part of this Project. There would also be 200 linear feet of new transition railing, which is considered permeable to small wildlife such as CTS. Caltrans does not consider these changes to the existing condition as substantial when compared to the environmental baseline (existing conditions when the environmental review process started on this Project).

To enhance wildlife connectivity, Caltrans has included AMM-BIO-9: Culvert Design, which commits Caltrans to coordinating with CDFW and USFWS to address wildlife crossing opportunities at the subject culverts. These options would be further developed during the permitting processes with regulatory agencies, including BCDC. Furthermore, in the Final Environmental Document (FED), Caltrans has added AMM-BIO-10: Standard Guardrail Feature for Wildlife Crossings, which would incorporate gaps at regular intervals along the proposed barrier to accommodate wildlife passage opportunities. Please refer to AMM-BIO-9 and AMM-BIO-10 in the FED for more details on these measures. With these measures incorporated, Caltrans anticipates this Project would improve wildlife connectivity over the existing baseline.

Response to Comment 1-3:

A Stormwater Pollution Prevention Plan would be prepared prior to the start of project construction to detail the implementation of temporary construction site Best Management Practices (BMPs) during all phases of the Project to avoid or minimize stormwater and effects to surface water, groundwater, or domestic water supplies. Permanent Treatment BMPs would also be implemented. Please see Appendix A, PF WQ 1 through 3 for more details.

Response to Comment 1-4:

Caltrans published the “Caltrans District 4 Climate Change Vulnerability Assessment” in 2021, which utilized guidelines from the 2018 Ocean Protection Council’s (OPC) Sea Level Rise Guidance for its analysis. The vulnerability assessment utilized OPC sea level rise scenarios for 12 California coastline locations, and OPC projections were used in tandem with other sea level rise models to identify the areas of the State Highway System that are vulnerable to different levels of sea level rise. Since no one sea level rise model covers the entire coastline and Delta to date, Caltrans assessed sea level rise exposure using the best available sea level rise models from the US Geological Survey (USGS), National Oceanic and Atmospheric Administration, and Climate Central. For District 4 sea level rise exposure assessment, Caltrans used a combination of the USGS Coastal Storm Modeling System and Climate Central Model. According to the map resulting from this assessment, the stretch of SR 12 within this Project footprint would not be exposed to the impact of sea level rise at the levels evaluated (1.64 feet, 3.28 feet, and 5.74 feet.)

Response to Comment 1-5:

The Project would provide 8-foot shoulders on the bridges and roadway between PMs 9.0 and 12.5 within the Project footprint to accommodate bike traffic. These shoulders would be signed and striped as bike lanes. However, it would be difficult to provide pedestrian facilities as part of this Project for several reasons. There are currently no pedestrian facilities along this segment of the highway, making the addition of pedestrian facilities within the Project footprint non-functional as there would be no connectivity to other pedestrian facilities. The addition of pedestrian facilities would also require additional fill toward the Bay and result in more impacts on biological resources.

This Project is consistent with Bay Plan Transportation Policy 3. This policy states that if “a route must be located across the Bay or a...waterway...the crossing should be placed on a bridge or in a tunnel, not on solid fill.” This Project would widen the

Union Creek and Denverton Creek bridges by 6 feet to increase the width of the travel lanes from 11 to 12 feet and upgrade the bridge railings and median barriers. This work would not involve the placement of permanent fill into the creek. Caltrans will work with resource agencies, including BCDC, during the design phase of the Project to further address ways to avoid and minimize impacts to aquatic resources.

Response to Comment 1-6:

The Project proposes to replace the existing K-rails located in the median with permanent concrete barriers type 60M. This proposed median type would only be 6 inches higher than the existing K-rail and would not constitute a significant change in viewing of the Bay for bicyclists and motorists. In addition, the proposed bridge rails for both the Denverton and Union Creek bridges would be "see-through" railings that maximize visibility and minimize view-blocking elements, thereby preserving views to the maximum extent feasible and reducing visual changes from the Project. There are currently no scenic overlook signs identified along this corridor within the Project footprint. If one is added prior to Project construction, it would be replaced in-kind.

Response to Comment 1-7:

Caltrans is committed to fulfilling the public access component of the BCDC permit. Caltrans would continue to work with BCDC in the permitting phase to find the best options to improve public access.

Comment Memorandum from California Department of Fish and Wildlife

State of California
Department of Fish and Wildlife



M e m o r a n d u m

Date: November 8, 2022

To: Maxwell Lammert
California Department of Transportation
District 4
111 Grand Avenue
Oakland, CA 94612
Maxwell.Lammert@dot.ca.gov

DocuSigned by:

Erin Chappell

From: 6776946211FE488
Erin Chappell, Regional Manager
California Department of Fish and Wildlife-Bay Delta Region, 2825 Cordelia Road, Suite 100, Fairfield, CA 94534

Subject: State Route 12 Major Pavement Rehabilitation (2R) Project, Draft Initial Study with Mitigated Negative Declaration, SCH No. 2022100135, Solano County

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Completion (NOC) for the draft Initial Study with Mitigated Negative Declaration (IS/MND) for the State Route 12 Pavement Rehabilitation (2R) Project (Project), pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.¹ CDFW is submitting comments on the draft IS/MND as a means to inform the California Department of Transportation (Caltrans) as the Lead Agency, of our concerns regarding potentially significant impacts to sensitive resources associated with the proposed Project.

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's Lake and Streambed Alteration (LSA) regulatory authority. (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by

¹ CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

Mr. Maxwell Lammert
California Department of Transportation

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November 8, 2022

State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code. Pursuant to our jurisdiction, CDFW has the following concerns, comments, and recommendations regarding the Project.

PROJECT LOCATION AND DESCRIPTION

Caltrans proposes the Project at Post Mile (PM) 7.7 to PM 14.1 in Solano County, California. The Project will rehabilitate the existing mainline travel lane and shoulder roadway pavement on SR-12 from 0.5 mile east of Walter Road/Lawler Ranch Parkway (westernmost end) to 0.5 mile east of Shiloh/Lambie Road. The Project will replace asphalt concrete surfacing and overlay, replace the temporary barriers located in the median with permanent concrete barriers type 60M, replace shoulder and centerline rumble strips. The Project will also replace metal beam guardrail with Midwest guardrail system, upgrade crash cushions to current standards, upgrade drainage systems, widen shoulders, remove and replace the existing asphalt concrete dikes, and provide erosion control where necessary. In addition, the Project will also upgrade the bridge railings at the Union Creek bridge and Denver Creek bridge to be consistent with current Caltrans design standards.

REGULATORY AUTHORITY

Lake and Streambed Alteration Agreement Notification

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et. seq., for or any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank (including associated riparian or wetland resources); or deposit or dispose of material where it may pass into a river, lake or stream. Work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are generally subject to notification requirements.

Fully Protected Species

Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except for collecting these species for necessary scientific research and relocation of a fully protected bird species for the protection of livestock. Take of any fully protected species is prohibited, and CDFW cannot authorize their take in association with a general project except under the provisions of a Natural Communities Conservation Plan (NCCP), 2081.7 or a Memorandum of Understanding for scientific research, including efforts to recover fully protected, threatened or endangered species. "Scientific Research" does not include an action taken as part of specified mitigation for a project, as defined in Section 21065 of the Public Resources Code.

Mr. Maxwell Lammert
California Department of Transportation

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November 8, 2022

California Endangered Species Act

Please be advised that a CESA Permit must be obtained if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Issuance of a CESA Permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit. CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (CEQA section 21001(c), 21083, and CEQA Guidelines section 15380, 15064, 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The CEQA Lead Agency's FOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code, section 2080. More information on the CESA permitting process can be found on the CDFW website at <https://www.wildlife.ca.gov/Conservation/CESA>.

COMMENTS AND RECOMMENDATIONS

COMMENT 1: Terrestrial Wildlife Connectivity

Issue: The Project has the potential to significantly impact terrestrial wildlife connectivity over the 6.4-mile linear stretch of highway within Solano County. The surrounding habitat supports threatened, endangered, special-status and native species including but not limited to California tiger salamander, California red-legged frog and western burrowing owl. The Project has the potential to further fragment thousands of acres of surrounding habitat and may result in potentially inmitigable significant impacts to wildlife movement if not designed properly. The Union Creek Bridge and the corresponding creek corridor represents a core linkage between two core reserve habitat areas (BIOS; DS-2693). The proposed Project may represent a change in surrounding land use and reduce connectivity because Caltrans is proposing to convert the existing two-lane highway that is currently semi-porous to terrestrial movement to a segment of highway with Type 60M concrete barriers (4.3 feet in height). An alternative design for the median barriers and any proposed barrier walls should utilize the Midwest style guardrail design to maintain porous connectivity or design the barrier wall system in consultation with the natural resource agencies to maintain terrestrial connectivity.

Evidence the impact would be significant: California wildlife is losing the ability to move and migrate as habitat conversion and built infrastructure disrupt species habitat and cut off migration corridors (Senate Bill 790; SB-790). The current baseline condition of the area proposed for the expansion of the existing state highway system represents a semi-permeable barrier to wildlife connectivity. Larger wildlife species may cross at their own risk of injury or mortality but smaller species such as herpetofauna would most likely not cross the highway successfully without incurring injury or mortality. The Project

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represents a potentially significant impact to connectivity due to the proposed increase in the number of travel lanes, proposal for median barrier walls, edge of pavement barriers and access roads that will all significantly expand the width and complexity of the corridor.

Section 15355 of the CEQA guidelines states that cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. This Project represents a single project that will be proceeded by additional phases of construction and the construction of supporting infrastructure and development projects surrounding the highway. This Project can therefore be regarded as a potentially significant cumulative impact to terrestrial wildlife connectivity when compared to its existing baseline condition and when considering the future infrastructure phases being proposed or considered.

Recommendation: CDFW recommends the following are incorporated into the MND:

Recommendation Mitigation Measure 1 – Wildlife Connectivity: Terrestrial connectivity elements such as wildlife friendly culverts, under-crossings and other forms of wildlife-crossing designs should be programmed into the Project as design features as conditions of approval. To inform design and placement of connectivity features, the lead agency shall develop a wildlife movement study. The study should occur over a minimum period of 12 months prior to the initiation of construction. The study shall occur within the limits of the proposed Project to develop a baseline understanding of the areas where wildlife movement and crossings are most prevalent. The study should also be utilized to inform Project design to identify areas where wildlife crossing structure(s) installation(s) would result in the largest benefit to rare, threatened and endangered species as well as special-status species and non-special-status species for wildlife connectivity. Analysis during the 12-month study shall be utilized to determine the type, size and number of structures that would be most beneficial to facilitate wildlife connectivity (new wildlife crossing culverts, modification of existing culverts, wildlife crossing bridges, etc.). Upon completion of the Project the wildlife connectivity structures should be studied for an additional 12-month period, at minimum, to determine the effectiveness of structure utilization by wildlife. The protocol for the baseline survey, post-construction surveys, site selection criteria and design criteria for the development of the wildlife connectivity structures should follow the protocols outlined in; *The California Department of Transportation (Caltrans), Wildlife Crossings Design Manual* (Caltrans, 2009) and the *Federal Highway Administration Wildlife Crossing Structure Handbook – Design and Evaluation in North America, Publication No. FHWA-CFL/TD-11-003* (FHWA, 2011).

Recommendation Mitigation Measure 2 – Wildlife Connectivity: The lead agency should develop a series of heat maps for target species along the SR-12 corridor using high value resource layers including but not limited to species presence/absence,

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drainages, culverts, creeks, road-strike data and wildlife linkage corridors for pinpointing key wildlife crossing locations with high permeability.

2-1

Recommendation Mitigation Measure 3 – Alternative Design of Median Barriers:

The lead agency should not implement Type 60M concrete barrier wall installation in between travel lanes on SR-12. This will create an impenetrable wall for most species of wildlife to traverse. A Midwest guardrail style design or system designed in consultation with the natural resource agencies has more potential to maintain connectivity for wildlife.

COMMENT 2: Lake and Streambed Alteration Program

Issue: The Project has the potential to significantly impact fish and wildlife resources associated with California aquatic resource features (BIOS; DS-2836) that maybe subject to notification requirements pursuant to Fish and Game Code § 1602.

Recommendation: CDFW recommends the following measures be incorporated into the MND:

2-2

Recommendation Mitigation Measure 1 – Stream Crossing Analysis: CDFW recommends providing a series of tables and maps that identify all potential stream crossings, culverts and stream modifications, subject to notification to the LSA Program for each alternative. The tables should include information that notes Post-Mile (PM) location of the conveyance, proposed work, linear feet of impact, acres of impact, proposed tree and vegetation removals and potential for use of conveyance in terrestrial connectivity. The tables should also be cross referenced with maps of the existing or proposed structure locations.

Recommendation Mitigation Measure 2 – Fish and Wildlife Resources: Pursuant to Fish and Game Code section 1603, if CDFW determines that the Project could substantially adversely affect existing fish or wildlife resources CDFW will include measures in the LSA Agreement necessary to protect those resources. Measures may include, but not be limited to on-site and/or off-site enhancement, restoration and/or compensatory mitigation for permanent and temporary impacts. It is recommended that the lead agency includes project related enhancements, restoration and mitigation activities into the MND for subsequent review and comment by the natural resource agencies.

COMMENT 3: Fish Passage Assessment

2-3

Issue: Multiple potential fish passage barriers and unassessed locations exist within the identified Project limits, as described in the recommendations section below. Senate Bill 857 (SB-857), which amended Fish and Game Code § 5901 and added § 156 to the Streets and Highways Code states in § 156.3, "For any project using state or federal transportation funds programmed after January 1, 2006, [Caltrans] shall ensure that, if the project affects a stream crossing on a stream where anadromous fish are, or

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historically were found, an assessment of potential barriers to fish passage is done prior to commencing project design. [Caltrans] shall submit the assessment to the [CDFW] and add it to the CALFISH database. If any structural barrier to passage exists, remediation of the problem shall be designed into the project by the implementing agency. New projects shall be constructed so that they do not present a barrier to fish passage. When barriers to fish passage are being addressed, plans and projects shall be developed in consultation with the [CDFW].

Evidence the impact would be significant: The Project contains stream crossings within areas mapped as historic or current watersheds where anadromous fish are, or historically were found. The species include but are not limited to Steelhead – California Central Valley DPS (BIOS; DS-810), Steelhead – Central Coast DPS (BIOS; DS-806), Chinook Salmon – Central Valley Fall Run/Late Fall Run ESU (BIOS; DS-802), Chinook Salmon – Winter Run (BIOS; DS-800). The decline of naturally spawning salmon and steelhead trout is primarily a result of the loss of appropriate stream habitat and the inability of fish to get access to habitat, according to reports to the Fish and Game Commission and by the CDFW (CDFW, 1996). Restoration of access to historical spawning and rearing areas should be incorporated into the Project design through barrier modification, fishway installation, or other means (CDFW, 1996).

2-3

Recommendations: If barriers or unassessed barriers noted within the Project limits identified below are found to be a barrier to fish passage, remediation of the problem should be designed into the Project by the implementing agency as a Project feature in consultation with CDFW and other natural resource agencies. CDFW recommends discussing the following locations as they pertain to fish passage:

Location 1, Unnamed Channel to Hill Slough, PM 7.9; SR-12, (Latitude: 38.2358; Longitude: -121.9842; Alameda County), Fish Passage Assessment Database ID# 761298, fish barrier status: unassessed.

Location 2, unnamed channel to Hill Slough, PM 8, SR – 12, (Latitude: 38.2347; Longitude: -121.9830; Alameda County), Fish Passage Assessment Database ID# 761299, fish barrier status: unassessed.

Location 3, Union Creek, PM 8.5, SR-12, (Latitude: 38.2295; Longitude: -122.9758; Alameda County), Fish Passage Assessment Database ID# 761300, fish barrier status: unassessed.

Location 4, Simmons Slough, PM 9.5, SR-12, (Latitude: 38.2284; Longitude: -121.9592; Alameda County), Fish Passage Assessment Database ID# 761301, fish barrier status: unassessed.

Location 5, unnamed channel to Luco Slough, PM 11.9, SR-12, (Latitude: 38.2283; Longitude: -121.9150; Alameda County), Fish Passage Assessment Database ID# 761302, fish barrier status: unassessed.

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Location 6, Denverton Creek, PM 13, SR-12, (Latitude: 38.2276; Longitude: -121.8962; Alameda County), Fish Passage Assessment Database ID# 761303, fish barrier status: unassessed.

Location 7, unnamed channel to Denverton Creek, PM 14.1, SR-12, (Latitude: 38.2145; Longitude: -121.8836; Alameda County), Fish Passage Assessment Database ID# 761304, fish barrier status: unassessed.

2-3

The fish passage section should discuss the current status of the crossing location noted in the California Fish Passage Assessment Database, conduct first pass and or second pass fish assessments, as necessary, as well as provide images of the upstream and downstream ends of water conveyance structure. CDFW requests a fish passage discussion section is included to address this potentially significant impact through the following avoidance and minimization measures, which should be made conditions of approval by the lead agency.

Recommended Mitigation Measure 1 - Fish Passage Assessment: To evaluate potential impacts to native fish species and fisheries resources, Caltrans should submit the assessment to the CDFW and add it to the CALFISH database. If any structural barrier to passage exists, remediation of the problem shall be designed into the project by the implementing agency. New projects shall be constructed so that they do not present a barrier to fish passage. When barriers to fish passage are being addressed, plans and projects shall be developed in consultation with the CDFW. CDFW shall be engaged prior to design in early coordination and at 30% design at minimum.

COMMENT 4: Bat Assessment and Avoidance

Issue: The Project has a high potential for bat species identified in the Environmental Setting section of this letter to roost within the Project limits (BIOS; DS-2498, DS-2497 and DS-2496). In order to determine the extent to which impacts may occur to bats and determine where habitat loss may occur from the replacement of structures or removal of trees, it is important the lead agency develop information in tables, maps and text descriptions to depict where potential bat habitat exists. Detailed information should also be provided in the subsequent draft EIR that includes a description, table and map where new structures will be constructed that could provide new roosting habitat structures for bats such as bridges, culverts and overpasses.

2-4

Recommendation: CDFW recommends incorporating the following into the AMM-BIO-8: Pre-Construction Bat Surveys and Avoidance Measures is updated to incorporate the following:

Recommended Mitigation Measure 1 – Bat Habitat Assessment: A qualified biologist should conduct a habitat assessment within the Project limits for suitable bat roosting habitat. The habitat assessment shall include a visual inspection of features within 200 feet of the work area for potential roosting features including trees, crevices, portholes, expansion joints and hollow areas (bats need not be present). A report

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should be provided by the qualified biologist and incorporated into the MND that includes a section discussing the locations of suitable bat habitat and if any bats or signs of bats (feces or staining at entry/exit points) are discovered. The surveys should occur at least two years in advance of Project initiation.

Recommended Mitigation Measure 2 – Bat Habitat Monitoring: If potentially suitable bat roosting habitat is determined to be present based on recommended mitigation measure one above, a qualified biologist shall conduct focused surveys at the trees, bridge(s), culverts and overpasses. Methods should include utilizing night-exit surveys, sound analyzation equipment and visual inspection within open expansion joints and portholes of the structures. Surveys should occur from March 1 to April 15 or August 31 to October 15 prior to construction activities. If the focused survey reveals the presence of roosting bats, then the appropriate exclusionary or avoidance measures will be implemented prior to construction during the period between March 1 to April 15 or August 31 to October 15. Potential avoidance methods may include temporary, exclusionary blocking, one way-doors or filling potential cavities with foam. Methods may also include visual monitoring and staging of work at different ends of the Project to avoid work during critical periods of the bat life cycle or to allow roosting habitat to persist undisturbed throughout the course of construction. Exclusion netting or adhesive roll material shall not be used as exclusion methods. If presence/absence surveys indicate bat occupancy, then construction should be limited to avoid the most sensitive stages of the bat species life cycle (maternity/pupping season).

2-4

Recommended Mitigation Measure 3 – Bat Project Avoidance: If active bat roosts are observed during environmental assessments or during construction, at any time, all Project activities should stop until the qualified biologist develops a bat avoidance plan to be implemented at the Project site. Once the plan is implemented, Project activities may recommence in coordination with the natural resource agencies. The bat avoidance plan should utilize seasonal avoidance, phased construction as well as temporary and permanent bat housing structures developed in coordination with CDFW.

Recommended Mitigation Measure 4 – Permanent Bat Roost Design: CDFW recommends inclusion of permanent bat roost structures into the design of new bridges or overpasses to avoid potentially significant impacts from permanent habitat loss. The structures should be designed in coordination with CDFW and include the appropriate baffle spacing or features to accommodate multiple species of bats as specified in the *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions Manual* (H.T. Harvey, 2019).

COMMENT 5: Swainson's Hawk

Issue: The Project is located within and adjacent to grassland habitat that may be suitable foraging, and suitable nesting habitat for Swainson's hawk, a State threatened species, also protected under Fish and Game Code section 3503, 3503.5 and the federal Migratory Bird Treaty Act (MBTA).

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Recommendation: In order to avoid “take” or adverse impacts to Swainson’s hawk CDFW recommends incorporation of the following into AMM-BIO-6: Swainson’s Hawk Pre-Construction Surveys:

Recommended Mitigation Measure 1 – Swainson’s Hawk Protocol Surveys: CDFW recommends surveys be conducted according to the Swainson’s Hawk Technical Advisory Committee’s (TAC) *Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley* (CDFW, 2010). CDFW strongly recommends that the TAC survey method be strictly followed by starting early in the nesting season (late March to early April) in order to maximize the likelihood of detecting an active nest. Surveys should be conducted within a minimum 5-mile radius of the proposed Project area and should be completed for at least the two survey periods immediately prior to initiating any Project-related construction work. Raptor nests may be very difficult to locate during egg-laying or incubation, or chick brooding periods (late April to early June) if earlier surveys have not been conducted. These full-season surveys may assist with Project planning, development of appropriate avoidance, minimization and mitigation measures, and may help avoid any Project delays.

2-5

Recommended Mitigation Measure 2 – Swainson’s Hawk Nests: CDFW recommends avoiding all Project-related disturbance within a minimum of 0.5 miles of an active Swainson’s hawk nest during the nesting season. Please refer to the CDFW guidance document on Swainson’s hawk (CDFW, 1994, 2010) take avoidance, minimization and mitigation measures. Early consultation with CDFW and other natural resource agencies on Swainson’s hawk take avoidance, minimization and mitigation measures is strongly recommended.

Recommended Mitigation Measure 3 – Swainson’s Hawk Nest Tree Survey: CDFW defines an active nest as a nest that has been utilized once over a 5-year period (CDFW, 2010). CDFW recommends an inventory of potential trees within the Project limits is conducted following the protocols noted in Recommended Mitigation Measure 1 – Swainson’s Hawk Protocol Surveys. The inventory should include maps and tree inventory that notes tree species, diameter at breast height, health status, potential nest use and proposed project related trimming or removal.

CONCLUSION

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California’s fish and wildlife resources. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

Responses to California Department of Fish and Wildlife Comment Memorandum:

Response to Comment 2-1:

Caltrans acknowledges that the current highway hinders the movement and dispersal of small animals due to high traffic volumes and existing K-rail barriers in the median. K-rail barriers are typically considered temporary, but this barrier has been in place for over 10 years and considered the existing condition when evaluating how the Project would impact wildlife movement. All impacts of the Project are assessed in comparison to this existing condition.

This Project proposes to replace the temporary median barrier with permanent concrete Type 60M barrier. These barriers are 42 inches tall (3.3 feet) and represent only a 6-inch increase from the existing barriers. In addition, 800 linear feet of new Midwest Guardrail System (MGS) would be installed as part of this Project. There would also be 200 linear feet of new transition railing, which is considered permeable to small wildlife such as CTS. Caltrans does not consider these changes to the existing condition as substantial when compared to the environmental baseline (existing conditions when the environmental review process started on this Project).

In response to CDFW's proposal of using MGS, Caltrans standards require the use of a concrete barrier when the median width is equal to or less than 36 feet. Installing MGS along this corridor would create an unacceptable safety risk due to the existing highway configuration. To use MGS, the roadway prism would have to be widened, which would result in more permanent impacts to aquatic resources and wildlife habitat than the current proposed Project.

Caltrans has added AMM-BIO-10 which incorporates gaps placed along recurring intervals into the proposed Type 60M barrier. The specific design and interval of these gaps would be discussed with regulatory agencies, including CDFW, during the permitting phase of the Project. Caltrans has also included AMM-BIO-9: Culvert Design, which commits Caltrans to coordinating with CDFW and USFWS to address wildlife crossing opportunities at culverts, including through the upsizing of culverts where needed.

Caltrans biologists utilized its internal wildlife connectivity assessment tool ("WildCAT"), a GIS tool for transportation practitioners, to evaluate the project's potential impacts on wildlife connectivity and identify highway segments where wildlife crossing improvements should be considered. Tiering off this assessment, Caltrans continues to evaluate the opportunity to upsize culverts to enhance wildlife

passage as part of this project, particularly for threatened and endangered species, like the California tiger salamander.

A California tiger salamander survey was conducted in 2022. Cover boards were distributed at the inlets and outlets of culverts within the Project limits, with a focus on the culverts in proximity to suitable breeding habitat for California tiger salamander. The boards were checked for the presence of any California tiger salamanders using them as cover or refuge. The boards were distributed on February 18 and checked an average of twice per week, as well as on the mornings after rain events, through April 2022. The survey end date was based on pools in the BSA drying to better observe metamorphs moving from breeding sites to upland habitats. No California tiger salamanders were observed in the BSA. In addition to the CTS target species presence/absence surveys, road-strike data was considered. Caltrans will continue to coordinate with CDFW on this project to evaluate wildlife crossing opportunities in association with this project.

Additionally, regarding mammalian species, there is a paucity of roadkill observations and carcass data for mule deer (*Odocoileus hemionus*) and other species along this stretch of SR 12. This area is not considered a migratory corridor for mule deer or other wildlife species. Incorporating gaps into the median barrier will offset any new impacts on wildlife passage (targeting mammalian species) and degradation of existing conditions, while upsizing culverts for species occurring along the corridor – if warranted – including the California tiger salamander is anticipated to improve existing conditions.

Response to Comment 2-2:

Please refer to Table 2-2 Impacts to Wetlands and Other Waters on page 2-25 of the IS/MND for the stream crossing analysis. Culverts and streams are also shown on the project elements mapbook starting on page 1-29 of the IS/MND. More details and mapping will be provided with the Notification of LSA during the design and permitting phase. Fish and Wildlife Resource Mitigation, both onsite and offsite, has been incorporated into the Project. Please refer to MM-BIO-1 and MM-BIO-2 for biological resources mitigation measures. Both mitigation measures include commitments to coordinating with resource agencies, such as CDFW, in future Project phases.

Response to Comment 2-3:

A new AMM, AMM-BIO-11: Fish Passage Assessment, has been added in the FED in response to this comment from CDFW. This AMM states that first pass and, if necessary, second pass assessments would be conducted in the Design phase of

this Project. Caltrans would submit the assessment results to CDFW and add it to the CALFISH database. If any fish passage barrier is identified during these assessments, remediation would be designed in consultation with CDFW. The Project would comply with Fish and Game Code section 5901 and would not install or maintain any device or structure that impedes the passing of fish up and down stream.

Response to Comment 2-4:

There are no CNDDDB occurrences for Townsend's big-eared bats (*Corynorhinus townsendii*) within 5 miles of the Biological Study Area. However, the Union Creek and Denverton Creek bridges may be suitable for bat roosting. Changes have been made in the Final IS/MND to AMM-BIO-8: Pre-Construction Bat Surveys and Avoidance Measures in response to this comment from CDFW. Please note that Caltrans is not preparing an Environmental Impact Report (EIR) for this Project because with mitigation measures incorporated, Caltrans does not anticipate this Project to have any significant impact on resources under CEQA. Please refer to AMM-BIO-8 for more details on bat visual and focused surveys, habitat assessment and exclusionary plan. Impacts to Townsend's big-eared bats would be less than significant, and implementation of PF-BIO-3, PF-BIO-4, PF-BIO-7, PF-BIO-9, PF-BIO-11, PF-BIO-13, PF-BIO-14, AMM-BIO-1 through AMM-BIO-3, and AMM-BIO-8 would further minimize potential impacts to Townsend's big-eared bats.

Response to Comment 2-5:

As part of the assessment of the Project's impacts on biological resources, impacts to Swainson's hawk were assessed. Caltrans determined that the Project would have a less than significant impact on the species and incorporated AMM-BIO-6 to further lessen the Project's potential impacts. AMM-BIO-6 specifies that if construction activities occur during the Swainson's hawk nesting season (March 15 to September 15), Caltrans would conduct focused Swainson's hawk surveys during the spring prior to construction, using guidelines such as set forth in the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000). If an active nest is discovered within 0.5 mile of the Project area, Caltrans would immediately stop any work that has potential to result in take of Swainson's hawk and coordinate with CDFW for further guidance.

Caltrans has determined that no further measures are needed to lessen impacts to Swainson's hawk but would coordinate with CDFW if this determination changes based on new species information or new Project information.

Response to Comment from Member of the Public:

From: Kate Spencer <spencer_management@outlook.com>

Sent: Wednesday, October 19, 2022 4:04 PM

To: Lammert, Maxwell@DOT <Maxwell.Lammert@dot.ca.gov>

Subject: Project to resurface SR 12 between Rio Vista and Suisun

Greetings!

I am a native San Franciscan who moved to Trilogy at Rio Vista nine years ago. I've lived in many different California cities in my lifetime but never before have I lived in a rural environment. At 78, I will always be a 'city girl.' In my 62 years of CA driving, I have not encountered the cluster mess that is Highway 12 between Rio Vista and Suisun. My friends and neighbors are pondering the Caltrans announcement of the very long overdue resurfacing of this stretch of roadway. Obviously missing are ETA start and completion dates. We are wondering if we can expect to see this resurfacing in our lifetimes?? Thank you.

Respectfully submitted,
Kate Spencer, Rio Vista

Response to comment:

The proposed Project is expected to go into construction at the beginning of 2025, with construction estimated for approximately 2 years. There is another project near the Project—the SR 12 Roadway Resurfacing, Restoration, and Rehabilitation Project (Rio Vista 3R)—that is closer to construction. Rio Vista 3R is going to be built in three segments, with the first segment beginning construction in Summer 2023, and the following segments planned to begin construction within the next 2 years. The 3R Project would rehabilitate the highway on the portion of SR 12 that is closer to Rio Vista and will improve the section of roadway that runs through downtown Rio Vista.

Appendix G Public Participation Summary

Caltrans published a public notice of the Draft IS/MND's availability twice in both the Rio Vista Beacon and Daily Republic newspapers in the months of October and November 2022. Caltrans also sent out letters to agencies and public officials included in the distribution list to notify them of the document's availability and public circulation period.

A 31-day public circulation period of the environmental document occurred between October 7 and November 7, 2022. An electronic copy of the Draft IS/MND was made available on Caltrans' document website (<https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs>). In addition, hard copies of the Draft IS/MND were made available at the Suisun City Library and the Fairfield Civic Center Library.

During this period, Caltrans received two agency comment letters from the California Department of Fish and Wildlife, and the San Francisco Bay Conservation and Development Commission, and an email from a member of the public. The responses to these comments have been included in Appendix F: Public Comments and Comment Responses. No public meeting was held for this Project.