San Luis Canal (California Aqueduct Pools 20 and 21) Liner Raise Project

Initial Study/Mitigated Negative Declaration

October 2025

SAN LUIS CANAL (CALIFORNIA AQUEDUCT POOLS 20 AND 21) LINER RAISE PROJECT

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October 2025

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1 INTRODUCTION

As lead agency under the California Environmental Quality Act (CEQA), the California Department of Water Resources (DWR) has prepared this Initial Study (IS) and Notice of Intent to Adopt a Mitigated Negative Declaration (MND) to address the environmental consequences of the proposed San Luis Canal (California Aqueduct Pools 20 and 21) Liner Raise Project (proposed project). The proposed project is located at Pools 20 and 21 of the California Aqueduct (Aqueduct) in Fresno and Kings Counties. The proposed project involves modification to the Aqueduct's concrete liner, which would be raised over a total length of approximately 18 miles on both sides of Pools 20 and 21. The liner raise would require rerouting up to five road drainage pipes and removing and replacing four road drains at a higher elevation. The proposed project is described in more detail in Chapter 2, "Project Description."

1.1 Document Organization

Chapter 1: Introduction. This chapter provides an introduction to the proposed project, organization of this document, purpose of the IS/MND, and summary of findings.

Chapter 2: Project Description. This chapter describes the proposed project, including project location, project objectives, activities to be conducted under the proposed project, and potential permits and approvals that may be required prior to implementation of the proposed project.

Chapter 3: Initial Study Environmental Checklist. This chapter presents an analysis of potential environmental impacts that may result from implementation of the proposed project for the resource topics included in the CEQA Environmental Checklist (CEQA Guidelines Appendix G). For each resource topic question, the following are provided: (1) environmental setting, (2) discussion of the potential effects of implementing the proposed project, (3) finding of significance, and (4) any mitigation measures to be recommended for incorporation into the proposed project to reduce any identified significant impacts to a less-than-significant level. The references used in preparation of this IS/MND are provided for each resource area.

Following completion of the required 30-day public comment period and before approving the proposed project, DWR will consider this IS/MND together with any comments provided during the public comment period and will adopt the IS/MND if, based on the whole of the record, (1) there is no substantial evidence that the proposed project will have a significant effect on the environment, and (2) it represents DWR's independent judgement and analysis. DWR will also prepare and adopt a Mitigation Reporting and Monitoring Program as part of the approval process as required under Public Resources Code Section 21081.6(c) for mitigation measures identified in the IS/MND.

1.2 Purpose of the IS/MND

This IS/MND was prepared in accordance with Public Resources Code Section 21000 et seq. and California Code of Regulations Title 14, Section 15000 et seq. (CEQA Guidelines). The purposes of this IS/MND are to (1) determine whether project implementation would result in potentially significant or significant effects on the environment, and (2) incorporate mitigation measures into the proposed project design, as necessary, to eliminate the potentially significant or significant project effects or reduce them to a less-than-significant level.

1.3 Summary of Findings

Based on the analysis included in Chapter 3, implementation of the proposed project would result in:

- No impacts on the following resource topics:
  - Agriculture and Forestry Resources
  - Land Use and Planning
  - Mineral Resources
  - Population and Housing
- Less-than-significant impacts on the following resource topics:
  - Aesthetics
  - Air Quality
  - Energy
  - Greenhouse Gas Emissions
  - Hazards and Hazardous Materials
  - Hydrology and Water Quality
  - Noise
  - Public Services
  - Recreation
  - Transportation
  - Utilities and Service Systems
- Less-than-significant impacts following incorporation of mitigation measures into the proposed project on the following resource topics:
  - Biological Resources
  - Cultural Resources
  - Geology and Soils
  - Tribal Cultural Resources
  - Wildfire
  - Mandatory Findings of Significance

2 PROJECT DESCRIPTION

2.1 Background and Need for Project

2.1.1 Background

The State Water Project (SWP), which is owned, operated, and managed by DWR, is a complex system of reservoirs, dams, power plants, pumping plants, pipelines, and aqueducts that conveys water from natural stream channels to the Sacramento-San Joaquin Delta and pumps water into the 444-mile-long Aqueduct, supplying water agencies and districts in portions of the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California. Water supplies conveyed through the Dos Amigos Pumping Plant and on through the San Luis Canal and Aqueduct serve over 1.5 million acres of farmland and approximately 24 million people (California Department of Water Resources 2025). DWR contracts with 29 Public Water Agencies throughout California for the delivery of SWP water. The Public Water Agencies receive water service from the SWP in exchange for paying all costs that are associated with the storage and transportation of the water and with planning, constructing, operating, and maintaining the SWP facilities.

Pools 20 and 21 are segments of the Aqueduct located within the SWP's San Luis Field Division (SLFD) and part of the joint-use conveyance portion of the Aqueduct is known as the San Luis Canal (SLC). The SLC is a federal–State joint-use facility. It was designed and is owned by the U.S. Bureau of Reclamation (Reclamation) but is operated and maintained by the SWP's SLFD. In addition to conveying SWP supplies, the joint-use SLC also delivers Central Valley Project (CVP) water to federal service areas along its route. Reclamation relies on the available hydraulic conveyance capacity of the Aqueduct to convey water supplies for delivery to CVP Cross Valley Canal contractors and to wildlife refuges. The section of the SLC that this project encompasses is approximately 18 miles from the downstream side of Check 19 to the upstream side of Check 21.

There are no turnouts in the SLC for SWP water delivery, but turnouts are provided for the federal service area to deliver Central Valley Project irrigation water for approximately 1 million acres of prime farmland in the San Joaquin Valley. The Aqueduct's design capacity in the SLC ranges from 13,100 cubic feet per second (cfs) [6,000 cfs federal and 7,100 cfs State] leaving O'Neill Forebay to 8,350 cfs [1,300 cfs federal and 7,050 cfs State] at Kettleman City.

2.1.2 Need for the Project

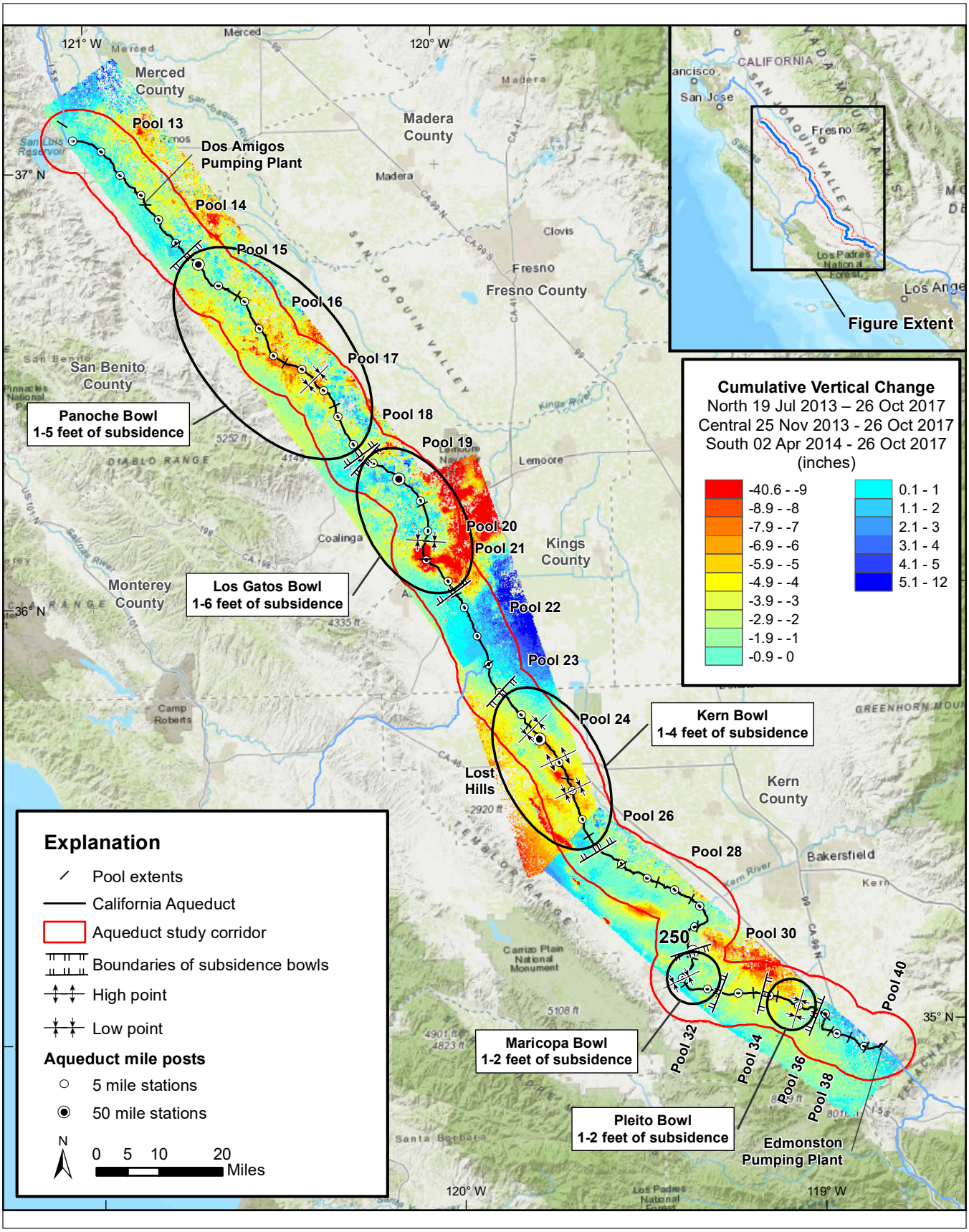
The concrete-lined Aqueduct was constructed as a series of interconnected pools that are operated in coordination to convey water primarily by gravity from one pool to the next through check structures and pumping plants. The Aqueduct traverses portions of the San Joaquin Valley that have experienced *subsidence*, which is defined as a local or regional drop in ground surface elevation.

Land subsidence in the San Joaquin Valley was first noted near the Delano area in 1935. Since that time, the San Joaquin Valley has undergone several periods of regional aquifer compaction as a result of groundwater extraction, which has been largely for agricultural uses. In the late 1960s and early 1970s, surface water was imported via canals, and the Aqueduct began importing water to the subsiding areas, reducing groundwater pumping and reducing new land subsidence in the western and southern portions of the San Joaquin Valley Groundwater Basin, a subregion of the Central Valley Aquifer System that underlies the project site (Ireland 1986). By 1981, subsidence in the San Joaquin Valley reached nearly 30 feet, the greatest subsidence recorded in the United States (Bertoldi et al. 1991). Reduced surface-water availability during 1976 and 1977, 1986 through 1992, 2007 through 2009, and 2012 through 2015 caused groundwater-pumping increases in the San Joaquin Valley, declines in water levels to near or beyond historic lows, and renewed aquifer compaction.

The resulting land subsidence has reduced the freeboard and flow capacity of the Aqueduct and other canals that transport floodwater and deliver irrigation water (U.S. Geological Survey 2018). *Freeboard* refers to the vertical distance between the design water surface and the top of the concrete canal lining. In the SLC, the Aqueduct was designed with a minimum of 3 feet of freeboard on top of 3 feet of lined and 3 feet of unlined embankment above the water surface elevation. The decrease in lined freeboard has decreased or eliminated the potential to store additional water in some pools. The Aqueduct freeboard is used as a reservoir, storing water during low-cost high-pumping periods (nighttime) and drafting water for downstream delivery during high-cost low-pumping periods (daytime). The reduced storage forces more pumping during more expensive periods to meet direct downstream demand (California Department of Water Resources 2017).

Since 1970, due to continued land subsidence, DWR has implemented numerous liner raises and other rehabilitation projects to maintain adequate freeboard in the Aqueduct (California Department of Water Resources 2017). However, due to ongoing subsidence, the liner needed to be raised in the 1980s and again in the 1990s to maintain adequate freeboard and delivery capacity. In June 2017, DWR prepared the California Aqueduct Subsidence Study, which summarized the magnitude, location, and effects of pre-Aqueduct subsidence, historic Aqueduct subsidence, and current subsidence on the Aqueduct. The study identified five significant “bowls” of subsidence along the alignment of the Aqueduct (**Figure 2-1**). The largest bowl, Panoche, is located in Pool 15 through Pool 18 in the SLC. A second subsidence bowl, Los Gatos, is in Pool 19 through Pool 21, where the proposed project is located. Kern, a third bowl, is from Pool 23 through Pool 25.

The 2017 study reported that episodes of drought, such as the drought from 2012 to 2015, has exacerbated the current subsidence of the Aqueduct and reduced available freeboard to 1 foot or less, thereby further reducing the Aqueduct’s storage and conveyance capacity. While subsidence has reduced the amount of freeboard and flow capacity at specific locations, contracted deliveries have not yet been curtailed. To maintain delivery capacity, pumping has increased during high-cost daytime periods. The reduced freeboard has also become a safety and maintenance issue as the water surface reaches the limits of the concrete liner and encroaches on the earthen embankments.



SOURCE: DWR, 2019

CASP Enviro Support

Figure 2-1
California Aqueduct Subsidence "Bowls" in the San Joaquin Valley

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To maintain the Aqueduct's storage and conveyance capacity and maintain deliveries, those portions of the Aqueduct that have experienced subsidence require retrofit to extend the concrete liner.

2.2 Project Objectives

The objective of the proposed project is to maintain functionality in Pools 20 and 21 to enable DWR to avoid future disruptions of water deliveries to the Public Water Agencies, thereby maintaining operational flexibility and improving safety and reliability.

2.3 Project Location

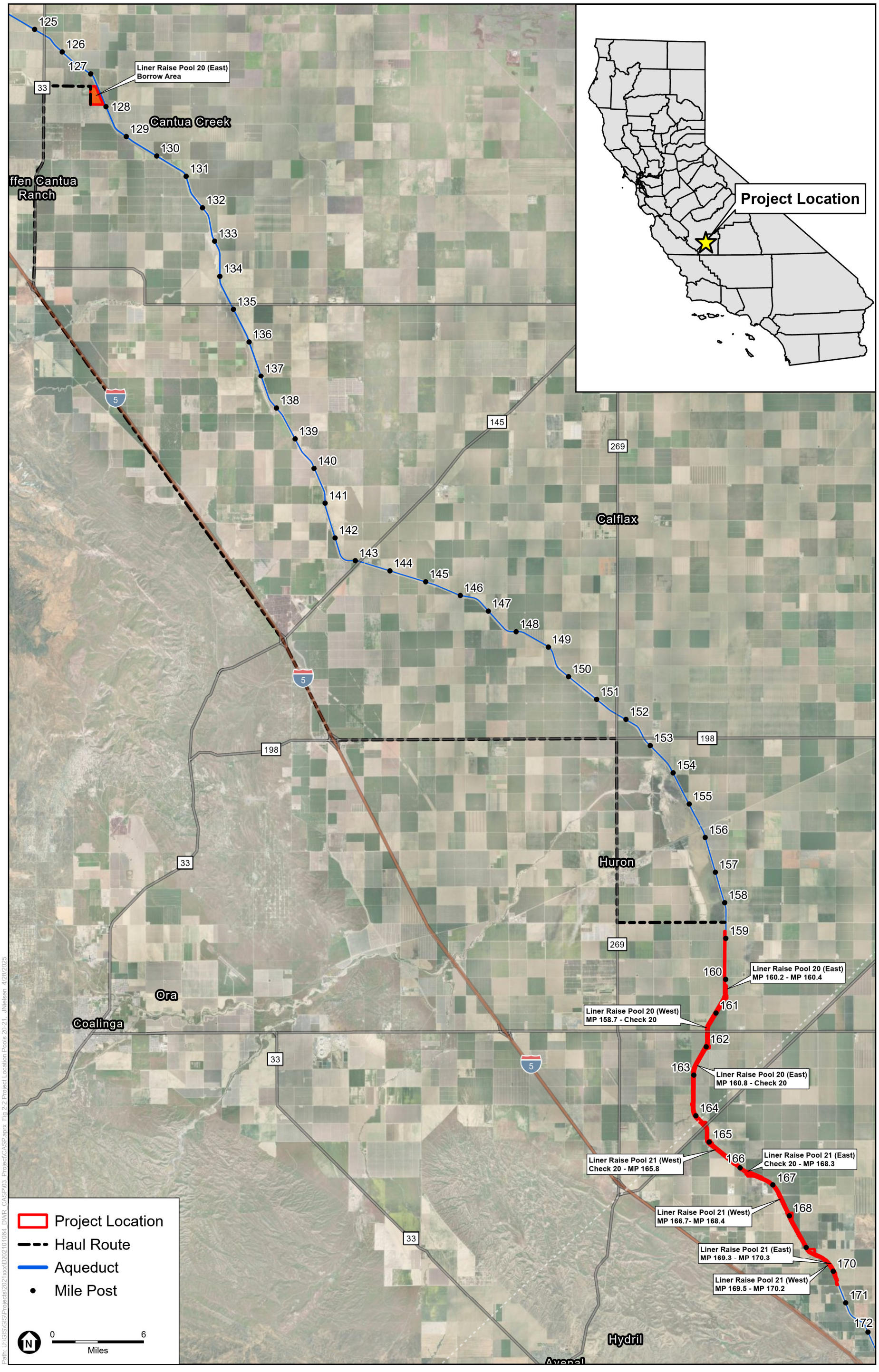
The proposed project would raise portions of the concrete liner of Pools 20 and 21 in Fresno and Kings Counties, California. The area of the liner raises in Pools 20 and 21 is located along the Aqueduct between Aqueduct Milepost (MP) 158.7 to MP 170.3. The northernmost pool, Pool 20 at MP 158.7, is approximately 2.8 miles southeast of the town of Huron. The southernmost pool, Pool 21 at MP 170.3, is approximately 12.6 miles southeast of Huron (**Figure 2-1** through **Figure 2-6**). The borrow area for the proposed project is located north of Pool 17 (Figure 2-2). The project site includes the two Aqueduct liner raise sites, borrow and staging areas, and road drain replacement sites.

2.4 Description of the Proposed Project

2.4.1 Concrete Liner Raise

The Aqueduct's concrete liner would be raised over a total length of approximately 18 miles on both sides of Pools 20 and 21, including approximately 5 miles with a liner raise up to approximately 1.5 feet, approximately 3.5 miles with a liner raise up to 2.5 feet, and approximately 9.5 miles with a liner raise up to 3 feet. Refer to Figure 2-3 illustrating a typical cross-section of an Aqueduct liner raise footprint and Figure 2-4 through Figure 2-6 for the specific locations of the liner raise.

To accommodate the placement of the additional concrete, existing guardrails, road delineators, hand railings, and other features would be removed and salvaged for reuse on-site, if possible. All liner raise construction activities would be completed above the water level at the waterside embankment; no in-water work would occur.



Path: U:\GIS\GIS\Projects\2021xxx\D202101064 DWR CASP\03 Project\CASP aprx Fig 2-2 Project Location Pools 20-21 JNielsen 4/28/2025

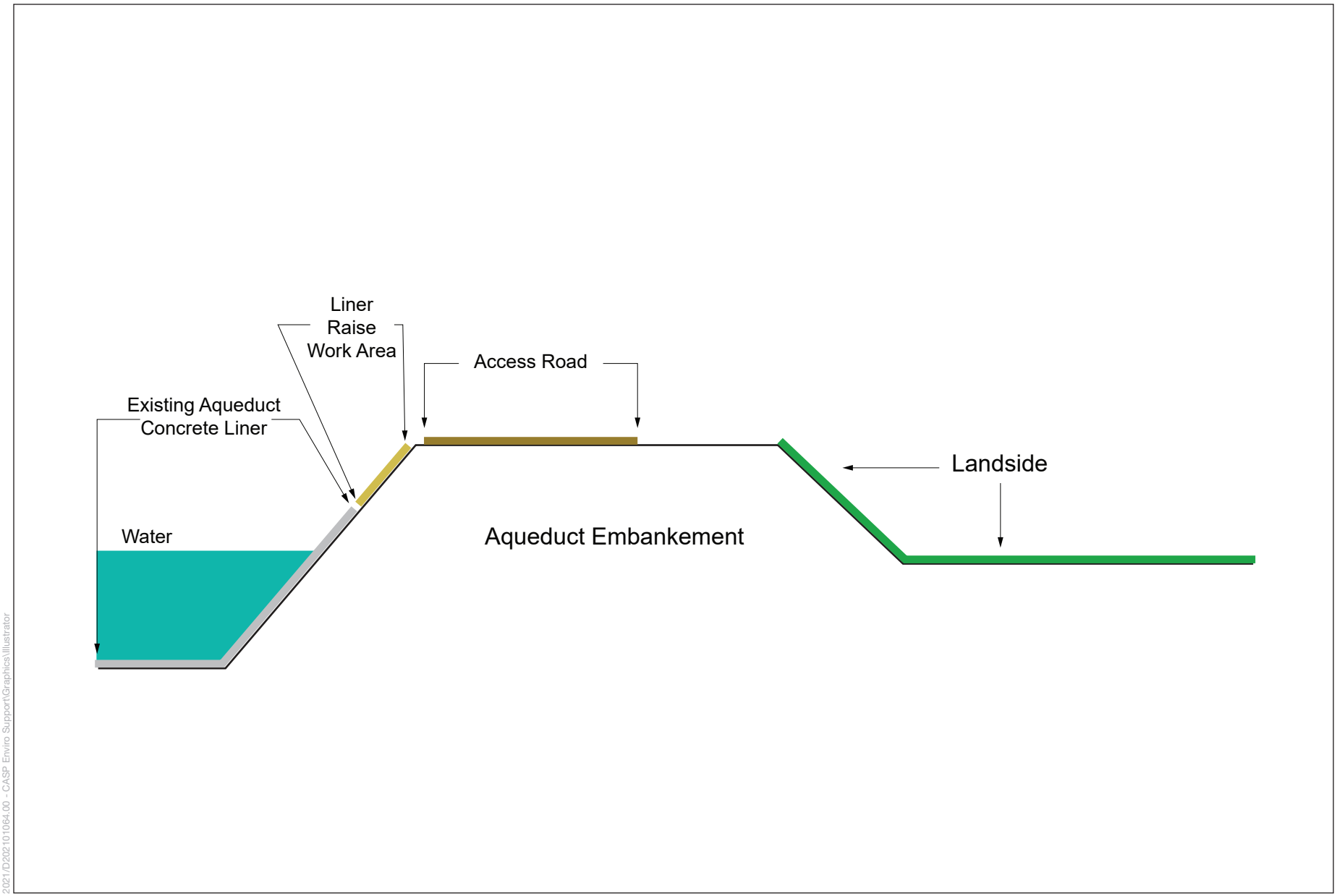
SOURCE: ESRI; DWR, 2024.

CASP Enviro Support

Figure 2-2
Project Location - Pools 20/21

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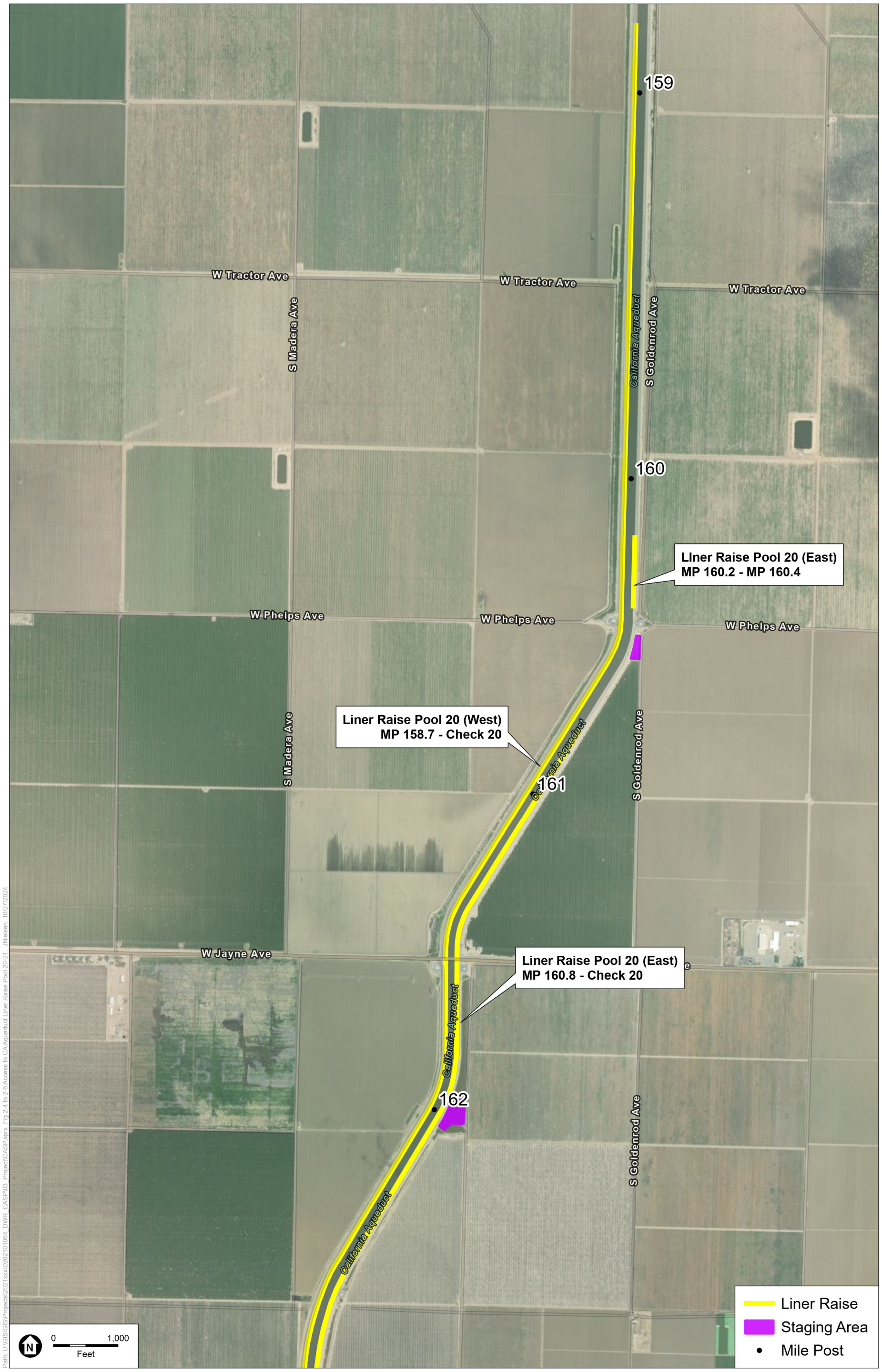
SOURCE: ESA, 2024

CASP Enviro Support

Figure 2-3
Liner Raise Typical Cross Section

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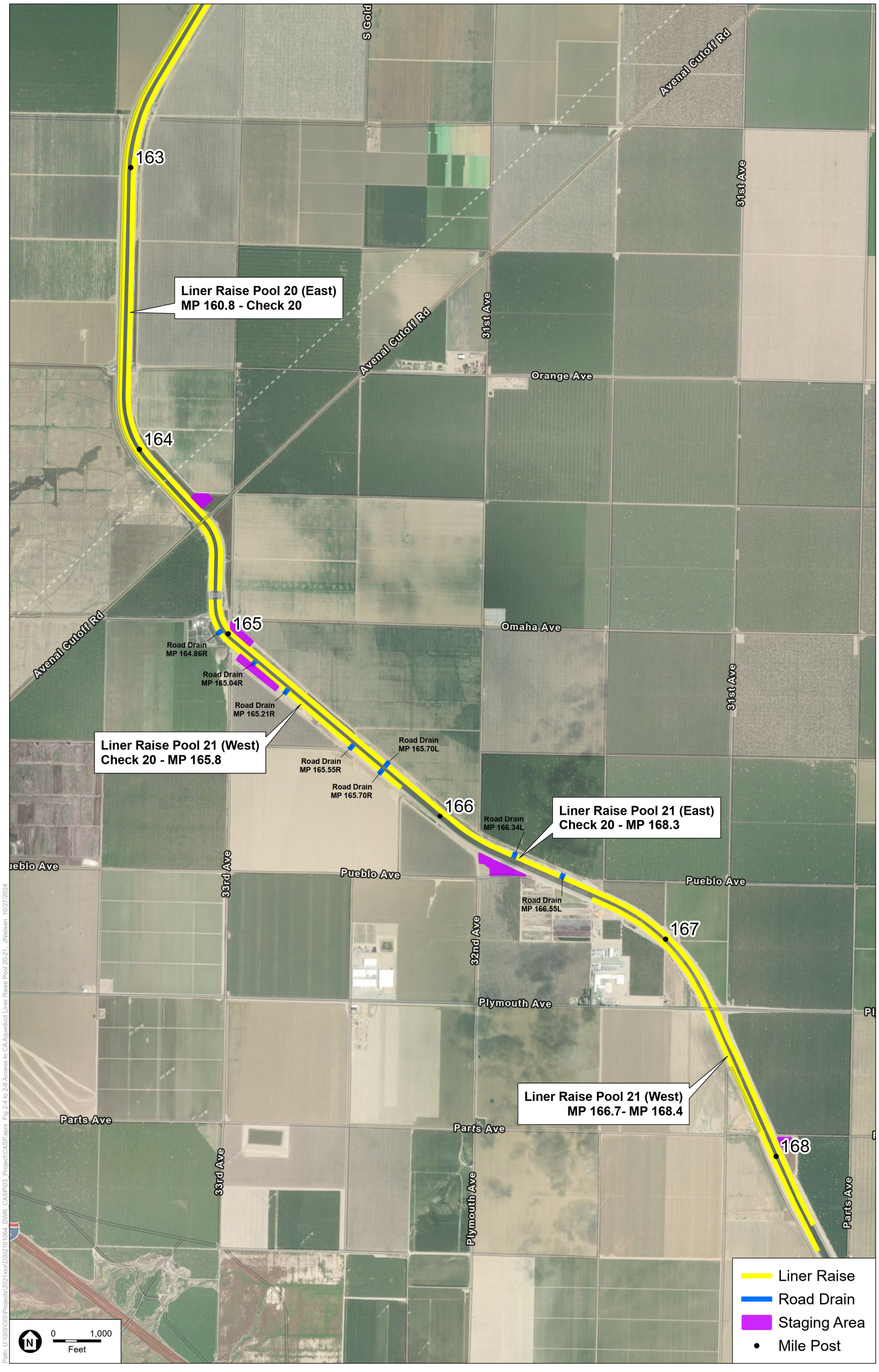


SOURCE: ESRI, DWR, 2024.

CASP Enviro Support

Figure 2-4
Access to CA Aqueduct MP 158.7 – 162.7 Liner Raise Pool 20

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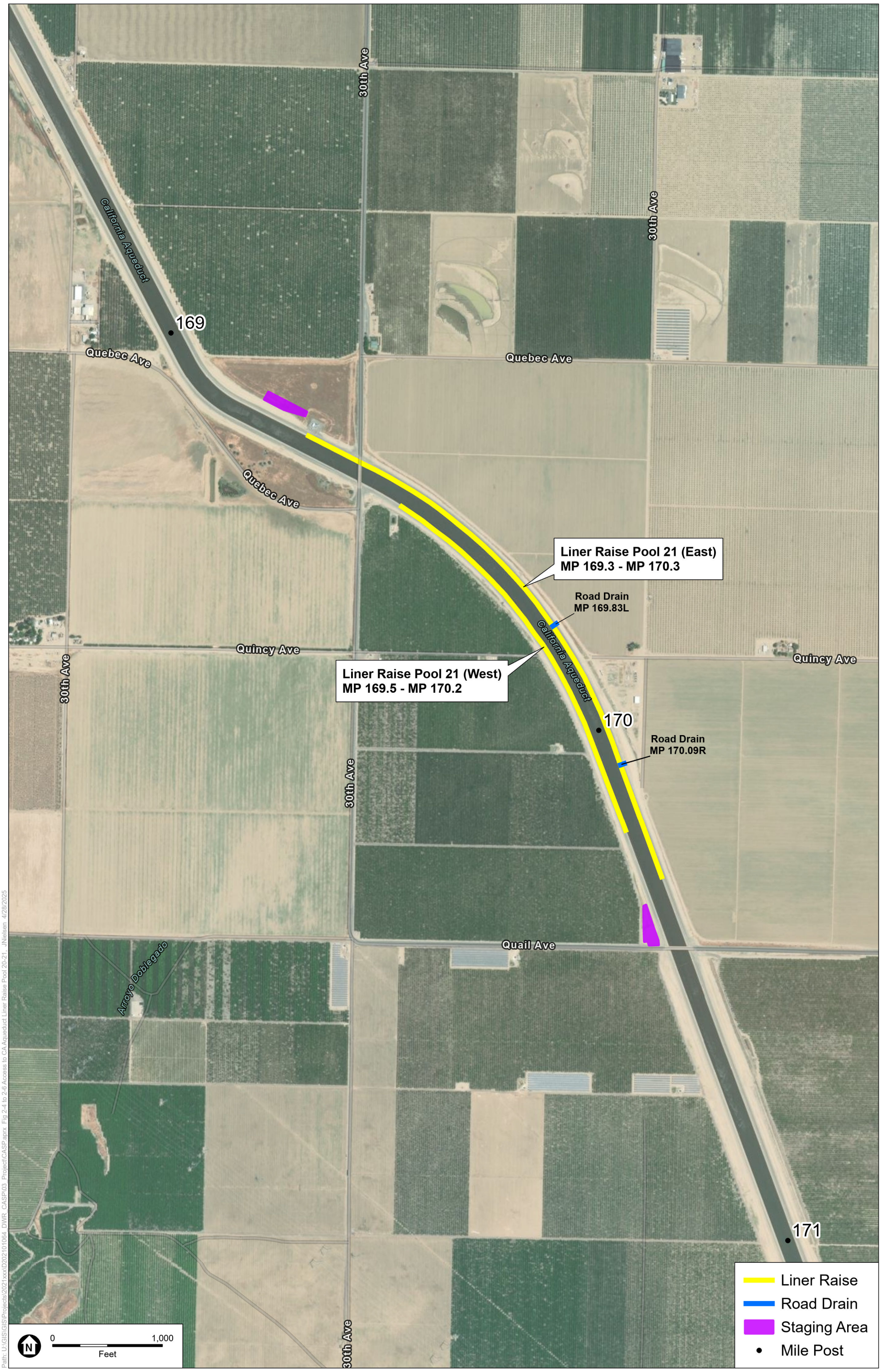


SOURCE: ESRI, DWR, 2024.

CASP Enviro Support

Figure 2-5
Access to CA Aqueduct MP 162.8 – 168.8 Liner Raise Pool 20-21

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SOURCE: ESRI, DWR, 2024.

CASP Enviro Support

Figure 2-6
Access to CA Aqueduct MP 169.6 – 170.3 Liner Raise Pool 21

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Anticipated ground-disturbing activities would include:

- Vegetation clearing and grubbing of the staging and access areas to a depth of approximately 0.25 feet.
- Excavation of the borrow area up to a depth of approximately 5 feet for use as fill in the canal embankment. This would include vegetation clearing and grubbing of the borrow area prior to excavation.
- Excavation up to a depth of approximately 2.5 feet, placement of fill, and re-compaction at locations where the new liner raise would be installed. This work would take place between the top of the existing liner and the edge of the access road (waterside), within a width of approximately 4 to 6 feet.
- Excavation and backfill would be conducted up to a depth of approximately 5 feet to remove existing road drainage pipes within the project footprint on the east side of the Aqueduct.

The borrow area along the west side of the Aqueduct north of Pool 17 is shown in **Figure 2-2**. All of the material needed for the liner raises would come from this borrow location and would be transported to Pools 20 and 21, which are located to the south of the proposed borrow area. The proposed borrow area consists of soils excavated during construction of the Aqueduct and serves as spoil stockpiles. These stockpiles are approximately 12 to 15 feet higher than the original surface elevation.

Up to five existing road drainage pipes that drain stormwater that collects between the flood/waste berms and the access road back into the Aqueduct would be rerouted to carry stormwater to the opposite side of the berms (located from the Aqueduct); this includes road drains at MP 165.70, 166.34, 166.55, 169.83, and 170.09 as shown in **Figure 2-5** and Figure 2-6. Four existing road drains would be removed and replaced at a higher elevation, including at MP 164.86, 165.04, 165.21, and 165.55 as shown in Figure 2-5 and Figure 2-6. No utilities would be relocated for this project.

The waterside embankment would be prepared by excavating approximately 2.5 feet behind the existing liner. The void would then be backfilled with the excavated material combined with borrow material to achieve a uniform and compact embankment slope at a maximum ratio of 2H:1V.

Polyvinyl chloride waterstop material would be installed at expansion and contraction joints, and strip waterstop material would be installed at longitudinal contraction joints prior to concrete placement. Contraction joints, which are small grooves cut into the concrete while it is drying to force the concrete to crack in those locations when it shrinks, would be hand tooled in new liner panels. Concrete curing compound would be applied on the fresh concrete surface using a spray nozzle, per manufacturer recommendations, and allowed to cure for approximately two days. After curing, joints would be cleaned by sandblasting to remove all mortar, scale, soil, foreign materials, and curing compound. Sealant primer and polyurethane-type joint sealant would be hand placed in all joints. Joint sealant would be approximately 0.25 to 0.5 inches thick, applied to ensure full contact with the joint walls and to remove air entrapment.

2.4.2 Schedule

Construction of the proposed project is anticipated to begin in 2027 and conclude within nine months. Construction activities would generally be limited to the hours of 6 a.m. to 6 p.m., Monday through Friday, to the greatest extent possible. Work on the liner raises in Pools 20 and 21 would run concurrently. Construction activities would last approximately 8 weeks per linear mile. The work would be completed in a single phase and would consist of the following activities:

- Mobilization/Stormwater Pollution Prevention Plan (SWPPP) installation.
- Staging and borrow area preparations.
- Earthwork (embankment preparation).
- Concrete liner.
- Drainage work.
- Miscellaneous installations (e.g., removal of existing features; placing concrete at bridge abutments, turnout modifications, in-kind replacement of fencing and guardrails).
- Closeout/punch list.

2.4.3 Construction Considerations

During all work, the Aqueduct flow and water levels would be either operated normally or temporarily reduced to accommodate construction. All work would be completed above water and operational flexibility within the system would allow water deliveries to be made without disruption.

Specific to the concrete liner raise, which is the activity that would require the most construction workers and vehicle trips per day, up to 60 construction workers are anticipated to be required for the concreate liner raise and approximately eight truck trips per day for 29 weeks would be needed to deliver concrete to the site. Anticipated labor force and truck trips for all project activities are listed below in **Table 2-1 and Table 2-2**, respectively.

The north (upstream) access road to enter/exit the project site would be Gale Avenue at approximately MP 158.5. The contractor would only be allowed to access the right side of Gale Avenue. Jayne Avenue would be used to access the left side areas. The south (downstream) access road to enter/exit the site would be Quail Avenue at approximately MP 170.4. Access to the construction areas would occur on existing roadways and service roads, including access roads on top of both sides of the Aqueduct embankments as indicated in Figure 2-4 through Figure 2-6, and would stay within DWR's right-of-way. No new roads would be required to access the construction areas; however, toe and embankment access roads that have not been maintained or have been encroached on may need work to make them usable.

Table 2-1 Anticipated Labor Force Required for Construction

Activity	Duration (weeks)	Labor Force (worker/day)	Vehicle Trips per Day	Original Location
Mobilization/Stormwater Pollution Prevention Plan	3	10	5	Fresno
Borrow/Fence Preparation	3	10	5	Fresno
Earthwork (embankment)	22	30	16	Fresno
Concrete Liner	29	60	30	Fresno
Drainage Work	24	30	15	Fresno
Miscellaneous Installations	5	5	3	Fresno
Closeout/Punch List	2	10	5	Fresno

Source: Data compiled by the California Department of Water Resources in 2024

Table 2-2 Anticipated Truck Trips Required for Construction

Activity	Duration (weeks)	Truck Trips per day*	Approximate Miles per Day per Trip	Original Location
Mobilization/Stormwater Pollution Prevention Plan	3	2	100	Fresno
Borrow/Fence Preparation	3	0	–	–
Earthwork (embankment)	22	2	50	Pool 17
Concrete Liner	29	8	42	Lemoore
Drainage Work	8	1	100	Fresno
Miscellaneous Installations	5	3	70	Coalinga
Closeout/Punch List	2	1	100	Fresno

Source: Data compiled by the California Department of Water Resources in 2024

Note: *Trucks per day includes off-site material deliveries (on-site hauling captured in Equipment section below).

The liner raise would occur on the waterside of the Aqueduct embankments. Staging of equipment and temporary stockpiling of materials would occur adjacent to the Aqueduct along the access road and road aprons (Figure 2-4 through Figure 2-6). Upon completion of the proposed project, all construction areas, including access roads, would be regraded to match pre-project conditions. The borrow area would be graded to drain toward the existing flood berms to allow pumping of ponded water during floods if necessary. Any remaining stockpiles or materials would be removed from the site and would be disposed of in an approved location according to contractor specifications.

Approximately 9,000 cubic yards of concrete would be used for the liner raise, sourced from a local supplier. Anticipated construction materials and equipment are listed in **Table 2-3 and Table 2-4**, respectively.

Table 2-3 Anticipated Materials Required for Construction

Construction Materials	Approximate Volume
Concrete	9,000 cubic yards
Soil (On-site Borrow)	18,500 cubic yards

Source: Data compiled by the California Department of Water Resources in 2024

Table 2-4 Anticipated Equipment Required for Construction

Construction Equipment	Maximum Number per Activity	Duration (hours) per Day
CAT Excavator 311C	4	6
Pickup Truck, F250	12	3
CAT Gradall Forklift	4	4
CAT 259D Skid Steer Loader	4	4
Dump Truck, Transfer	3	8
Dumb Truck, Haul	4	8
Concrete Mixer Truck	4	8
Mini Roller Compactor	4	6

Source: Data compiled by the California Department of Water Resources in 2024

2.4.4 Operation and Maintenance

Short-term maintenance activities (e.g., mowing, vegetation management) in the area of construction would be temporarily postponed during construction. Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules.

2.5 Project Approvals

Table 2-5 presents a preliminary list of the agencies that, in addition to DWR, would use this IS/MND in their consideration during permit submittals and other approvals that may apply to the proposed project. This IS/MND is intended to provide these agencies with information to support their decision-making processes.

Table 2-5 Anticipated Regulatory Permits and Approvals

Agency	Permits and Authorizations Potentially Required
Bureau of Reclamation	National Environmental Policy Act (NEPA) Compliance
California Office of Historic Preservation	National Historic Preservation Act Section 106 Consultation
California Department of Fish and Wildlife	Incidental Take Permit
Regional Water Quality Control Board	Construction General Permit, National Pollutant Discharge Elimination System (NPDES) Permit SWPPP

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3 INITIAL STUDY AND ENVIRONMENTAL CHECKLIST

1. **Project Title:** San Luis Canal (California Aqueduct Pools 20 and 21) Liner Raise Project
2. **Lead Agency Name and Address:** California Department of Water Resources 715 P Street, Sacramento, CA, 95814
3. **Contact Person and Phone Number:** Marea Bell, (916) 882-2945
4. **Project Location:** Pools 20 and 21 of the California Aqueduct, Fresno and Kings Counties
5. **Project Sponsor's Name and Address:** Same as Lead Agency
6. **General Plan Designation(s):** Agriculture
7. **Zoning:** Exclusive Agriculture (AE-20 and AE-40)
8. **Description of Project** (describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation; attach additional sheets if necessary)**:**

The proposed project would raise portions of the Aqueduct's concrete liner on both sides of Pools 20 and 21 over a total length of approximately 18 miles. No new roads would be required to access the construction areas. Liner raise construction would occur on the waterside of the Aqueduct embankments and all work would be completed above water. The borrow source for the proposed project is located north of Pool 17. All of the material needed for the liner raises would come from this borrow location and would be transported to Pools 20 and 21, located to the south of the proposed borrow area. Staging of equipment and temporary stockpiling of materials would occur adjacent to the Aqueduct along the access roads and road aprons.

9. **Surrounding Land Uses and Setting** (briefly describe the project's surroundings)**:**

The surrounding vicinity is largely rural and undeveloped except for agricultural uses.

10. **Other public agencies whose approval is required** (e.g., permits, financing approval, or participation agreement)**:**

- U.S. Bureau of Reclamation - NEPA Compliance
- California Office of Historic Preservation - National Historic Preservation Act Section 106 Consultation
- California Department of Fish and Wildlife - Incidental Take Permit
- Regional Water Quality Control Board – Construction General Permit; NPDES Permit SWPPP

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

See Section 3.2.18, “Tribal Cultural Resources,” for details on Tribal consultation.

Docusign Envelope ID: 23C2E1D0-C035-4B31-BD21-DDBFC5E19D9A

3.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklists on the following pages:

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

Determination (to be completed by the Lead Agency):

On the basis of this initial study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	10/30/2025
	Date
Signature	
	Date

3.2 Environmental Checklist

3.2.1 Aesthetics

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
I. AESTHETICS — Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Environmental Setting

Pools 20 and 21 of the Aqueduct are located in Fresno and Kings Counties. The proposed project site is characterized by the concrete-lined Aqueduct canal, the Aqueduct embankments, compacted soils that serve as access roads, road aprons, and vacant lands within the DWR right-of-way adjacent to the Aqueduct. The area of the proposed project site is largely uninhabited and surrounded by agricultural crop fields. Agricultural uses near the proposed project site include limited associated infrastructure, such as barns, warehouses, equipment, and storage areas. The primary roadways providing access to the proposed project site include Interstate 5 (I-5) located approximately 2.8 miles west of the proposed project and State Route 269 (SR 269) located approximately 2.4 miles west of the proposed project.

A highway is officially designated as a State scenic highway when a local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives notification from Caltrans that the highway has been designated as an official State scenic highway. While portions of I-5 are designated as a State scenic highway by Caltrans, they are not near the proposed project site. The nearest highways

eligible for State Scenic Highway designation are a portion of SR 33 and SR 198 located approximately 12 miles west of the proposed project site and a portion of SR 41 located approximately 4.2 miles south of the proposed project site (California Department of Transportation 2024).

The topography of the proposed project site and surrounding vicinity is relatively flat. The Coastal Foothills, containing gentle rolling hills with scattered oak trees, extend westward past I-5 (County of Fresno 2024). The Kettleman Hills and Coast Ranges extend west past I-5 (County of Kings 2010).

Discussion

Issue I.a

The construction site would be accessed using existing roadways and service roads, including along both sides of the Aqueduct embankments. All liner raise construction would occur on the waterside of the Aqueduct embankments. Staging of equipment and temporary stockpiling of materials would occur adjacent to the Aqueduct along the access roads and road aprons, and the road drains and associated pipes are located beneath access roads and within the Aqueduct embankment (Figure 2-4 through Figure 2-6). The borrow area for construction activities is located on vacant lands adjacent to the Aqueduct within the DWR right-of-way (Figure 2-3).

Short-term maintenance activities (e.g., mowing, vegetation management) in the area of construction would be temporarily postponed during construction. Once construction is complete, there would be no additional operation and maintenance activities as part of the project, and normal operations and maintenance would resume, similar to existing conditions. Therefore, due to the limited presence of construction equipment and the short-term temporary nature of project activities, project implementation would not significantly impact scenic vistas or resources. Impacts on scenic vistas would be considered **less than significant**.

Issue I.b

Scenic vistas are defined as expansive views of distant landforms and aesthetic features from public vantage points, including areas designated as official scenic vistas along roadway corridors or otherwise designated by local jurisdictions. The proposed project site is not located in the vicinity of an officially designated scenic vista as determined by Fresno or Kings Counties (County of Fresno 2024; County of Kings 2010). However, the proposed project site is adjacent to agricultural lands, which are considered scenic to both Kings and Fresno Counties. Further, natural landforms such as hillsides and mountains may be seen in the far-off distance surrounding the proposed project site.

Based on a review of the local General Plans and Caltrans List of Scenic Highways, the proposed project site is not located along a State scenic highway (California Department of Transportation 2024). Construction activities associated with the proposed project would not be visible to motorists traveling along eligible portions of SR 33, SR 41, or SR 198 due to the distance and intervening topography. Therefore, the proposed project would not impact scenic resources, which include rock

outcroppings, trees, or historic buildings within a designated State scenic highway corridor, and **no impact** would occur.

Issue I.c

The surrounding vicinity is largely uninhabited and rural; the small community of Huron is located approximately 2.8 miles to the northwest of the proposed project site and Kettleman City is located approximately 2.4 miles to the southeast. Public views of the area are provided very briefly to motorists traveling along local roadways and visitors who may fish within the area. Construction activities associated with the proposed project include vegetation clearing and grubbing of the staging and access areas; excavation of the borrow area; excavation, placement of fill, and re-compaction at locations where the new liner raise would be installed; excavation backfill of road drainage pipes; and equipment staging and temporary material stockpiling adjacent to the Aqueduct along the access roads and road aprons by Pools 20 and 21. Excavated areas, stockpiled soils, and other materials generated during construction could temporarily change the visual character of the surrounding environment. These changes would be temporary, occurring over the nine-month construction period, and would not permanently affect the existing visual character of the Aqueduct or surrounding area. Once construction was complete, all construction areas would be re-graded to match pre-project conditions. Further, operation activities would not change with the proposed project and would continue to be conducted in accordance with existing water delivery schedules. Therefore, impacts on the visual character and quality of public views in the proposed project site would be **less than significant**.

Issue I.d

The proposed project site is located within a rural setting where the primary sources of nighttime light and daytime glare are limited to agricultural structures, agricultural activities, and passing vehicles. The proposed project would not install or add new permanent sources of light or glare to the project vicinity. Furthermore, construction activities would be limited to the daylight hours of 6 a.m. to 6 p.m., Monday through Friday, to the greatest extent possible. Therefore, no nighttime lighting is anticipated and impacts from light or glare would be **less than significant**.

References

California Department of Transportation

2024 “California Scenic Highway System Map” [Online mapping tool.] Viewed online at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed: Jul. 9, 2024.

County of Fresno

2024 “Open Space and Conservation Element” In: *Fresno County General Plan – Comprehensive General Plan Review and Revision* [Government document.] Final. Viewed online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/1/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr_general-plan_county_final_2024_02.pdf. Accessed: Sep. 23, 2024. February 2024.

County of Kings

2010 *County of Kings 2035 General Plan, Open Space Element* [Government document.] Viewed online at: https://www.countyofkingsca.gov/home/showpublisheddocument/13519/636065239925700000. Accessed: Jul. 10, 2024.

3.2.2 Agriculture and Forestry Resources

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES—In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

The proposed project site is within the Aqueduct right-of-way and the area is dominated by the concrete-lined Aqueduct, Aqueduct levees, gravel access roads, and vacant lands adjacent to the Aqueduct; surrounding land uses include agricultural lands. There are no agricultural or forestry lands within the proposed project site; however, there are vacant lands adjacent to the Aqueduct within the DWR right-of-way that would be used for borrow and staging. Surrounding areas consist of land designated as Prime and Unique Farmland (California Department of Conservation 2024a). There are also multiple parcels of land that are enrolled in Williamson Act contracts adjacent to the proposed project site (California Department of Conservation 2024b). The portion of the proposed project site within Fresno County is zoned as Exclusive Agriculture (AG-20 and AG-40), while the portion within Kings County is un-zoned but adjacent to lands that are zoned as General Agriculture (AG-40) and Heavy Industrial (M2) near the City of Avenal (County of Fresno 2024; County of Kings 2020; City of Avenal 2021).

Discussion

Issue II.a, b

Construction of the proposed project would occur within the Aqueduct right-of-way; staging would occur along the access road and road aprons in previously disturbed areas; the borrow site is located within previously disturbed vacant land within the DWR right-of-way adjacent to the Aqueduct; and road drain sites are located within and run through the existing Aqueduct embankment, access roads, and road aprons. The proposed project site does not include lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance or lands enrolled under a Wiliamson Act contract in the proposed project site (California Department of Conservation 2024a, 2024b). Therefore, the proposed project would not result in the conversion of farmland to a non-agricultural use or conflict with existing zoning for agricultural use or a Williamson Act contract. Thus, **no impact** would occur.

Issue II.c, d

There are no forestry resources within the proposed project site; therefore, there would be no conflict with existing zoning of forest land and the proposed project would not cause rezoning of forest land, timberland, or timberland zoned for Timberland Production or result in the conversion of forest land to a non-forest use. Thus, **no impact** would occur.

Issue II.e

As described in Issue II.a, b, the proposed project site does not include agricultural lands; therefore, the proposed project would have no impact on land zoned as farmland. Furthermore, the proposed project site is not located in or near land zoned as forest land. The proposed project would not permanently alter the environment in such a way that would result in the conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. Given that there would be no indirect conversion of land zoned as forestland or farmland to other land uses due to the proposed project, **no impact** would occur.

References

California Department of Conservation

2024a "California Important Farmland Finder" [Online mapping tool.] Viewed online at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed: Jul. 10, 2024.

2024b "California Williamson Act Enrollment Finder" [Online mapping tool.] Viewed online at: https://maps.conservation.ca.gov/dlrp/WilliamsonAct/. Accessed: Jul. 10, 2024.

City of Avenal

2021 "City of Avenal" [Zoning map.] Scale not given. Viewed online at: https://www.cityofavenal.com/DocumentCenter/View/3714/Avenal-Zoning-Map—-Updated-9-2021. Accessed: Mar. 4, 2024. Last updated: September 2021.

County of Fresno

2024 "County of Fresno – Zoning" [Online mapping tool.] Viewed online at: https://gisportal.co.fresno.ca.us/portal/apps/webappviewer/index.html?id=b921843d343d4df998b5b3c6a301756a. Accessed: Jul. 11, 2024.

County of Kings

2020 "County of Kings Parcel and Services Map Viewer" [Online mapping tool.] Viewed online at: https://kingscomdev.maps.arcgis.com/apps/webappviewer/index.html?id=35c6e6dac50446b9945154c9fc7f46c8. Accessed: Jul. 11, 2024.

3.2.3 Air Quality

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

Environmental Setting

The proposed project site is located along the Aqueduct in Fresno and Kings Counties within the San Joaquin Valley Air Basin (SJVAB), which is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The topography and meteorology of the SJVAB provide ideal conditions for trapping air pollution for long periods of time and producing harmful levels of air pollutants. Low precipitation levels, cloudless days, high temperatures, and light winds during the summer in the SJVAB are conducive to high ozone levels resulting from the photochemical reaction of ozone precursors nitrogen oxides (NO_x) and volatile organic compounds in the presence of sunlight.

The federal Clean Air Act (CAA) requires that the U.S. Environmental Protection Agency set ambient air quality standards for the following seven criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with a diameter of up to ten microns (PM_{10}), particulate matter with a diameter of up to 2.5 microns ($PM_{2.5}$), and lead (Pb). Standards are set at levels of air quality deemed necessary, with an adequate margin of safety, to protect public health. In addition, the California Air Resources Board has established ambient air quality standards for these and other pollutants, which are typically more stringent than the federal standards.

Under amendments to the federal CAA, the U.S. Environmental Protection Agency has classified air basins or portions thereof as either “attainment” or “non-attainment” for each criteria air pollutant, based on whether or not the national standards have been achieved. The California CAA, which is patterned after the federal CAA, also requires areas to be designated as “attainment” or “non-attainment” for the State standards. Thus, areas in California have two sets of attainment/non-attainment designations: one set with respect to the national standards and one set with respect to the State standards. The SJVAB is currently designated as a non-attainment area for State and national ozone standards, State and national $PM_{2.5}$ standards, and the State PM_{10} standard. SJVAB is designated as “attainment” or “unclassified” with respect to all other criteria air pollutant standards (San Joaquin Valley Air Pollution Control District 2019).

Discussion

Issue III.a

As discussed above, the SJVAB is currently designated as a non-attainment area for federal and State standards with regard to $PM_{2.5}$ and ozone, and the State PM_{10} standard. The SJVAPCD is responsible for implementing programs and regulations required by the federal CAA and the California CAA within the SJVAB. In this capacity, the SJVAPCD has prepared plans to attain federal and State ambient air quality standards for which it has been designated as non-attainment. Current air quality plans for the SJVAB include:

- 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ standards;
- 2022 Plan for the 2015 ozone 8-hour standard; and
- 2014 Reasonably Available Control Technology demonstration for the 8-Hour Ozone State Implementation Plan.

The air quality plans include emissions inventories that identify sources of air pollutants, evaluations for feasibility of implementing potential opportunities to reduce emissions, sophisticated computer modeling to estimate future levels of pollution, and a strategy for how air pollution will be further reduced. In addition, the SJVAPCD has adopted a guidance document, *Guidance for Assessing and Mitigating Air Quality Impacts*, to assist in the evaluation of air quality impacts of projects proposed within its jurisdiction (San Joaquin Valley Air Pollution Control District 2015). This guidance document provides recommended procedures for evaluating potential air quality impacts during the environmental review process consistent with CEQA requirements and includes recommended thresholds of significance, mitigation measures, and background air quality information. It also includes recommended assessment methodologies for air toxics, odors, and greenhouse gas (GHG) emissions.

Based on the SJVAPCD's guidance document, a project's air quality impacts during construction would be considered significant if emissions generated exceed any of the following:

- 100 tons per year of CO;
- 10 tons per year of reactive organic gases or NO_x;
- 27 tons per year of SO_x ; or
- 15 tons per year of PM_{10} or $PM_{2.5}$.

These thresholds of significance are based on the SJVAPCD's New Source Review (NSR) offset requirements and are applied to evaluate regional impacts of project-specific emissions of air pollutants and their impact on the region's ability to reach attainment (San Joaquin Valley Air Pollution Control District 2015). The NSR is also known as District Rule 2201 and contains requirements for best available air pollution control technology and emission offsets. The purpose of NSR is to review new and/or modified stationary sources and modifications and to provide no net increase in emissions above specified thresholds for nonattainment pollutants and their precursors (San Joaquin Valley Air Pollution Control District 2023). The SJVAPCD's attainment plans demonstrate that project-specific emissions below the offset thresholds would have a less-than-significant impact on air quality (San Joaquin Valley Air Pollution Control District 2015). Thus, the SJVAPCD concludes that use of NSR offset thresholds as its thresholds of significance for criteria pollutants is an appropriate and effective means of promoting consistency in significance determinations within the environmental review process. Therefore, projects with emissions below the thresholds of significance for criteria pollutants would be determined to not conflict or obstruct implementation of SJVAPCD's air quality plans.

Construction

Construction of the proposed project would include mobilization, staging and borrow area preparations, canal embankment earthwork and concrete liner raise, drainage work, replacing existing fencing in kind, and other miscellaneous installations described in Chapter 2, "Project Description." Proposed project construction activities would result in emissions of ozone precursors (reactive organic gases and NO_x) and PM in the form of dust (fugitive dust) and exhaust (e.g., vehicle tailpipe emissions). Emissions of ozone precursors and PM are primarily a result of the combustion of fuel from on-road vehicles and off-road construction equipment. Pollutant emissions

would be generated from the following construction activities: (1) material import from borrow site, (2) vehicle trips from workers traveling to and from the construction areas, (3) trips associated with delivery of construction supplies to and from the construction areas, and (4) fuel combustion by on-site construction equipment. These activities would temporarily generate air pollutant emissions in addition to dust and fumes. The amount of construction-related emissions generated on a daily basis would vary, depending on the intensity and types of construction activities occurring simultaneously. Overall, proposed project construction activities are expected to last nine months.

PM is among the pollutants of greatest localized concern with respect to construction activities. Construction emissions of PM can vary greatly depending on the level of activity, the specific operations taking place, the number and types of equipment operated, local soil conditions, weather conditions, and the amount of earth disturbance. Fugitive dust emissions from construction activities would be regulated by SJVAPCD's Regulation VIII, which limits fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities. The project would be required to comply with these limits.

Construction emissions for the proposed project were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1.1, and are presented in **Table 3-1**. Project-specific information was used for model inputs for construction schedule, phase durations, off-road equipment types and numbers, imported material quantities, and estimates for numbers for worker and contractor trips per phase. Where project-specific data were unavailable, CalEEMod defaults were used as inputs, which provide assumed values consistent with standard practice. CalEEMod assumptions and a detailed output can be found in **Appendix A**. The table shows the project's estimated construction emissions by year and compares them to the SJVAPCD significance thresholds for construction emissions.

Table 3-1 Project Construction Emissions

Construction Year	Estimated Annual Construction Emissions (tons/year)					
	ROG	NOx	CO	SOx	PM_{10}	$Pm_{2.5}$
2025	0.68	4.75	4.56	0.01	0.27	0.18
2026	0.29	1.80	2.05	0.01	0.12	0.07
SJVAPCD Significance Threshold	10	10	100	27	15	15
Exceeds Threshold?	No	No	No	No	No	No

Source: Data compiled by ESA in 2025

Notes: ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter with a diameter of up to 10 microns; $PM_{2.5}$ = particulate matter with a diameter of up to 2.5 microns.

As shown in Table 3-1, annual construction emissions of ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ would not exceed the SJVAPCD significance thresholds for construction emissions. In addition,

proposed project construction would be required to comply with the requirements of SJVAPCD Regulation VIII, which aims to limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities (San Joaquin Valley Air Pollution Control District 2004). Control measures required and enforced by the SJVAPCD under Regulation VIII would further reduce the PM emissions shown in Table 3-1.

Based on the SJVAPCD's approach to air quality planning, proposed project construction emissions would be below applicable SJVAPCD thresholds for construction and the proposed project would be consistent with the region's air quality plans.

Operation

Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing water delivery schedules. The liner raise project would not have any operational activities associated with it. Once the proposed liner raise is completed, the proposed project would not create any new sources of air pollutant emissions associated with operation and maintenance activities. No new diesel-powered equipment would be required for project operations. Therefore, no new emissions would be generated as a result of project operation, and project operation would not conflict with or obstruct implementation of the regional air quality plan.

Construction and operation of the proposed project would result in a **less-than-significant impact**.

Issue III.b

CEQA defines cumulative impacts as two or more individual impacts which, when considered together, are either significant or "cumulatively considerable," meaning they add considerably to a significant environmental impact. An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed.

By its very nature, air pollution is largely a cumulative impact. No single project would likely be sufficient in size, by itself, to result in non-attainment of the regional air quality standards. Instead, a project's emissions may be individually limited but cumulatively considerable when taken in combination with past, present, and future development within the SJVAB. The non-attainment status of the SJVAB with respect to regional pollutants is a result of past and present development. Future attainment of State and federal ambient air quality standards is a function of successful implementation of SJVAPCD's attainment plans. Consequently, the SJVAPCD's application of thresholds of significance for criteria pollutants is a relevant way to determine whether a project's individual emissions would have a cumulatively significant impact on air quality.

Per CEQA Guidelines Section 15064(h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to, an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative pollution within the geographic area in which the project

is located (San Joaquin Valley Air Pollution Control District 2015). The SJVAPCD has established thresholds of significance for criteria pollutant emissions which are based on New Source Review offset requirements for stationary sources. Emission reductions achieved through implementation of offset requirements are a major component of the SJVAPCD's air quality plans. Thus, projects with emissions below the thresholds of significance for criteria pollutants would be determined to comply with the SJVAPCD's air quality plans and would not contribute a cumulatively considerable increase for these criteria pollutants (San Joaquin Valley Air Pollution Control District 2015).

As shown in Table 3-1, proposed project emissions would be less than the SJVAPCD-recommended thresholds of significance for construction emissions, and proposed project operations would not generate new air emissions. Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard. The impact with respect to criteria air pollutant emissions would be **less than significant**.

Issue III.c

Sensitive receptors are defined as facilities and land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of facilities and land uses are schools, hospitals, and daycare centers. Residential areas are also considered sensitive to poor air quality because people usually stay home for extended periods of time, which results in greater exposure to ambient air quality.

The section of Aqueduct in which the proposed project is located primarily runs through agricultural fields and undeveloped land (Figure 2-2). The area is rural and predominately uninhabited, and there are predominately uninhabited; there is one residence within 1,000 feet of the proposed project site located near the corner of 30th Avenue and Quebec Avenue. However, construction activities would occur along the linear alignment of the Aqueduct and therefore would not be anticipated to occur at any one area for an extended period of time. Additionally, PM_{10} emissions are minimal and would be below the thresholds set by SJVACP, as shown in Table 3-1. Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing water delivery schedules. The liner raise project does not have any operational activities associated with it; therefore, the proposed project would not result in any new emissions from operations. As a result, the proposed project would not expose sensitive receptors to substantial criteria pollutants due to the short-term nature of construction activity, linear movement of construction along the Aqueduct, and low levels of PM_{10} emissions from construction. Therefore, impacts would be **less than significant**.

Issue III.d

Diesel-powered construction equipment can generate short-term, non-persistent odors due to engine exhaust, but these dissipate quickly and would likely not be noticeable beyond the work site. Additionally, as discussed above, the area surrounding the proposed project site is rural and uninhabited. Operation of the Aqueduct after the proposed project is complete would be similar to existing conditions and would not introduce any new sources that would generate odorous

emissions. Therefore, the proposed project would not create odors that could impact a substantial number of people, and **no impact** would occur.

References

San Joaquin Valley Air Pollution Control District

2004 "Regulation VIII: Fugitive PM10 Prohibition" [Website.] Viewed online at: https://ww2.valleyair.org/rules-and-planning/current-district-rules-and-regulations/regulation-viii-fugitive-pm10-prohibitions/. Accessed: October 2024.

2015 *Guidance for Assessing and Mitigating Air Quality Impacts*. Viewed online at: https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf. Accessed: October 2024. Last updated: Mar. 19, 2015.

2019 *Ambient Air Quality Standards & Valley Attainment Status*. Viewed online at: https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainmnet-status/. Accessed: October 2024.

2023 Rule 2210 New and Modified Stationary Source Review Rule. Viewed online at: https://ww2.valleyair.org/media/zzslqswt/rule-2201.pdf. Accessed: July 2025.

3.2.4 Biological Resources

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES—Would the project:				
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 Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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 U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Environmental Setting

The following environmental setting is based on the Pool 20 and Pool 21 Liner Raise Project Biological Resources Technical Report prepared in 2025 (**Appendix B**). The proposed project site is located entirely within DWR's right-of-way. The habitats and land types on the site consist of existing paved and unpaved road surfaces as well as previously disturbed land with sparse vegetation. There are native and non-native vegetation communities immediately adjacent to the Aqueduct between the access road and agricultural fields within DWR's right-of-way.

The information provided in this section was obtained from a desktop-level review and field surveys for biological resources conducted between 2015 and 2025 (**Table 3-2**). Species-specific surveys were conducted for vegetation and general habitat assessments, as well as blunt-nosed leopard lizard (*Gambelia sila*), western spadefoot (*Spea hammondii*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), other nesting raptors, tricolored blackbird (*Agelaius tricolor*), cliff swallow (*Petrochelidon pyrrhonota*), barn swallow (*Hirundo rustica*), bats (*Chiroptera* spp.), small mammal habitat, San Joaquin kit fox (*Vulpes macrotis mutica*), Crotch's bumble bee (*Bombus crotchii*), and canid den and burrows where habitat was present (Appendix B and California Department of Water Resources 2025a, 2025b, and 2025c). Sensitive biological resources, including special-status plant and animal species, sensitive natural communities, and aquatic resources that may occur within the proposed project site were determined, in part, by reviewing natural resource agency databases, relevant literature, and historic survey data. DWR biologists have conducted countless surveys over the last several decades that have contributed to the body of knowledge regarding the protection and distribution of species and habitat presence in the proposed project site (Table 3-2). A review of this information allowed for an initial determination of the distribution of sensitive resources and the probability of their occurrence within the proposed project site (Appendix B and California Department of Water Resources 2025a, 2025b, and 2025c).

Vegetation Communities and Land Cover Types

"Sensitive" natural communities and habitats are defined by the California Department of Fish and Wildlife (CDFW) as those natural communities that have a reduced range or are imperiled because of various forms of development and other anthropogenic stressors, including residential and commercial expansion, various forms of agriculture, energy production, and mining. The ecological status of these communities is determined using the NatureServe Heritage Methodology, which considers the range, distribution, and ecological integrity of vegetation types at global (G) rank and California State (S) rank levels (ranks 1–5, critically imperiled to demonstrably secure) (Faber-Langendoen et al. 2012). According to CFDW, communities with a State rank of S1 through S3 are classified as sensitive natural communities and may require review when evaluating environmental impacts.

The proposed project site contains 13 vegetation communities, as defined by the *Manual of California Vegetation* (Manual) (Sawyer, Keeler-Wolf, and Evens 2009), or as characterized by dominant species present; these vegetation communities are fiddleneck-filaree fields, wild oats and annual brome grassland, red brome or Mediterranean grass grassland, tar plant fields, sunflower patches, Russian thistle fields, quailbush scrub, willow thickets and mulefat-quailbush (Goodding's willow riparian), cattail marshes, mulefat thickets, and wild almond grove, as well as disturbed land (bare land). These vegetation alliances can be categorized into six habitat types as defined by the California Wildlife Habitat Relationships (CWHR): annual grassland, alkali desert scrub, valley foothill riparian, fresh emergent wetland, deciduous orchard, and barren land. A description of each of these vegetation types is shown in **Table 3-3**. Locations of each habitat type within the proposed project site are shown in **Figure 3-1** through **Figure 3-11**.

Table 3-2 Surveys Conducted near Pools 20 and 21 from 2015 to 2024

Project/Activity	Year(s)	Survey Type
Erosion Repair and Aqueduct Maintenance	2015–2024	Biological Resources Assessment
Access Road Maintenance, Mowing and Grading	2015–2024	Biological Resources Assessment
Westside Detention Basin Maintenance	2015–2024	Protocol Level Swainson's Hawk
Westside Detention Basin Maintenance	2015–2024	Protocol Level Blunt-nosed Leopard Lizard
Rubber Dam Geotech	2015	Pre-construction Survey
Rubber Dam Repair	2017	Pre-construction Survey
Irrigation Crossing Pipe Inspections and Repair Project	2019	Reconnaissance Den and Burrow Survey
Irrigation Crossing Pipe Inspections and Repair Project	2019	Pre-construction Survey and Monitoring
California Aqueduct Subsidence Program	2020	Vegetation Mapping
California Aqueduct Subsidence Program	2020	Land Use Ground-truthing Surveys
California Aqueduct Subsidence Program	2020	Reconnaissance Den and Burrow Survey
CASP Geotechnical Explorations	2021	Pre-construction Surveys and Monitoring
California Aqueduct Subsidence Program	2023–2024	Survey Known Sensitive Resources
California Aqueduct Subsidence Program	2024	Western Spadefoot Habitat Assessment
California Aqueduct Subsidence Program	2025	Crotch's Bumble Bee Habitat Assessment and Survey
California Aqueduct Subsidence Program	2025	Western Spadefoot Biological Assessment
California Aqueduct Subsidence Program	2025	Burrowing Owl Biological Assessment

Source: Data compiled by Environmental Science Associates in 2025

Note: This table does not include discrete maintenance projects in which special-status species observations may have been made outside a focused survey. However, any species observations collected during other projects not shown in this table have been included in this report.

Table 3-3 Vegetation Communities/Land Cover Types and Habitat Types within the Proposed Project Site and Study Area

Vegetation Community/ Land Cover Type (State Rank) [a]	California Wildlife Habitat Relationships Habitat Type [b]	Description	Proposed Project Site Acreage				Study Area Acreage [c]
			Liner Raise	Road Drains	Staging Areas	Borrow Areas	
Fiddleneck-filaree fields (S5)	Annual grassland	Characterized by open grasslands composed of annual grasses and forbs. Often occur as an understory to other habitats. Species diversity and structure depends largely on weather patterns and grazing. Great physical differences are seen between seasons.	–	–	1.96	–	9.25
Wild oats and annual brome grassland (SNA)			–	–	–	–	9.67
Red brome or Mediterranean grass grassland (SNA)			–	0.01	7.13	–	144.50
Tar plant fields (S2)			–	–	–	–	0.93
Sunflower patches*			–	–	–	–	1.59
Upland mustards and other ruderal forbs			–	–	–	78.93	78.93
Russian thistle fields*	Alkali desert scrub	Characterized by open stands of very low to moderately high (0.25–2.0 meters; 0.8–6.6 feet tall) grayish, spinescent, leptophyllous to microphyllous subshrubs and shrubs, which are physically uniform, widely spaced, and occur on relatively dry soils.	–	–	–	–	4.06
Quailbush scrub (S4)			–	–	–	–	6.33
Goodding's willow riparian (S3)	Valley foothill riparian	Found in valleys bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. They are generally associated with low velocity flows, flood plains, and gentle topography. Valleys provide deep alluvial soils and a high water table.	–	–	–	–	0.88
Cattail marshes (S5)	Fresh emergent wetland	Characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots to 2 meters (6.6 feet) tall. Are flooded frequently enough so that anaerobic soil conditions occur.	–	–	–	–	0.14
Mulefat thickets (S4)			–	–	–	–	7.37

Table 3-3 Vegetation Communities/Land Cover Types and Habitat Types within the Proposed Project Site and Study Area

Vegetation Community/ Land Cover Type (State Rank) [a]	California Wildlife Habitat Relationships Habitat Type [b]	Description	Proposed Project Site Acreage				Study Area Acreage [c]
			Liner Raise	Road Drains	Staging Areas	Borrow Areas	
Wild almond grove*	Deciduous orchard	Characterized by open single-species tree habitat. Typically low, bushy trees with an open understory. Spacing between trees is uniform and the understory is usually composed of low-growing grasses, legumes, and other herbaceous plants.	–	–	–	–	1.08
Bare land (Disturbed)	Barren	Characterized by the absence of vegetation. Any habitat with <2% total vegetation cover by herbaceous, desert, or nonwildland species and <10% cover by tree or shrub species is defined this way. May consist of sparse growth, rock, gravel, and soil.	–	0.01	5.51	–	138.45
Developed			26.30	0.03	–	–	94.20
		Total	**26.30**	**0.05**	**14.59**	**78.93**	**497.38**

Source: Data compiled by California Department of Water Resources in 2024

Notes:

a. State Rank (Faber-Langendoen et al. 2012)
   * Alliances that have sufficient data to propose the vegetation type, but not enough research and regional information to be confident about its status in California's vegetation (California Department of Fish and Wildlife, VegCAMP).
   SNA = Semi-natural Alliances - strongly dominated by non-native plants that have become naturalized in the State.
   S1 = Critically Imperiled – At very high risk of extirpation due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
   S2 = Imperiled – At high risk of extirpation due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
   S3 = Vulnerable – At moderate risk of extirpation due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
   S4 = Apparently Secure – At a fairly low risk of extirpation due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
   S5 = Secure – At very low or no risk of extirpation due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.
b. California Department of Fish and Game 1988
c. The study area is the Aqueduct right-of-way in the vicinity of Pools 20 and 21, including the proposed project site components, and minus the open water portion of the Aqueduct.

Intentionally Blank



SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-1
Habitat Types

ESA

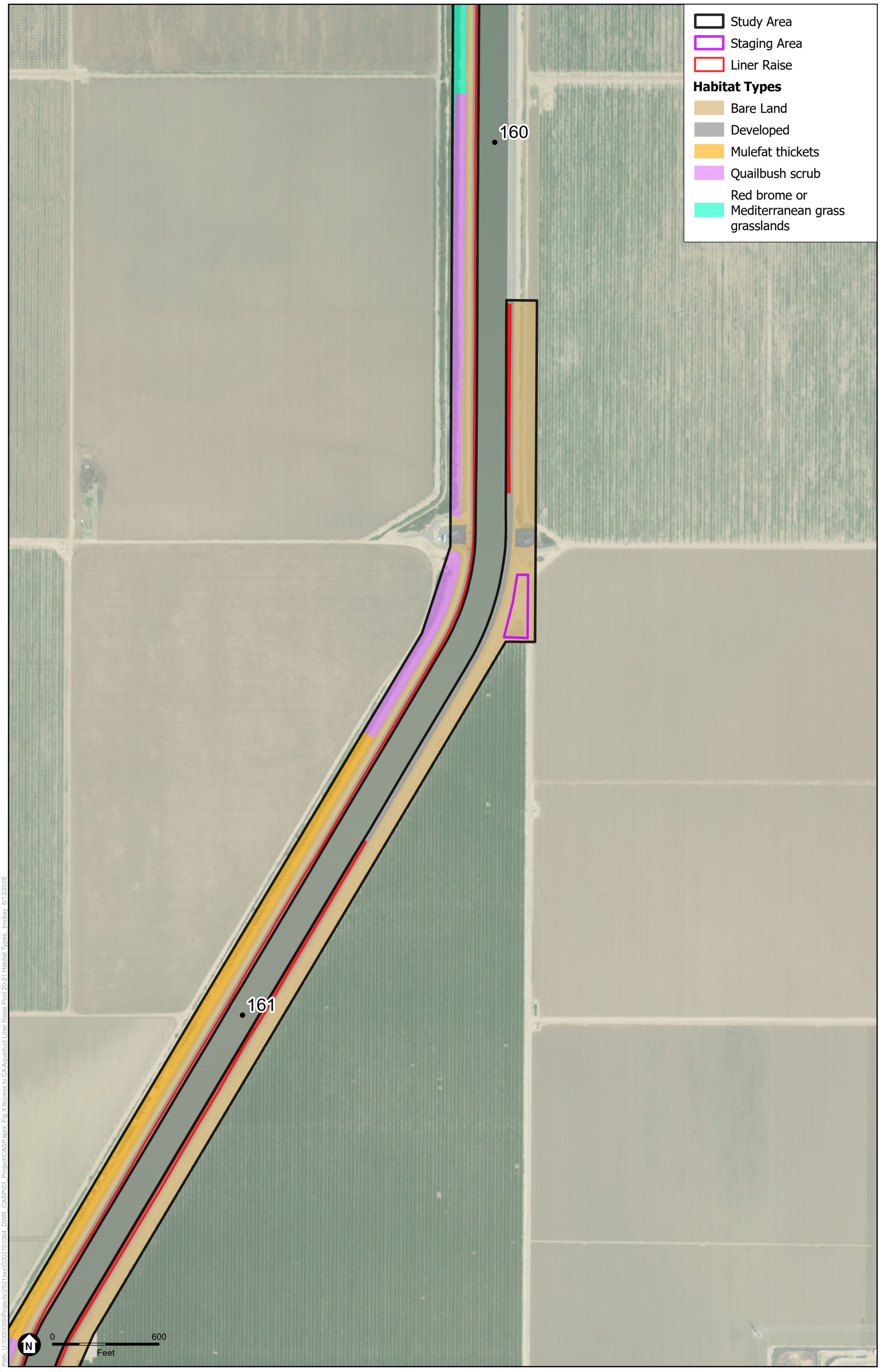


SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-2
Habitat Types

ESA

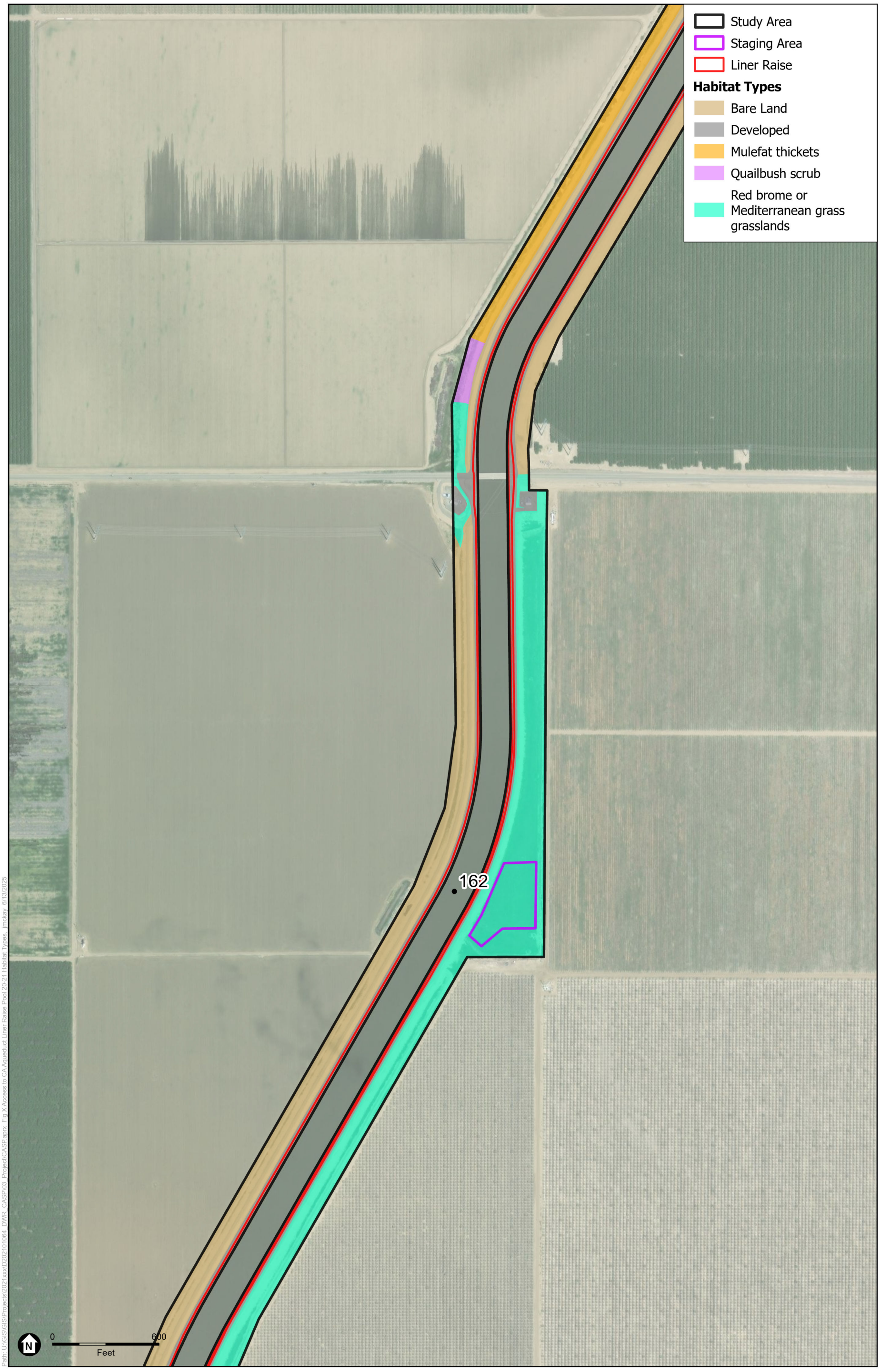


SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-3
Habitat Types

ESA



SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-4
Habitat Types

ESA

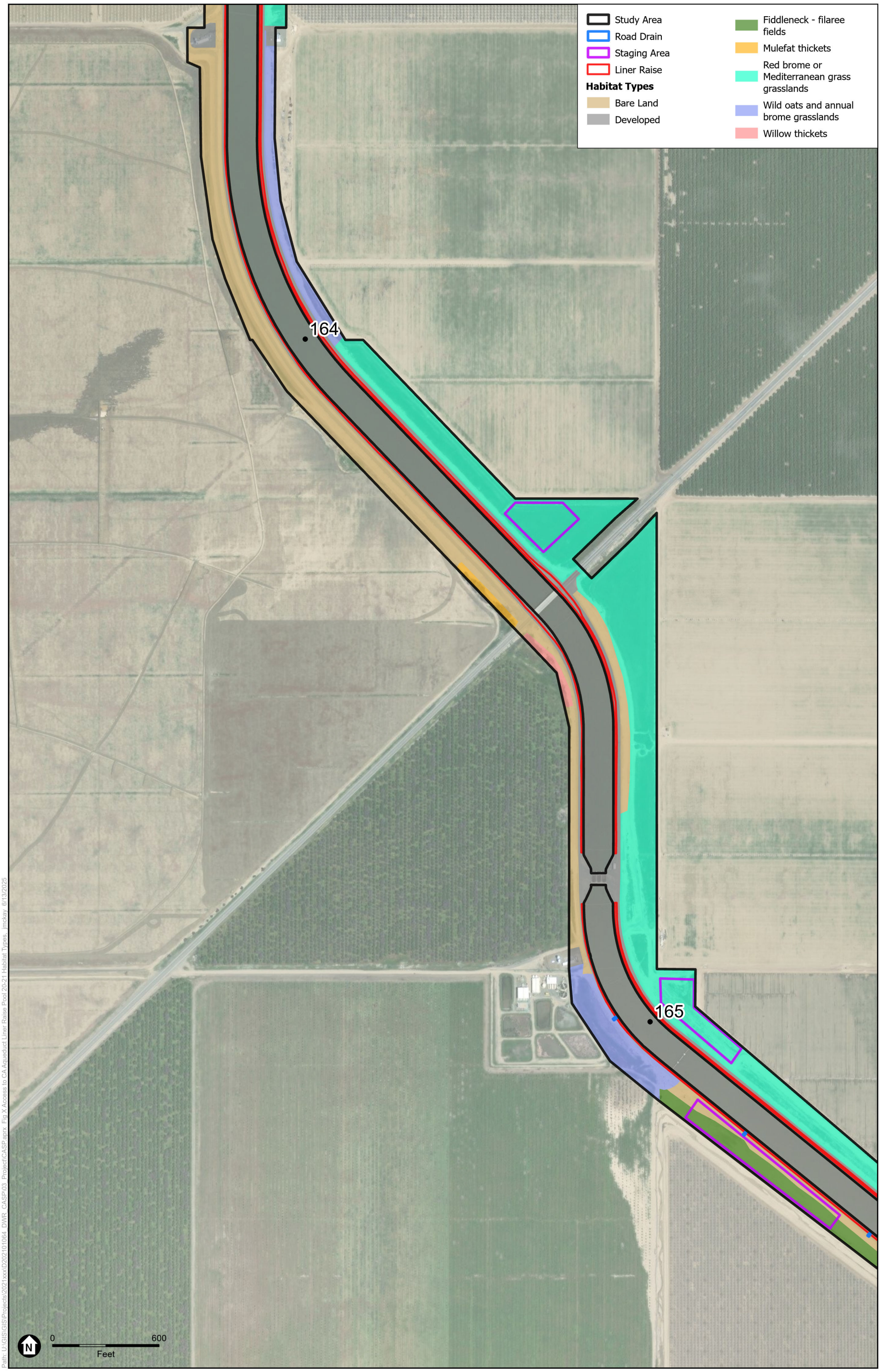


SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-5
Habitat Types

ESA

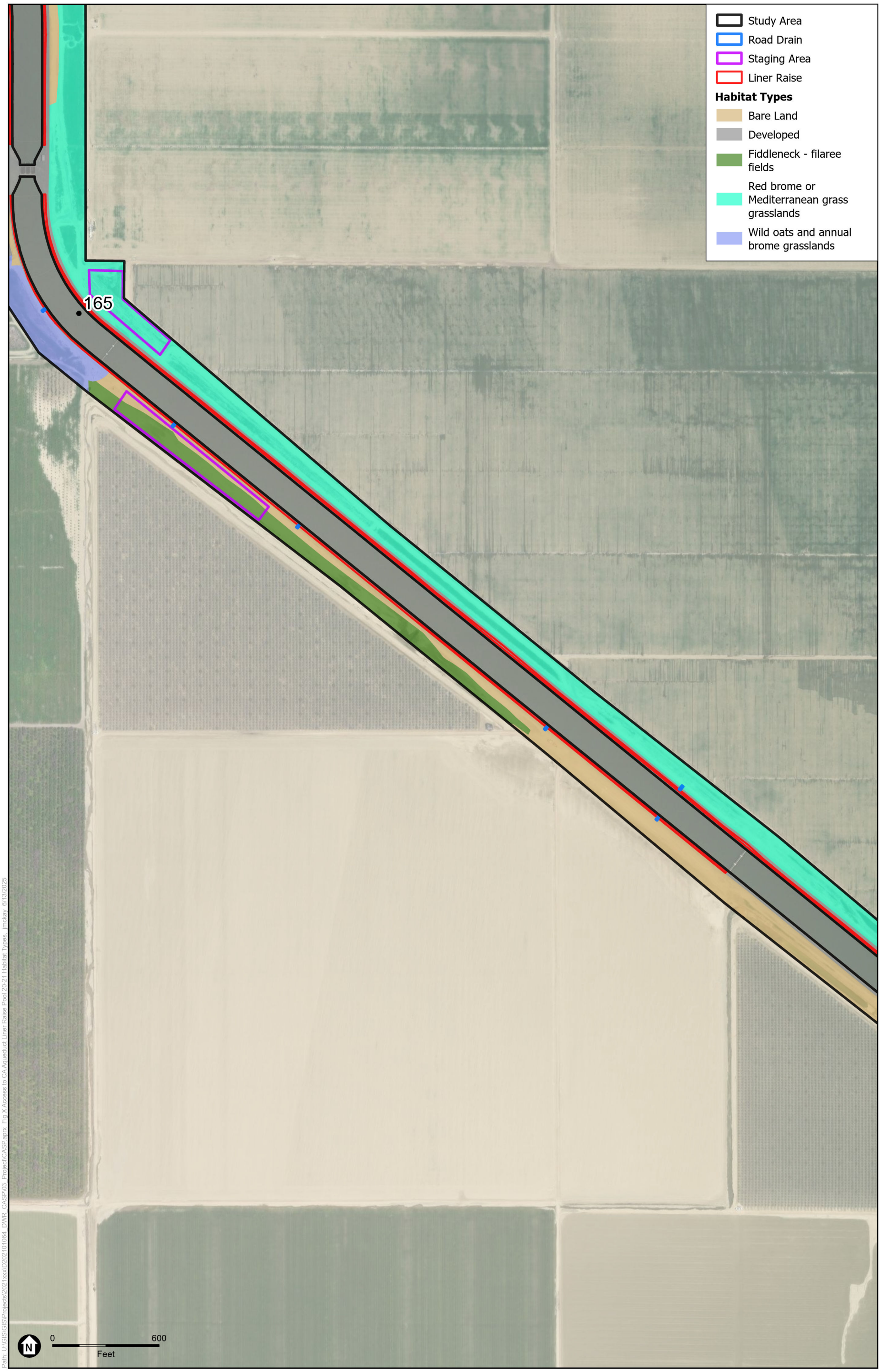


SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-6
Habitat Types

ESA

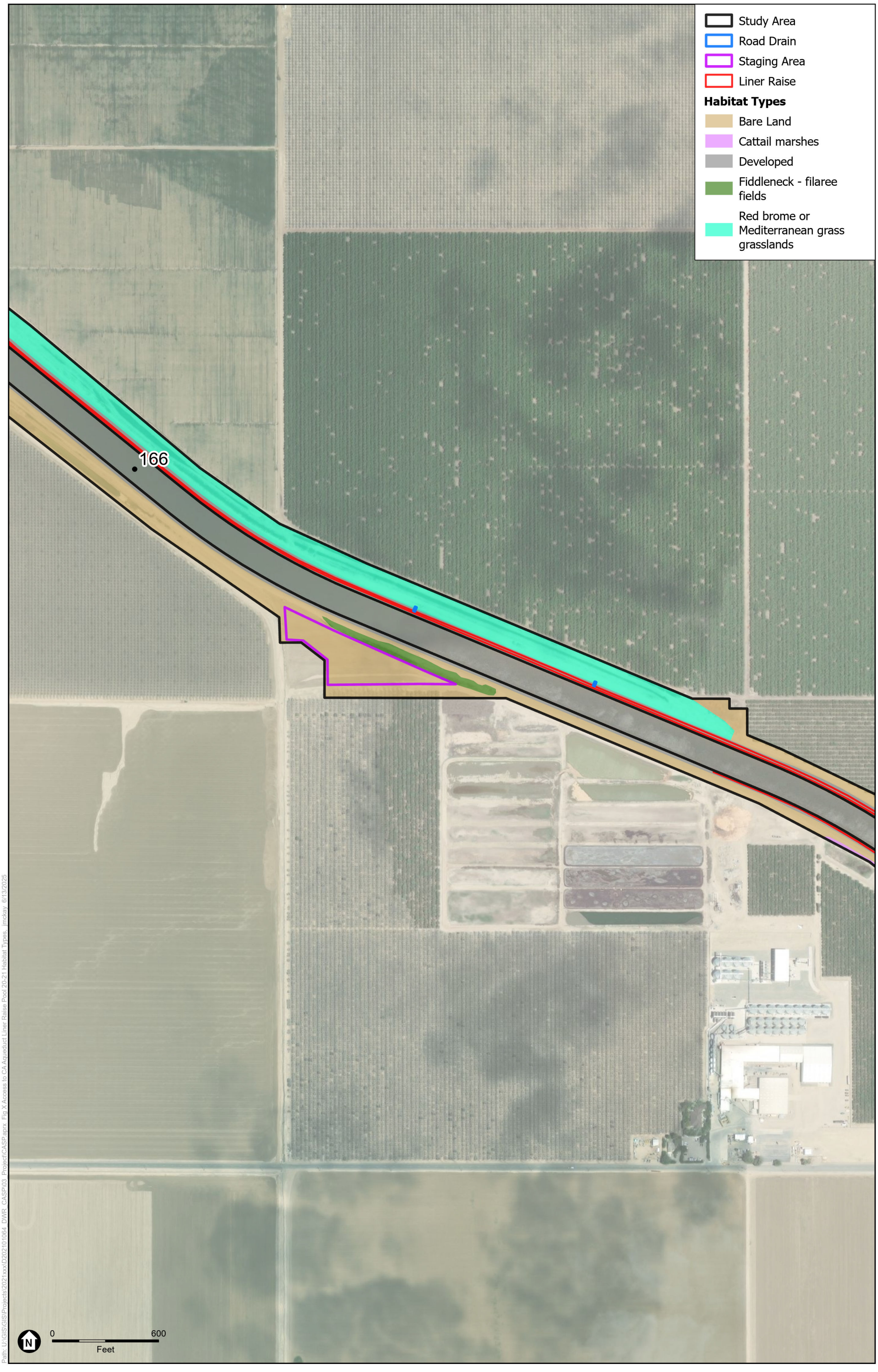


SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-7
Habitat Types

ESA

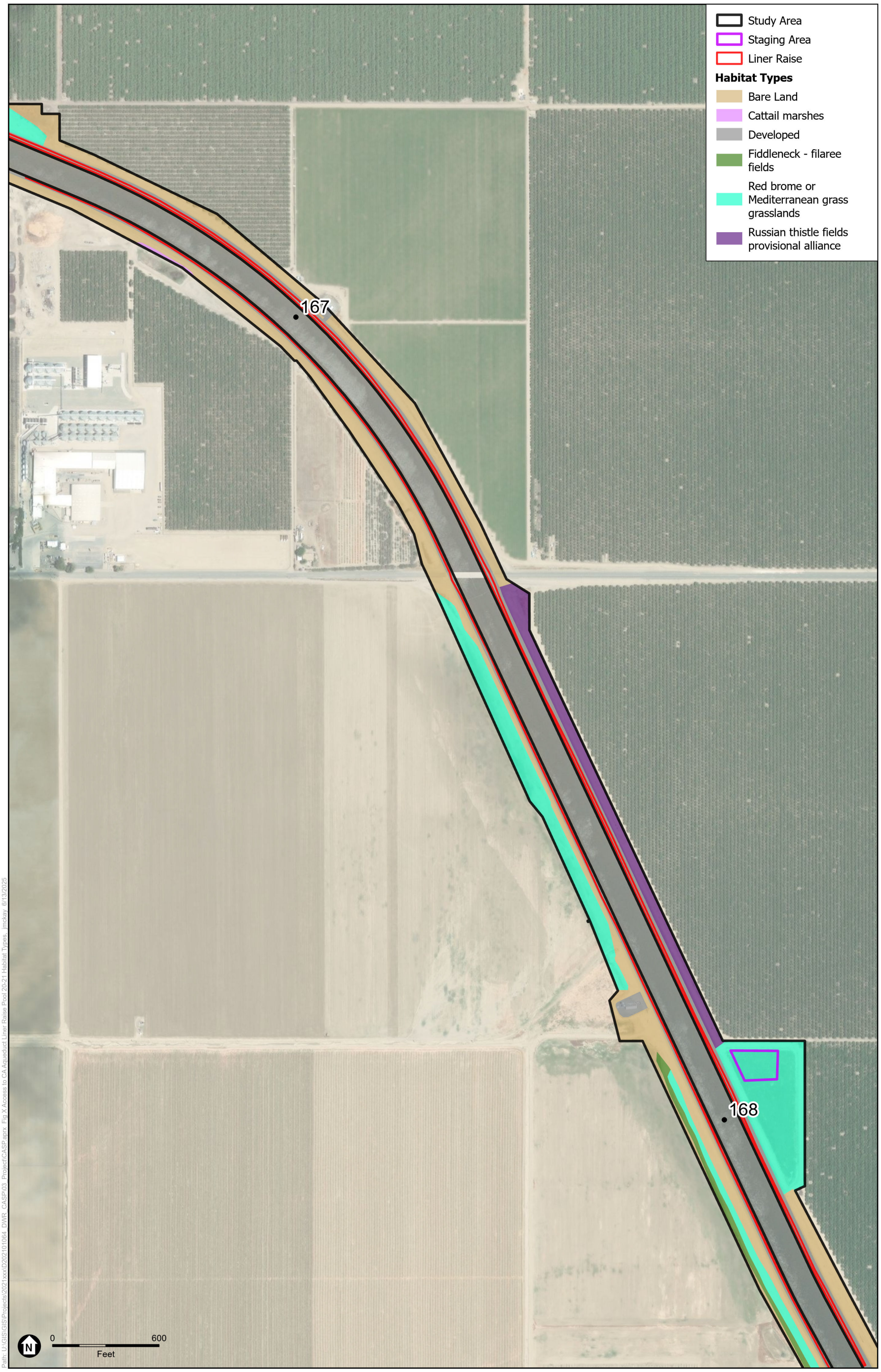


SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-8
Habitat Types

ESA

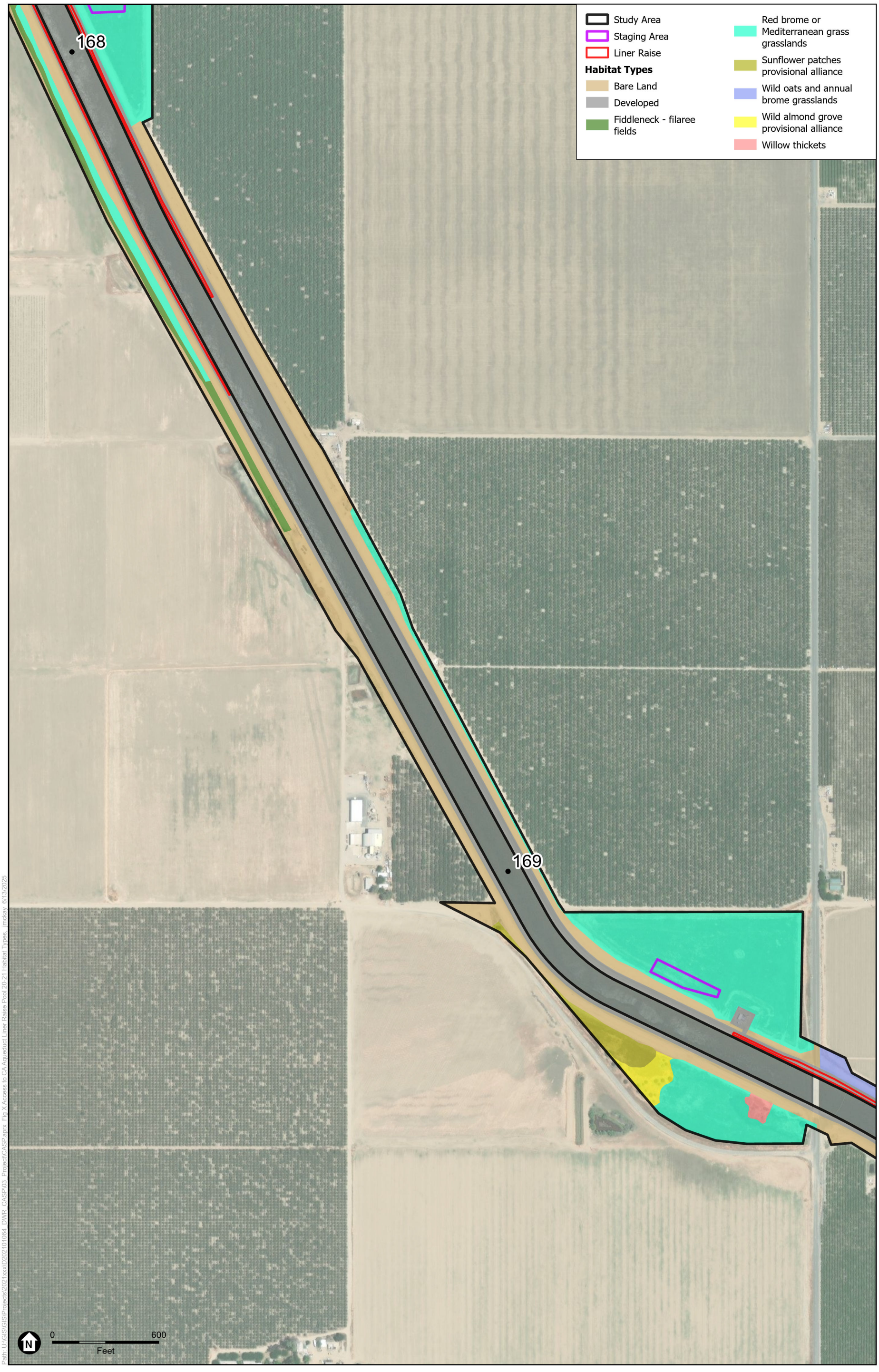


SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-9
Habitat Types

ESA

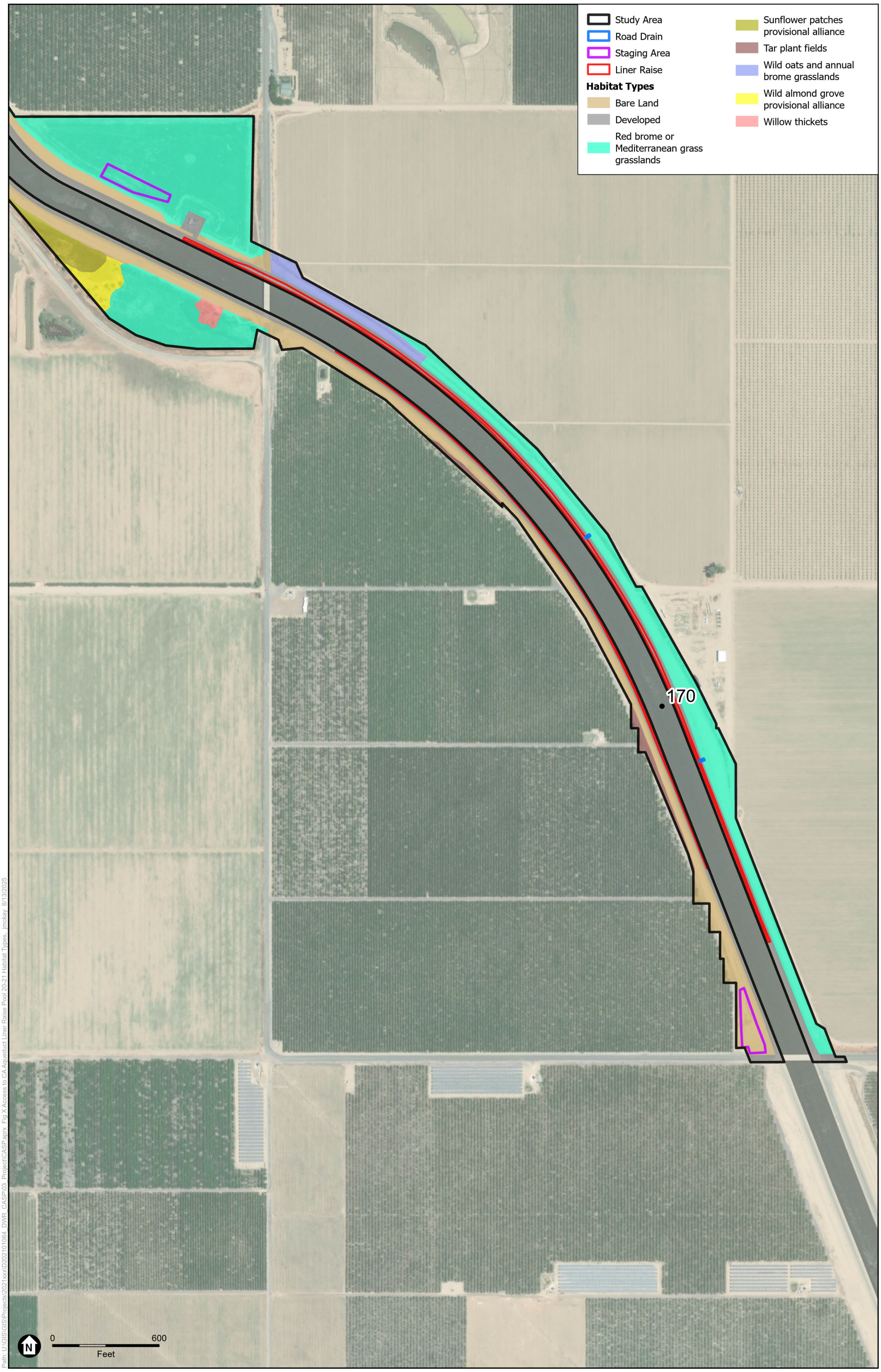


SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-10
Habitat Types

ESA



SOURCE: ESRI, DWR, 2025.

CASP Enviro Support

Figure 3-11
Habitat Types

ESA

Intentionally Blank

Barren lands are the prominent habitat type within the proposed project site and are concentrated on the embankment slopes and shoulder of the Aqueduct's paved roads. The project activities are proposed to occur within developed areas dominated by the existing roadway and structures. Habitat types along both sides of the Aqueduct consist of vegetation alliances dominated by quailbush and Russian thistle, with small patches of alkali desert scrub. The cattail stands in the vicinity of the proposed project site are mainly associated with agricultural ponds and canals created to hold and transport agricultural water. These ponds are routinely modified, plowed, and re-established, and are surrounded by annual grassland, bare ground, or agriculture. The Aqueduct right-of-way is fragmented and highly disturbed, with introduced non-native species, adjacent agricultural land use, routine mowing and spraying along the Aqueduct, and vandalism such as burning and trash dumping. Adjacent land use is dominated by agriculture and idle fields.

One alliance, tar plant fields, is designated as State rank S2 (Imperiled), which indicates that it is at high risk of extirpation due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

Special-Status Species

The term *special-status species* refers to plant and wildlife species that are considered sufficiently rare that they require special consideration and/or protection and should be, or currently are, listed as rare, threatened, or endangered by the federal and/or State governments. Such species are legally protected under FESA, the California Endangered Species Act (CESA), or other regulations, or are species that are considered sufficiently rare by the regulatory and scientific community to qualify for protection.

Special-status plant species include plants that are (1) listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the FESA or CESA; (2) meet the definitions of rare or endangered under CEQA Guidelines Section 15380; (3) considered by the CNPS and CDFW to be rare, threatened, or endangered (California Rare Plant Rank [CNPR] 1A, 1B, 2A, and 2B plants) in California; and (4) listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.), defined as:

- California Rare Plant Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.
- California Rare Plant Rank 1B: Plants rare, threatened, or endangered in California and elsewhere.
- California Rare Plant Rank 2A: Plants presumed extirpated in California but common elsewhere.
- California Rare Plant Rank 2B: Plants rare, threatened, or endangered in California but common elsewhere.
- California Rare Plant Rank 3: Plants about which more information is needed, a review list.
- California Rare Plant Rank 4: Plants of limited distribution, a watch list.

In addition to the above rankings, the California Rare Plant Rank extensions are:

- .1 – Seriously threatened in California (greater than 80 percent of occurrences are threatened and/or have a high degree and immediacy of threat).
- .2 – Moderately threatened in California (20 to 80 percent of occurrences are threatened and/or have a moderate degree and immediacy of threat).
- .3 – Not Very Threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Special-status wildlife species include species that are (1) listed as threatened or endangered under FESA or CESA, (2) proposed for federal listing as threatened or endangered, (3) State or federal candidate species, and (4) identified by CDFW as species of special concern (SSC) or fully protected (FP) species.

A comprehensive list of special-status plant and wildlife species that could occur within the proposed project site was compiled based on a database search and literature review to assess the likelihood of species occurrence. The potential for a special-status species to occur within the proposed project site is based on the following criteria:

- **High:** The species has been recently (since 2015) documented in the vicinity of the project site, and suitable habitat for the species is present.
- **Moderate:** The proposed project site is located within the current range of the species, or there are nearby documented occurrences and suitable habitat for the species is present.
- **Low:** The proposed project site is located within the current range of the species, and low-quality (marginal) habitat is present.
- **None:** The proposed project site is located outside of the species' current range or suitable habitat to support the species is not present.

Special-Status Plant Species

Special-status plant species as reported in the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (iPaC) Online System (U.S. Fish and Wildlife Service 2024), CDFW's California Natural Diversity Database (CNDDB) (California Department of Fish and Wildlife 2024), and CNPS's Rare Plant Inventory (California Native Plant Society 2024) were evaluated for their potential to occur within the proposed project site and are listed in **Table 3-4**, which includes listing statuses, brief descriptions of habitat requirements, and a determination of the potential for the species to occur within the proposed project site.

As shown in Table 3-4, all special-status plant species were determined to have low potential to occur within the proposed project site due to lack of suitable habitat or other considerations and are not discussed further. Species with no potential to occur are also not discussed.

Table 3-4 Special-Status Plant Species Potential to Occur

Common Name *Scientific Name*	Listing Status and California Rare Plant Rank	Flowering Period	Habitat Requirements	Potential for Occurrence
Asteraceae (Sunflower Family)				
San Joaquin woollythreads *Monolopia congdonii*	FE 1B.2	Feb.–May	Chenopod scrub and valley and foothill grassland (sandy). Elevation range extends from 60 to 800 meters amsl.	Low. Marginal suitable habitat is present in the right-of-way; however, the species has not been observed within 3 miles of the proposed project site since the 1940s. A revisit in 1988 by CDFW resulted in no observation of the species and noted no native habitat remained at the site.
Brassicaceae (Cabbage Family)				
California jewelflower *Caulanthus californicus*	FE SE 1B.1	Feb.–May	Alkali desert scrub, pinyon and juniper woodland, and valley and foothill grassland. Elevation range extends from 61 to 1,000 meters amsl.	Low. Marginal suitable habitat is present in the right-of-way, but the degree of past and ongoing disturbance reduces the likelihood for this species to occur. The nearest observation occurred in 1935, more than 7 miles west of the proposed project site.
Lemmon's jewelflower *Caulanthus lemmonii*	1B.2	Feb.–May	Pinyon and juniper woodland, valley and foothill grassland. Elevation range extends from 80 to 1,580 meters amsl.	Low. Marginal suitable habitat is present in the right-of-way, but the degree of past and ongoing disturbance reduces the likelihood for this species to occur. The nearest observation occurred in 2005, more than 11 miles west of the proposed project site.
Chenopodiaceae (Goosefoot Family)				
Crownscale *Atriplex coronata* var. *coronata*	4.2	Mar.–Oct.	Chenopod scrub, valley and foothill grassland, and vernal pools. Elevation range extends from 1 to 590 meters amsl.	Low. Marginal suitable habitat is present in the right-of-way, but the degree of past and ongoing disturbance reduces the likelihood for this species to occur. The nearest observation occurred in 2017, more than 5 miles west of the proposed project site.

Table 3-4 Special-Status Plant Species Potential to Occur

Common Name *Scientific Name*	Listing Status and California Rare Plant Rank	Flowering Period	Habitat Requirements	Potential for Occurrence
Brittlescale *Atriplex depressa*	1B.2	Apr.–Oct.	Chenopod scrub, Meadows and seeps, playas, valley and foothill grassland, vernal pools. Elevation range extends from 1 to 320 meters amsl.	Low. Marginal suitable habitat is present within the right-of-way; however, the only nearby occurrence was last confirmed in the adjacent “Guijarral Hills” quadrangle in 2019.
Lamiaceae (Mint Family)				
San Joaquin bluecurls *Trichostema ovatum*	4.2	Jul.–Oct.	Chenopod scrub, valley and foothill grassland. Elevation range extends from 65 to 320 meters amsl.	Low. Marginal suitable habitat is present in the right-of-way, but the degree of past and ongoing disturbance reduces the likelihood for this species to occur on-site. The nearest observation occurred in 2021, more than 2 miles northeast of the proposed project site.
Malvaceae (Mallow Family)				
Kern mallow *Eremalche parryi* ssp. *kernensis*	FE 1B.2	Mar.–May	Alkali desert scrub, pinyon and juniper woodland, and valley and foothill grassland.	Low. Marginal suitable habitat is present within the right-of-way; however, the only nearby occurrence was last confirmed in the ‘La Cima’ quadrangle in 2019.
Polemoniaceae (Phlox Family)				
Hoover's eriastrum *Eriastrum hooveri*	FD 4.2	Mar.–Jul.	Alkali desert scrub, pinyon and juniper woodland, and valley and foothill grassland.	Low. Marginal suitable habitat is present in the right-of-way, but the degree of past and ongoing disturbance reduces the likelihood for this species to occur. The nearest observation occurred in 2024, more than 4 miles west of the proposed project site.

Table 3-4 Special-Status Plant Species Potential to Occur

Common Name *Scientific Name*	Listing Status and California Rare Plant Rank	Flowering Period	Habitat Requirements	Potential for Occurrence
Polygonaceae (Buckwheat Family)				
Cottony buckwheat *Eriogonum gossypinum*	4.2	Mar.–Sep.	Chenopod scrub and valley and foothill grassland. Elevation range extends from 100 to 550 meters amsl.	Low. Marginal suitable habitat is present in the right-of-way; however, occurrences of the species are primarily in the coast range. The nearest observation occurred in 2003, more than 7 miles west of the proposed project site.

Source: Data compiled by the California Department of Water Resources in 2024

Notes:

amsl = above mean sea level

FE = Federally Endangered

FD = Federally Delisted (Recovered)

SE = State Endangered

CRPR = California Rare Plant Rank

1B = Plants Rare, Threatened, or Endangered in California and Elsewhere
4B = Watch List: Plants of Limited Distribution
0.2 = Moderately Threatened in California (20–80 percent occurrences threatened/moderate degree and immediacy of threat)

Special-Status Wildlife Species

Special-status wildlife species as reported in the USFWS's IPaC and CDFW's CNDDB are listed in **Table 3-5**, which includes listing status, brief descriptions of habitat requirements, and a determination of the potential for the species to occur within the proposed project site.

As shown in Table 3-5, 13 special-status wildlife species were determined to have a moderate or high potential to occur within the proposed project site: western spadefoot (*Spea hammondii*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), Swainson's hawk (*Buteo swainsoni*), northern harrier (*Circus hudsonius*), merlin (*Falco columbarius*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), California horned lark (*Eremophila alpestris actia*), tricolored blackbird (*Agelaius tricolor*), American badger (*Taxidea taxus*), western mastiff bat (*Eumops perotis californicus*), spotted bat (*Euderma maculatum*), and Crotch's bumble bee. All other special-status wildlife species were determined to have low potential to occur within the proposed project site due to lack of suitable habitat or other considerations and are not discussed further.

Table 3-5 Special-Status Wildlife Species Potential to Occur

Common Name *Scientific Name*	Listing Status	Habitat Requirements	Potential for Occurrence
AMPHIBIANS			
Spadefoot Toads (Scaphiopodidae)			
Western spadefoot *Spea hammondii*	FPT CDFW SSC	Mixed woodland, grasslands, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Prefers washes and other sandy areas with patches of brush and rocks. Rain pools or shallow temporary pools that do not contain bullfrogs, fish, or crayfish are necessary for breeding. Perennial plants are a major food source.	High. Suitable habitat is present within the proposed project site. The species has been observed at two locations within the proposed project site (MP 160.16 and MP 168.50). However, spadefoot was not documented on-site during the 2025 biological assessment for the species (California Department of Water Resources 2025b).
REPTILES			
Egg-Laying Snakes (Colubridae)			
San Joaquin coachwhip *Masticophis flagellum ruddocki*	CDFW SSC	Inhabits open, dry, treeless areas with little or no cover, including valley grassland and saltbush scrub. Takes refuge in rodent burrows, under shaded vegetation, and under surface objects.	High. Suitable habitat is present within the proposed project site. Although not observed on-site, this species has been observed along the Aqueduct right-of-way outside of the proposed project site.
BIRDS			
Hawks, Kites, Harriers, & Eagles (Accipitridae)			
Swainson's hawk *Buteo swainsoni*	ST	Found in Great Basin grassland, riparian forest, riparian woodland, and valley and foothill grassland. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannas, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	High. Suitable nesting habitat is present for the species and nest sites have been identified within 0.25 mile of the proposed project site. Suitable foraging areas occur within the Aqueduct right-of-way and surrounding areas.
Northern harrier *Circus hudsonius*	CDFW SSC, USFWS BCC	Found in coastal scrub, Great Basin grassland, marsh and swamp, riparian scrub, valley and foothill grassland, and wetland. Coastal salt and freshwater marsh. Nest and forage in	High. This species has been observed throughout the proposed project site. Annual grassland, agricultural fields, and fallow land provide nesting and foraging habitat for this species.

Table 3-5 Special-Status Wildlife Species Potential to Occur

Common Name *Scientific Name*	Listing Status	Habitat Requirements	Potential for Occurrence
		grasslands, from saltgrass in desert sink to mountain cienegas. Nests on ground in shrubby vegetation, usually at salt marsh edge; nest built of a large mound of sticks in wet areas.	
Falcons (Falconidae)			
Merlin *Falco columbarius*	CDFW WL	Occupies seacoast, tidal estuaries, open woodlands, savannas, edges of grasslands and deserts, farms, and ranches. Clumps of trees or windbreaks are required for roosting in open country.	High. Suitable habitat occurs within 0.25 mile of the proposed project site and the species has been observed using the proposed project site.
True Owls (Strigidae)			
Burrowing owl *Athene cunicularia*	SC, CDFW SSC, USFWS BCC	Inhabits open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Usually nests in old burrows of ground squirrels or other small mammals.	High. Suitable habitat is present within the proposed project site and surrounding areas. Direct observations of the species have not been recorded since 2022. Prior to 2022, nesting was documented at five locations along the right-of-way (MP 158.8, 159.1, 160.2, 162.0, and 170.4).
Shrikes (Laniidae)			
Loggerhead shrike *Lanius ludovicianus*	CDFW SSC	Found in broken woodlands, savanna, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and washes. Prefers open country for hunting with perches for scanning and fairly dense shrubs and brush for nesting.	High. Suitable habitat is present for this species within the proposed project site. The species has been documented using the marginal and low-quality habitats within the proposed project site.
Larks (Alaudidae)			
California horned lark *Eremophila alpestris actia*	CDFW WL	Found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above the treeline. During the winter, this species typically flocks in desert lowlands.	High. Suitable annual grassland habitat is present within the proposed project site and the species has been observed within the proposed project site.

Table 3-5 Special-Status Wildlife Species Potential to Occur

Common Name *Scientific Name*	Listing Status	Habitat Requirements	Potential for Occurrence
Blackbirds (Icteridae)			
Tricolored blackbird *Agelaius tricolor*	ST, CDFW SSC, USFWS BCC	Known to occur in freshwater marshes, swamps, and wetlands. Highly colonial species, most numerous in Central Valley and vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Low (Nesting), Moderate (Foraging). Although sparse marginal nesting habitat for the species occurs on-site, this species has historically been observed nesting adjacent to the proposed project site in 2017 and 2021. Breeding was not observed in 2024, likely resulting from vegetation removal within water district ponds the species was using for nesting. Although this species is unlikely to nest on-site, it could be observed foraging in the area on occasion.
MAMMALS			
Foxes, Wolves, Coyotes (Canidae)			
San Joaquin kit fox *Vulpes macrotis mutica*	FE, ST	Inhabits arid regions in annual grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub. Dens are excavated in open, level areas with loose-textured sandy and loamy soils.	Low. Marginal foraging habitat is present within the proposed project site; however, the species was not detected during presence/absence camera and scent/track station studies conducted within the right-of-way in 2021.
Weasels & Relatives (Mustelidae)			
American badger *Taxidea taxus*	CDFW SSC	Found in a variety of habitats, including alkali marsh, desert wash, Great Basin scrub, marsh and swamp, meadow and seep, Mojavean desert scrub, riparian scrub, riparian woodland, and valley and foothill grassland. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground to dig burrows. Preys on burrowing rodents.	High. Suitable habitat is present within the proposed project site. This species was observed using the right-of-way for foraging during the 2021 camera study.

Table 3-5 Special-Status Wildlife Species Potential to Occur

Common Name *Scientific Name*	Listing Status	Habitat Requirements	Potential for Occurrence
Free-Tailed Bats (Molossidae)			
Western mastiff bat *Eumops perotis californicus*	CDFW SSC	Known to occur in habitat consisting of extensive open areas within dry desert washes, flood plains, chaparral, cismontane oak woodland, coastal scrub, open ponderosa pine forest, and grasslands. Roosts primarily in crevices in rock outcrops and buildings.	Moderate. Suitable roosting and foraging habitat is present within the proposed project site. The Aqueduct may provide a corridor for bats, facilitating movement of various species that roost and/or hibernate in surrounding areas. This species was detected within the proposed project site during acoustic monitoring. Given the time of night that this species was recorded, approximately two hours past sunset, and the scarcity of detection on any other audio files at this site, it is likely that this species was using the Aqueduct for movement.
Evening Bats (Vespertilionidae)			
Spotted bat *Euderma maculatum*	CDFW SSC	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water and along washes. Feeds almost entirely on moths. Needs rock crevices in cliffs or caves for roosting.	Moderate. Suitable roosting and foraging habitat is present within the proposed project site. The Aqueduct may provide a corridor for bats, facilitating movement of various species that roost and/or hibernate in surrounding areas. This species was detected within the proposed project site during acoustic monitoring. Given the time of night that this species was recorded, approximately two hours past sunset, and the scarcity of detection on any other audio files at this site, it is likely that this species was using the Aqueduct for movement.
INSECTS			
Bumble Bees (Bombus)			
Crotch's bumble bee *Bombus crotchii*	SC	Occurs primarily in California. Prefers grassland and scrub area within drier climates. Overwinters in leaf litter and soft soil.	Moderate. The 2025 habitat assessment and surveys resulted in the identification of suitable habitat for nesting and foraging (California Department of Water Resources 2025c).

Table 3-5 Special-Status Wildlife Species Potential to Occur

Common Name *Scientific Name*	Listing Status	Habitat Requirements	Potential for Occurrence
Brush-Footed Butterflies (Nymphalidae)			
Monarch butterfly *Danaus plexippus*	FPT	Live mainly in prairies, meadows, and grasslands. Life cycle depends on the host plant, milkweed.	Low. Although grassland is present, it is surrounded by agriculture and conventional farming practices and lacks milkweed dependent for the species' life cycle. Additionally, there are no occurrences of this species within 3 miles of the proposed project site (California Department of Fish and Wildlife 2024).

Source: Data compiled by the California Department of Water Resources in 2024

Notes: CDFW FP= California Fully Protected; CDFW SSC = California Species of Special Concern; CDFW WL = Watch List (previously SSC) FE = Federally Endangered; FPT = Federally Proposed Threatened; USFWS BCC = Birds of Conservation Concern; ST = State Threatened; SC = State Candidate for Listing.

Nine additional species were identified by the iPaC but were not included in Table 3-5. These species were considered but the proposed project site is absent of critical features for these species, such as cliff sides for nesting, heavily vegetated waterways, or vernal pools for breeding. As a result, these species were determined to have no potential to occur within the proposed project site and are not discussed further.

Critical Habitat for Plant and Wildlife Species

The USFWS defines the term *critical habitat* as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

There is no critical habitat present within or adjacent to the proposed project site. The closest USFWS-designated critical habitat is for the Buena Vista Lake ornate shrew, located approximately 13 miles northeast of the proposed project site. Additionally, proposed critical habitat for the foothill yellow-legged frog is located approximately 15 miles west of the proposed project site.

Jurisdictional Resources

An aquatic resources delineation was conducted on June 22, 23, and 24 and on September 28, 2021 (Appendix C within Appendix B). The delineation and mapping were completed following the protocols described in the *1987 [U.S. Army] Corps of Engineers' Wetland Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (U.S. Army Corps of Engineers 2008).

The aquatic resources delineation did not identify any aquatic resources within the proposed project site.

Raptors and Migratory and Nesting Birds

The proposed project site supports a diversity of raptors and migratory birds. Red-tailed hawks (*Buteo jamaicensis*) and common ravens (*Corvus corax*) are commonly observed using nearby utility poles for nesting locations. In 2021, one red-tailed hawk nest was observed just over 500 feet from the proposed project site at MP 169.25. Cliff swallows (*Petrochelidon pyrrhonota*) are known to nest on bridges and check structures. Nesting has been observed at structures located at MP 161.6, 164.35, 164.7, 167.35, 169.4, and 170.4. Greater roadrunner (*Geococcyx californianus*) is often observed on-site and habitat to support nesting, foraging, and other life-history activities occurs within the proposed project site.

Wildlife Corridors

Wildlife corridors, or habitat corridors, are natural or semi-natural lands (e.g., rural, agricultural, ruderal, or barren) that connect populations of wildlife and larger habitat areas across the landscape. While resources such as a dry culvert under a roadway or bridge may be used strictly for travel purposes, wildlife corridors can contain natural vegetation and habitats that support foraging, roosting, and breeding activities as well.

Wildlife movement corridors are critical for the long-term health of ecological systems for several reasons. Corridors provide connections that provide wildlife with access to water, food, and cover sources, spatially linking these three resources with wildlife in different areas. In addition, wildlife movement between habitat areas provides for genetic exchange between populations of wildlife in otherwise separated natural areas. This is especially critical for small populations that are subject to loss of variability from effects of inbreeding.

Habitat connectivity in relation to the Aqueduct in the San Luis Canal can be considered in three main aspects—north to south along the Aqueduct, east to west across the Aqueduct, and the open water environment within the Aqueduct.

- **North to South.** The Aqueduct runs generally north to south along California's Central Valley and can be considered a link between habitats dispersed throughout the Central Valley. The north to south connection along both sides of the Aqueduct is open and could provide temporary habitat for traveling wildlife.
- **East to West.** The habitat connectivity from east to west is less open due to the aquatic nature of the Aqueduct. Periodic bridges, overchutes, and utility crossings over the canal provide terrestrial passage from one side to the other. Structures and crossings may also be used for bird or bat nesting and roosting.
- **Open Water.** Waterfowl and coastal bird species often use the Aqueduct as a resting area during the spring and fall migratory periods. Bats and birds forage for insects over the open water.

Discussion

Issue IV.a

Construction

Construction activities associated with the proposed project could result in permanent and temporary direct impacts to suitable habitat for special-status species as outlined in **Table 3-6** and detailed below.

Table 3-6 Potential Direct Impacts to Special-Status Species Habitat

Impact Type	Fiddleneck-Filaree Fields (acres)	Red Brome or Mediterranean Grass Grassland (acres)	Upland Mustards and Other Ruderal Forbs (acres)	Bare Land (Disturbed) (acres)	Total (acres)
Western Spadefoot					
Temporary	1.96	7.14	78.93	5.52	93.55
San Joaquin Coachwhip					
Temporary	1.96	7.14	--	78.93	88.03
Burrowing Owl					
Permanent (burrows and burrow habitat)	--	--	--	5.52	5.52
Temporary (foraging)	1.96	7.14	78.93	--	88.03
Swainson's Hawk					
Temporary (foraging)	1.96	7.14	78.93	5.52	93.55
Tricolored Blackbird					
Temporary (foraging)	1.96	7.14	78.93	5.52	93.55
American Badger					
Temporary (denning and foraging)	1.96	7.14	78.93	5.52	93.55
Special-Status Bats (Spotted Bat and Western Mastiff Bat)					
Temporary (foraging)	1.96	7.14	78.93	5.52	93.55
Crotch's Bumble Bee					
Temporary (foraging)	1.96	7.14	78.93	5.52	93.55

Table 3-6 Potential Direct Impacts to Special-Status Species Habitat

Impact Type	Fiddleneck-Filaree Fields (acres)	Red Brome or Mediterranean Grass Grassland (acres)	Upland Mustards and Other Ruderal Forbs (acres)	Bare Land (Disturbed) (acres)	Total (acres)
Total Project Impacts	**1.96**	**7.14**	**78.93**	**5.52**	**93.55**
Total Surrounding Study Area	***7.29***	***137.36***	***0.00***	***132.93***	***277.58***

Source: Data compiled by Environmental Science Associates in 2025

Note: Several species share the same habitat requirements. Therefore, impact acreages per habitat type may match for multiple species.

a. The total surrounding study area is the Aqueduct right-of-way in the vicinity of Pools 20 and 21, excluding the proposed project site components and the open water portion of the Aqueduct.

Special-Status Plants

As described above, there are no special-status plants with a moderate or high potential to occur or that have been observed within the proposed project site. Therefore, construction of the proposed project would have **no impact** on any special-status plants identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

Special-Status Amphibians

One special-status amphibian, western spadefoot (federally proposed threatened, CDFW SSC), has a high potential to occur in the fiddleneck-filaree fields, red brome or Mediterranean grass grassland, upland mustards and other ruderal forbs, and bare land (disturbed) habitats within the proposed project site. Spadefoot larvae and tadpoles have been identified at two locations (MP 160.16 and MP 168.50) within temporary water sources adjacent to the access roads in the proposed project site.

If present within the proposed project site, construction activities such as staging, mobilization, grading, vegetation clearing, and ground disturbance may result in direct injury or mortality to western spadefoot through crushing from equipment, vehicles, and foot traffic within breeding pools and upland burrow sites. This includes potential loss of occupied habitat resulting from construction activities. In addition, during construction activities, increased noise, artificial light, increased human presence, introduction of nonnative weed species, and increased sedimentation within breeding pools may temporarily result in a loss of suitable habitat for special-status amphibian species. Therefore, impacts to western spadefoot from construction of the proposed project would be potentially significant.

To avoid or minimize construction-related impacts to western spadefoot, DWR would implement **Mitigation Measure BIO-1** (Western Spadefoot) to reduce impacts to western spadefoot by conducting pre-construction surveys during periods when the species is detectable and implementing any avoidance, minimization, and compensatory measures required to mitigate for

impacts to the species, if present. Additionally, DWR would implement **Mitigation Measure BIO-2** (Biological Monitor), requiring a biological monitor on-site during all ground-disturbing and vegetation removal activities to conduct clearance surveys and monitor ground-disturbing activities and exclusion buffers to help minimize and fully mitigate or avoid the incidental take of individual special-status animals through relocation and to minimize disturbance of special-status species habitat. With **Mitigation Measure BIO-3** (Worker Environmental Awareness Program [WEAP]), DWR would require that all personnel undergo WEAP training prior to the start of construction activities to reduce potential impacts by informing crews about the biology and general behavior of special-status species with potential to occur on-site; providing information about the distribution and habitat needs of the special-status species; describing the sensitivity of the special-status species to human activities; providing the species' status pursuant to CESA, including legal protection, recovery efforts, penalties for violations and project-specific protective measures; and providing biological monitor contact information so they can be contacted if the species enters the proposed project site during construction;. DWR would also implement **Mitigation Measure BIO-4** (Invasive Plant Species Control Measures), providing measures that must be implemented to reduce impacts to native plants; **Mitigation Measure BIO-5** (General Construction Best Management Practices), providing measures to reduce vehicle speeds, erosion control, avoid potential wildlife entrapment, require trash removal, dust control, delineate work areas, restrict nighttime activities, and provide lighting requirements; **Mitigation Measure BIO-6** (Revegetation Plan) requiring the preparation of a revegetation plan to ensure that temporary impacts are restored to pre-construction conditions; and **Mitigation Measure BIO-7** (Impacts to Federally and State-Listed Species Habitat) requiring compensatory habitat replacement for permanent impacts to federally and State-listed species habitat. With implementation of these mitigation measures, impacts to special-status amphibians would be reduced to **less than significant with mitigation incorporated**.

Special-Status Reptiles

One special-status reptile, San Joaquin coachwhip (CDFW SSC), has a high potential to occur within the proposed project site. Although this species has not been documented within the proposed project site, ancillary observations of this species have been documented along the Aqueduct right-of-way and habitat for this species (upland annual grassland and alkali desert scrub habitats) is present within the proposed project site.

Construction activities associated with the proposed project could result in direct injury or mortality to San Joaquin coachwhip, if present within the proposed project site. The project may also result in temporary removal of suitable habitat for the species, including fiddleneck-filaree fields, red brome or Mediterranean grass grassland, and upland mustards and other ruderal forbs. In addition, during construction activities increased noise, artificial light, increased human presence, or introduction of invasive non-native weed species may temporarily result in a loss of suitable habitat for San Joaquin coachwhip within the proposed project site. Therefore, impacts to San Joaquin coachwhip from construction of the proposed project would be potentially significant.

In order to avoid or minimize construction-related impacts to special-status reptiles, DWR would implement **Mitigation Measure BIO-2** (Biological Monitor), requiring a biological monitor on-site

during all ground-disturbing and vegetation removal activities; **Mitigation Measure BIO-3** (WEAP), DWR would conduct a WEAP prior to the start of construction to inform crews about special-status species with potential to occur on-site and avoidance and minimization measures to implement during construction; **Mitigation Measure BIO-4** (Invasive Plant Species Control Measures), including measures to reduce potential introduction of invasive plants from occurring on-site; **Mitigation Measure BIO-5** (General Construction Best Management Practices), providing general construction recommendations to reduce impacts to special-status species including reducing vehicle speeds, dust control, nighttime work requirements, artificial lighting restrictions, and noise limitations; and **Mitigation Measure BIO-6** (Revegetation Plan), requiring the development of a native planting palette, would further reduce potential impacts to special-status reptiles such as San Joaquin coachwhip. With implementation of these mitigation measures, impacts to special-status reptiles would be reduced to **less than significant with mitigation incorporated**.

Special-Status Birds

Seven special-status bird species, burrowing owl (candidate for State listing, CDFW SSC, USFWS bird of conservation concern), California horned lark (CDFW WL), loggerhead shrike (CDFW SSC), merlin (CDFW WL), northern harrier (CDFW SSC), Swainson's hawk (ST), and tricolored blackbird (ST, CDFW SSC, USFWS bird of conservation concern) and have a moderate or high potential to occur within the proposed project site. Three of these special-status bird species (burrowing owl, Swainson's hawk, and tricolored blackbird) are State and/or federally listed and are discussed in detail below.

Burrowing Owl

Although only marginally suitable habitat for burrowing owl is present along the adjacent embankments bordering the Aqueduct roads, five nesting sites have been identified in the vicinity of the proposed project site. Thus, this species has a high potential to occur within the upland annual grassland and disturbed habitats throughout the proposed project site. If owls are present at the time of construction, construction activities have the potential to result in direct mortality to burrowing owl including potential vehicle strikes, if the species is present breeding or foraging within the proposed work areas during project activities. The proposed project may result in the permanent removal of suitable burrows and burrow habitat along the Aqueduct embankments within bare land (disturbed) habitat. The proposed project may also result in temporary removal of suitable foraging habitat for the species, including fiddleneck-filaree fields, red brome or Mediterranean grass grassland, and upland mustards and other ruderal forbs; construction activities would last approximately 8 weeks per linear mile. Additionally, construction activities may result in indirect impacts or the temporary loss of suitable habitat for burrowing owl within the proposed project site due to increased noise, artificial light, increased human presence, ground vibration, or introduction of non-native weed species. Therefore, impacts to burrowing owl from construction of the proposed project would be potentially significant.

The implementation of **Mitigation Measure BIO-8** (Burrowing Owl), requiring focused pre-construction burrowing owl surveys and the implementation of avoidance buffers, agency

consultation, exclusion plans, and consultation for unavoidable impacts would reduce potential impacts to burrowing owl. Additionally, implementation of **Mitigation Measure BIO-2** (Biological Monitor), **Mitigation Measure BIO-3** (WEAP), **Mitigation Measure BIO-4** (Invasive Plant Species Control Measures), and **Mitigation Measure BIO-5** (General Construction Best Management Practices), would further reduce direct and/or indirect impacts to burrowing owl by requiring a biological monitor during ground-disturbing activities and periodic checks, providing environmental training to all personnel, implementing invasive plant species control measures, and using best management practices to control vehicle speeds, delineate work areas, manage trash, prevent wildlife entrapment, noise requirements, restrict nighttime activities, and artificial lighting requirements. The implementation of **Mitigation Measure BIO-6** (Revegetation Plan) and **Mitigation Measure BIO-7** (Impacts to Federally and State-Listed Species Habitat) would reduce impacts to species habitat in the proposed project site by requiring the restoration of temporarily impacted areas to pre-construction conditions and/or compensatory habitat replacement for permanent impacts to federally and State-listed species habitat. With implementation of these mitigation measures, impacts to burrowing owl would be reduced to **less than significant with mitigation incorporated**.

Swainson's Hawk

Active Swainson's hawk nests were observed during protocol-level surveys conducted in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology* (2000), and the proposed project site provides suitable habitat for this species to nest and forage. Two potential Swainson's hawk nests were identified within 0.25 mile of the proposed project site: one active nest located at MP 169.8 was identified in 2021 and another active nest located at MP 169.0 was identified in 2024. In addition, extensive nesting has been observed within the Westside Detention basin, including at Gale Avenue approximately 0.3 mile north of the proposed project site, which is adjacent to the access route. The Aqueduct right-of-way also offers foraging habitat for Swainson's hawk, which has been observed.

The annual grassland and scattered trees throughout the proposed project site provide suitable nesting and foraging habitat for this species. Construction activities have the potential to result in the loss of nesting success, take of individuals due to vehicle strikes, and the temporary removal of foraging habitat within the proposed work areas (i.e., staging and borrow areas). The project may result in temporary direct impacts to suitable foraging habitat for the species, including bare land (disturbed), fiddleneck-filaree fields, red brome or Mediterranean grass grassland, and upland mustards and other ruderal forbs. In addition, increased noise, human presence, and the introduction of non-native weed species during construction activities may temporarily result in indirect impacts to Swainson's hawk due to the proposed project. Therefore, impacts to Swainson's hawk from construction of the proposed project would be potentially significant.

The implementation of **Mitigation Measure BIO-9** (Swainson's Hawk), requiring focused presence/absence Swainson's hawk surveys prior to construction during the nesting season and the implementation of avoidance buffers, would reduce potential impacts to Swainson's hawk. Additionally, implementation of **Mitigation Measure BIO-2** (Biological Monitor), **Mitigation Measure**

BIO-3 (WEAP), **Mitigation Measure BIO-4** (Invasive Plant Species Control Measures), and **Mitigation Measure BIO-5** (General Construction Best Management Practices), would further reduce direct and/or indirect impacts to Swainson's hawk by requiring a biological monitor during ground-disturbing activities and periodic checks; providing WEAP training to all personnel; implementing invasive plant species control measures; and using best management practices to control vehicle speeds, manage trash, prevent wildlife entrapment, delineate work areas, and reduce noise. The implementation of **Mitigation Measure BIO-6** (Revegetation Plan) and **Mitigation Measure BIO-7** (Impacts to Federally and State-Listed Species Habitat) would reduce impacts to species habitat in the proposed project site by requiring the restoration of temporarily impacted areas to pre-construction conditions and/or compensatory habitat replacement for permanent impacts to federally and State-listed species habitat. With implementation of these mitigation measures, impacts to Swainson's hawk would be reduced to **less than significant with mitigation incorporated**.

Tricolored Blackbird

Tricolored blackbirds typically nest near open fresh water in dense, tall vegetation like cattails (*Typha* spp.), tule (*Schoenoplectus* sp.), willows (*Salix* spp.), blackberry (*Rubus* spp.), and wild rose (*Rosa* spp.); however, they will also use standing crops like grain or silage for nesting. In 2017 and 2021, tricolored blackbirds were observed nesting adjacent to the proposed project site within a water district pond. However, suitable nesting vegetation was removed in 2024, and no tricolored blackbirds were observed following vegetation removal. Consequently, the potential for nesting within the proposed project site is low, but there is a moderate potential for this species to occasionally forage or occur onsite.

Suitable nesting habitat for tricolored blackbird is limited within the proposed project site and is not planned for removal as a direct or indirect result of the proposed project. Therefore, direct impacts to the species resulting from construction are expected to be less than significant. Temporary direct impacts to the species' foraging habitat could result from removal of suitable foraging habitat for the species, including bare land (disturbed), fiddleneck-filaree fields, red brome or Mediterranean grass grassland, and upland mustards and other ruderal forbs, within the proposed work areas. Additionally, indirect impacts during construction activities such as increased noise, human presence, artificial lighting, and the introduction of non-native weed species may temporarily affect tricolored blackbirds. Therefore, impacts to tricolored blackbird foraging habitat from construction of the proposed project would be potentially significant.

Impacts to foraging tricolored blackbird would be reduced with the implementation of several mitigation measures. Incorporation of **Mitigation Measure BIO-10** (Tricolored Blackbird), requiring protocol surveys and the implementation of avoidance buffers, exclusion plans, and consultation for unavoidable impacts would reduce potential impacts to tricolored blackbird. Additionally, incorporation of **Mitigation Measure BIO-2** (Biological Monitor), requiring a biological monitor during ground-disturbing activities and periodic checks; **Mitigation Measure BIO-3** (WEAP), providing environmental training to all personnel; **Mitigation Measure BIO-4** (Invasive Plant Species Control Measures), implementing invasive plant species control measures; and **Mitigation Measure BIO-5**

(General Construction Best Management Practices), using best management practices to control vehicle speeds, manage trash, reduce noise, delineate work areas, restrict nighttime work, and nighttime lighting restrictions, would reduce potential direct and indirect impacts due to project activities. Furthermore, the implementation of **Mitigation Measure BIO-6** (Revegetation Plan) and **Mitigation Measure BIO-7** (Impacts to Federally and State-Listed Species Habitat) would reduce impacts to species habitat in the proposed project site by requiring the restoration of temporarily impacted areas to pre-construction conditions and/or compensatory habitat replacement for permanent impacts to federally and State-listed species habitat. With implementation of these mitigation measures, impacts to tricolored blackbird would be reduced to **less than significant with mitigation incorporated**.

Other Migratory Birds and Raptors

In addition to the special-status bird species discussed previously, the proposed project site supports a diversity of other migratory birds, including special-status non-listed bird species, protected under the federal Migratory Bird Treaty Act of 1918 and California Fish and Game Code Sections 3503.5, 3505, and 3511. Special-status non-listed birds (including raptors) with potential to nest on-site include California horned lark, loggerhead shrike, merlin, and northern harrier, which have been observed using the proposed project site. Nesting migratory birds and raptors have the potential to nest on bridges, structures, power poles, bare ground, and vegetation (including trees and shrubs) throughout the proposed project site. Potential impacts to nesting birds may occur if project activities are conducted during the active nesting season (February 15 through August 31 for songbirds, and as early as January 15 for raptors).

Construction activities associated with the proposed project could result in direct injury or mortality to special-status birds, if present within the proposed project site. These activities could cause direct mortality to adults sitting on the nests, direct mortality of eggs or young, adult abandonment of nests, or reproductive failure. In addition, during construction activities increased noise, artificial light, increased human presence, or introduction of non-native weed species may temporarily result in a loss of suitable habitat for special-status birds within the proposed project site. Therefore, impacts to nesting migratory birds and raptors from construction of the proposed project would be potentially significant.

The implementation of **Mitigation Measure BIO-11** (Nesting Birds), requiring a nesting bird survey prior to construction during the nesting season, along with the implementation of avoidance buffers and agency consultation, would reduce potential impacts to protected nesting birds. Additionally, impacts to nesting birds would be reduced with the implementation of several mitigation measures. These include **Mitigation Measure BIO-2** (Biological Monitor), requiring a biological monitor during ground-disturbing activities and periodic checks; **Mitigation Measure BIO-3** (WEAP), providing WEAP training to all personnel; **Mitigation Measure BIO-4** (Invasive Plant Species Control Measures), implementing invasive plant species control measures; and **Mitigation Measure BIO-5** (General Construction Best Management Practices), using best management practices to control vehicle speeds, manage trash, delineate work areas, reduce noise, and restrict nighttime activities and lighting, would reduce potential direct and indirect impacts due to project activities. With

implementation of these mitigation measures, impacts on nesting birds and raptors and special-status birds would be reduced to **less than significant with mitigation incorporated**.

Special-status non-listed bird species, such as California horned lark, loggerhead shrike, merlin, and northern harrier have the potential to occasionally forage within the open annual grassland and agricultural areas throughout the proposed project site and surrounding areas. Although suitable foraging habitat is present, direct construction impacts would be confined to minimal and concentrated areas, primarily within previously disturbed portions of the Aqueduct and adjacent work areas and will be restored to its pre-existing condition following construction. Furthermore, ample foraging habitat would remain available in the areas surrounding the project both during and after construction, minimizing the overall impact on the species. As such, impacts on special-status non-listed bird foraging habitat would be **less than significant**.

Special-Status Mammals

One special-status mammal, American badger (CDFW SSC), has a high potential to occur within the proposed project site. One potential badger den was identified near MP 163.26. Therefore, this species has a high potential to occur within the proposed project site. In addition, two special-status bat species, spotted bat (CDFW SSC) and western mastiff bat (CDFW SSC) were detected during bat surveys conducted in 2021. However, no visual evidence of roosting was observed such as urine stains or piles of guano. Therefore, these special-status bats are determined to have a moderate potential to occur within the proposed project site.

Construction activities associated with the proposed project could result in direct injury or mortality to special-status mammal species, if present within the proposed project site. No impacts to suitable American badger dens and no impact to potentially suitable roosting habitat for bats would result from this project. The proposed project may result in the temporary loss of suitable denning and foraging habitat for American badger and special-status bat species, including bare land (disturbed), fiddleneck-filaree fields, red brome or Mediterranean grass grassland, and upland mustards and other ruderal forbs. In addition, during construction activities increased noise, artificial light, increased human presence, and/or introduction of nonnative weed species may temporarily result in a loss of suitable habitat for special-status mammals within the proposed project site. Therefore, impacts to special-status mammals from construction of the proposed project would be potentially significant.

The implementation of **Mitigation Measure BIO-12** (American Badger), requiring a pre-construction survey for dens prior to ground disturbance, along with the implementation of avoidance buffers, would reduce potential impacts to American badger. The implementation of **Mitigation Measure BIO-13** (Special-Status Bats), requiring a bat roosting habitat assessment prior to construction, along with preparation of a Bat Exclusion Plan if roosting special-status bat species are identified, would reduce potential impacts to special-status bat species. Additionally, impacts on denning and foraging American badger and roosting and foraging bats would be reduced with the implementation of several mitigation measures. These include **Mitigation Measure BIO-2** (Biological Monitor), requiring a biological monitor during ground-disturbing activities and periodic checks; **Mitigation**

Measure BIO-3 (WEAP), providing environmental training to all personnel; **Mitigation Measure BIO-4** (Invasive Plant Species Control Measures), implementing invasive plant species control measures; and **Mitigation Measure BIO-5** (General Construction Best Management Practices), using best management practices to control vehicle speeds, manage trash, excavation inspections, delineate work areas, reduce noise, restrict nighttime activities, nighttime lighting restrictions, and wildlife protection measures, would reduce potential direct and/or indirect impacts due to project activities. With implantation of these mitigation measures, impacts on special-status mammals would be reduced to **less than significant with mitigation incorporated**.

Special-Status Invertebrates

One special-status invertebrate species, Crotch's bumble bee, was determined to have a moderate potential to occur within the proposed project site following the 2025 habitat assessment and surveys for the species within and surrounding the proposed project site (California Department of Water Resources 2025b). The 2025 habitat assessment and surveys resulted in the identification of suitable habitat for nesting and foraging. The site either contains continual coverage of flower nectar sources throughout the active period or there are flowers that are continuously in bloom in the lands directly adjacent to the site. There is the potential for flowers to bloom continuously within 3 miles of the site. However, the 2025 habitat assessment and surveys resulted in no visual evidence of the species. Therefore, Crotch's bumble bee is determined to have a moderate potential to occur within the proposed project site.

Construction activities associated with the proposed project could result in direct injury or mortality to Crotch's bumble bee, if present within the proposed project site. The proposed project may result in the temporary loss of suitable foraging habitat including bare land (disturbed), fiddleneck-filaree fields, red brome or Mediterranean grass grassland, and upland mustards and other ruderal forbs. In addition, during construction activities increased noise, increased dust, increased human presence, and/or introduction of nonnative weed species may temporarily result in a loss of suitable habitat for Crotch's bumble bee within the proposed project site. Therefore, impacts on Crotch's bumble bee from construction of the proposed project could be potentially significant.

The implementation of **Mitigation Measure BIO-14** (Crotch's Bumble Bee), requiring pre-activity surveys prior to ground-disturbing activities, seasonal work window avoidance, pre-activity nesting surveys if ground-disturbing activities will occur during the nesting season, nest avoidance, and consultation for unavoidable impacts would reduce potential impacts to the species. Additionally, impacts on Crotch's bumble bee would be reduced with the implementation of several mitigation measures. These include **Mitigation Measure BIO-2** (Biological Monitor), requiring a biological monitor during ground-disturbing activities and periodic checks; **Mitigation Measure BIO-3** (WEAP), providing environmental training to all personnel; **Mitigation Measure BIO-4** (Invasive Plant Species Control Measures), implementing invasive plant species control measures; and **Mitigation Measure BIO-5** (General Construction Best Management Practices), using best management practices to control vehicle speeds, delineate work areas, reduce noise, hazardous material storage requirements, reduce dust, and reduce trash, which would reduce potential direct and indirect

impacts due to project activities. With implantation of these mitigation measures, impacts on Crotch's bumble bee would be reduced to **less than significant with mitigation incorporated**.

Operation

Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules. Therefore, operation of the proposed project would have a **less-than-significant impact** on special-status plant and wildlife species, and no mitigation would be required.

Impact Conclusion

As discussed above, **Mitigation Measures BIO-2 through BIO-6** would reduce impacts to special-status species by requiring biological monitors, implementation of a WEAP program, invasive species control measures, construction BMPs, and a post-construction revegetation plan, thereby reducing impacts from construction activities. In addition, **Mitigation Measure BIO-7** would protect State and federally endangered species through compensatory mitigation, in coordination with CDFW and USFWS, should impacts occur.

Additionally, implementation of **Mitigation Measure BIO-1** would reduce impacts on special-status amphibians through specific measures for western spadefoot which require the designation and protection of Environmentally Sensitive Areas around western spadefoot occurrences using high-visibility fencing, especially during the breeding season, and mandatory weather monitoring to prevent harm during rainfall events. **Mitigation Measures BIO-8 through BIO-11** would reduce impacts on special-status birds through specific measures for burrowing owl, Swainson's hawk, tricolored blackbird, and nesting birds by requiring pre-construction surveys, establishment of species-specific no-disturbance buffers, and coordination with wildlife agencies to avoid or minimize impacts during critical breeding or nesting periods. Further, impacts to special-status mammals would be reduced to a less-than-significant level through implementation of **Mitigation Measures BIO-12 and BIO-13**, which require pre-construction surveys by a qualified biologist to identify active American badger dens and special-status bat roosts (including day and maternity roosts) within the proposed project site, and the implementation of appropriate avoidance measures such as establishing protective buffers and, if necessary, using passive exclusion methods to prevent direct mortality or disturbance to these sensitive species during ground-disturbing activities. Finally, impacts to special-status invertebrates would be reduced to a less-than-significant level through implementation of **Mitigation Measure BIO-14**, which protects Crotch's bumble bee by requiring pre-activity surveys prior to ground-disturbing activities, seasonal work window avoidance, pre-activity nesting surveys if ground-disturbing activities will occur during the nesting season, nest avoidance, and consultation for unavoidable impacts.

These mitigation measures reduce impacts to less than significant by ensuring that sensitive species and habitats are identified, avoided, or protected through surveys, monitoring, and buffers. Coordination with biologists and agencies ensures proper implementation and compliance with environmental regulations. Therefore, impacts to candidate, sensitive, or special-status species would be **less than significant with mitigation incorporated**.

Issue IV.b

Construction

As described above, one of the vegetation communities/land cover types present on the proposed project site is listed as a sensitive or rare natural community, tar plant fields. No permanent direct impacts to sensitive natural communities would result from the proposed project. However, the introduction of invasive non-native weed species during construction activities may result in a loss of suitable habitat for the tar plant fields within the proposed project site. Therefore, impacts to the tar plant fields sensitive natural community from construction of the proposed project would be potentially significant. The implementation of **Mitigation Measure BIO-2** (Biological Monitor), requiring a biological monitor during ground-disturbing activities and periodic checks; **Mitigation Measure BIO-3** (WEAP), providing environmental training to all personnel; **Mitigation Measure BIO-4** (Invasive Plant Species Control Measures), implementing invasive plant control measures; and **Mitigation Measure BIO-5** (General Construction Best Management Practices), using best management practices to control vehicle speeds, manage trash, reduce dust, and avoid impacts to drainage features, would reduce potential direct and/or indirect impacts due to project activities. With implementation of these mitigation measures, impacts on sensitive natural communities would be reduced to **less than significant with mitigation incorporated**.

Operation

Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules. Therefore, operation of the proposed project would have a **less-than-significant impact** on sensitive or rare natural communities and no mitigation would be required.

Impact Conclusion

Construction of the proposed project could result in potentially significant impacts to the sensitive tar plant fields community due to the possible introduction of invasive weeds; however, implementation of **Mitigation Measures BIO-2 through BIO-5**, including biological monitoring, environmental training, invasive species control, and best management practices, would reduce impacts to less than significant by preventing physical disturbance, controlling invasive species, minimizing habitat degradation, and ensuring that construction crews are trained to avoid harm to the sensitive tar plant fields community. Therefore, impacts would be **less than significant with mitigation incorporated**.

Issue IV.c

As described above, the aquatic resources delineation did not identify any aquatic resources within the proposed project site. Therefore, construction and operation of the proposed project would have **no impact** on State or federally protected wetlands.

Issue IV.d

Wildlife Movement

Terrestrial wildlife species or migratory birds may temporarily avoid foraging or wading in the Aqueduct immediately adjacent to the proposed project site during construction activities due to increased noise, artificial light, and increased human presence. However, construction activities associated with the proposed project would not prevent terrestrial or avian species from using other portions of the Aqueduct for these purposes. Construction of the proposed project would not impede wildlife movement throughout the region, nor would it prevent terrestrial wildlife or migratory birds from using the Aqueduct. Following construction, operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules. Implementation of **Mitigation Measure BIO-5** (General Construction Best Management Practices) requires speed limits, off-road vehicle limitations, trash abatement, minimizing the work area footprint and duration, dush control, wildlife protection, nighttime lighting restrictions, noise restrictions, and species injury/mortality reporting. Therefore, construction and operation of the proposed project would have a **less-than-significant impact** on local or regional wildlife movement.

Nesting Birds and Native Wildlife Nursery Sites

Construction

Native resident and migratory bird species protected under the Migratory Bird Treaty Act and the California Fish and Game Code Section 3500 may nest within and near the proposed work areas. Cliff swallows are known to nest on the bridges and check structures in the area of the proposed project site, while common ravens often nest on power poles, bridges, and structures in the area of the proposed project site. Other migratory birds and raptors, including northern harrier, loggerhead shrike, California horned lark, and merlin have been observed and may also nest within the proposed project site.

Potential impacts on nesting birds may occur during construction that overlaps with the general avian nesting season (i.e., from February 15 to September 1 for songbirds, January 15 to August 31 for raptors). Impacts may include direct and indirect impacts to individuals, eggs, or nests due to disturbance from human activities and construction noise and vibration, as well as habitat loss. Impacts to nesting birds would be potentially significant. Therefore, implementation of **Mitigation Measure BIO-11** (Nesting Birds), requiring a nesting bird survey prior to construction during the nesting season and the implementation of avoidance buffers and agency consultation, would reduce potential impacts to protected nesting birds. Additionally, implementation of **Mitigation Measure BIO-5** (General Construction Best Management Practices), requiring construction activities to be conducted during the day only and not at night (i.e., between dusk and dawn) and nighttime lighting to be shielded and directed downwards to minimize light spillover or glare, would reduce potential indirect impacts due to project activities. With implementation of this mitigation measure, impacts to

nesting birds during construction would be reduced to **less than significant with mitigation incorporated**.

Operation

Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules. Therefore, operation of the proposed project would have a **less-than-significant impact** on migratory birds.

Impact Conclusion

Although construction activities may cause temporary avoidance of the immediate project area by terrestrial wildlife and migratory birds due to increased noise, lighting, and human presence, these impacts would be short-term and localized and would not impede regional wildlife movement or use of the Aqueduct. Potentially significant impacts to nesting birds during the breeding season would be avoided or minimized through pre-construction surveys, establishment of protective buffers, and coordination with regulatory agencies as required by **Mitigation Measure BIO-11**. Additionally, limiting construction to daylight hours and minimizing light spillover through shielding and directional lighting under **Mitigation Measure BIO-5** would further reduce indirect effects. Therefore, the project would not substantially interfere with wildlife movement or nesting activities, and overall impacts would be **less than significant with mitigation incorporated**.

Issue IV.e

To the extent feasible, implementation of the proposed project would comply with applicable adopted county ordinances protecting biological resources; however, State agencies such as DWR are not subject to local biological ordinances. Therefore, **no impact** would occur.

Issue IV.f

The proposed project site is located within the proposed Plan Area for the Aera Energy Southwest San Joaquin Valley Habitat Conservation Plan and Natural Community Conservation Plan in preparation. These documents have not yet been adopted and are be applicable to the proposed project. No other proposed or existing Habitat Conservation Plan or Natural Community Conservation Plan is applicable to the proposed project site; therefore, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan and there would be **no impact**.

Mitigation Measures

Mitigation Measure BIO-1: Western Spadefoot.

Monitor the National Weather Service 72-hour forecast for the site. If a 70 percent or greater chance of rainfall is predicted within 24 hours of work, the qualified biologist shall survey the site before activities begin each day rain is forecast in order to survey for western spadefoots. If precipitation begins during activities, the qualified biologist(s) shall remain at

the site for the duration of the rain event in order for activities to continue. If rain exceeds ½ inch during a 24-hour period, all activities shall cease until it is no longer raining and no further rain is forecast.

Mitigation Measure BIO-2: Biological Monitor. DWR shall retain a qualified biological monitor(s) with relevant experience with biological resources and regulations. The qualified biologist(s) shall be on-site during all ground-disturbing and vegetation removal activities. The qualified biologist(s) shall conduct daily clearance surveys of all equipment, vehicles, and stockpiled materials at the beginning of each day and regularly throughout the workday, and during ground-disturbing activities. The qualified biologist(s) shall also monitor any implemented exclusion buffers for work occurring near sensitive biological resources weekly or as needed, and check potential, atypical, and known burrows/burrow complexes/dens every two weeks while construction activities are occurring within suitable habitat for special-status species. The qualified biologist(s) shall recommend appropriate setback buffers for protection of sensitive biological resources, where necessary, and shall have the authority to temporarily stop work if special-status species are observed that may be impacted by construction activities.

Mitigation Measure BIO-3: Worker Environmental Awareness Program (WEAP). A qualified biologist shall conduct pre-construction WEAP training for all personnel working at the construction site. The training will include a review of environmental laws, regulations, and resource agency permit requirements that must be followed. Additional topics that will be covered include special-status species and protection measures, site contamination prevention, spill prevention, emergency response, best management practices (BMPs), and appropriate work practices. The WEAP training will be provided to all workers prior to construction and environmental updates will be provided as applicable. A list of employees who attend the training sessions will be maintained by DWR.

Mitigation Measure BIO-4: Invasive Plant Species Control Measures. Construction activities shall be conducted in a manner that prevents the introduction, transfer, and spread of invasive species, including plants, animals, and microbes (e.g., algae, fungi, parasites, and bacteria), from one work area to another. Prevention best practices and guidelines for controlling the spread of invasive plants can be found on the California Invasive Plant Council's website. DWR shall require construction contractors to ensure that equipment is free of invasive plant seeds, propagules, and any other material which may contain them (e.g., soil). For purposes of this mitigation measure, invasive plant species shall include all species with a Cal-IPC rating of moderate or high. Prior to entering the work areas, equipment shall be inspected to confirm it is free of mud, dirt, and debris. For larger work areas that would be accessed via non-paved roads, tire track stations shall be installed at the work area entrances and exits, where appropriate. Staging areas and access routes shall avoid weed infestations, and infestations within the work area(s) shall be flagged and avoided to the maximum extent feasible. Only certified weed-free materials (e.g., fiber rolls and straw) shall be used during construction.

Mitigation Measure BIO-5: General Construction Best Management Practices. DWR shall require construction contractors to adhere to the following general construction best management practices during construction of the proposed project:

- *Speed Limits.* Vehicles travelling within the project site will not exceed a speed limit of 35 miles per hour on primary or paved roads, except on county roads and highways, and 20 miles per hour on gravel or unpaved roads. Emergency vehicles are exempt from these restrictions in emergency situations.
- *Vehicle Parking, Equipment Staging, and Stockpiling.* Vehicle parking, equipment staging, and stockpiling will be limited to established roads, paved areas, and previously disturbed areas to the extent practicable. BMPs, such as silt fences, erosion control mats, and biodegradable weed-and-rice-free wattles, will be implemented around staging and stockpile locations to reduce runoff into waterways and suitable habitat for special-status species.
- *Off-Road Vehicles.* Off-road-vehicle travel may be necessary to access infrastructure in limited areas of the project site. Off-road-vehicle travel will be limited to the extent practicable. If necessary, vehicles will be inspected and dirt/mud will be cleaned prior to driving into off-road work locations to prevent the spread of noxious weeds. In addition, any vehicles traveling off-road will avoid wetlands and waterways.
- *Erosion Control.* The project will be conducted in a manner to stabilize soils and minimize erosion to the greatest extent possible. Upland soils exposed by the project will be seeded and stabilized using erosion control fabric or hydroseeding. Erosion control measures and BMPs, such as silt fences, natural fiber mats, geotextile fabrics, jute, and biodegradable weed-and-rice-free wattles, will be implemented to reduce runoff from work areas into waterways and suitable habitats. No plastics or other non-porous material will be used for erosion control. If used, silt fencing will be removed upon completion of work activities. Non-entangling erosion control materials (e.g., fiber netting with mesh size less than 0.25 inches [0.64 centimeters] or similar, no monofilament) will be used when required.
- *Firearms and Dogs.* All dogs, pets, firearms, open fires, and hunting will be prohibited at the project site, except for those firearms or dogs held by or associated with authorized security personnel or law enforcement officials.
- *Trash Abatement.* All food items, trash, and debris will be secured in animal-proof containers and removed on a regular basis to avoid attracting opportunistic predators, such as ravens, coyotes, and feral dogs. Plastic water bottles and plastic bags will be picked up and removed daily.
- *Vehicle and Equipment Maintenance.* Vehicles and equipment will be kept clean to prevent excessive build-up of oil and grease and regularly inspected for leaks. Fueling, cleaning, and maintenance of vehicles and equipment will occur in designated upland locations and not within wetlands, streams, or waterways, or within any areas where an

accidental discharge to these features may occur. Materials and heavy equipment will be stored outside of the active flow of creeks and other waterways.

- *Storage and Hazardous Materials.* Hazardous and toxic materials will be stored at designated upland locations and in watertight containers to prevent contamination of waterways and suitable habitat. All equipment will be properly maintained and cleaned to prevent spills and leaks. If any spills or leaks of petroleum or other toxic materials are detected, work in the immediate area will stop, the issue will be reported, and the area will be cleaned up in accordance with applicable local, State, and federal regulations. For small spills on impervious surfaces, absorbent materials will be used to remove the spill instead of washing it down with water. Absorbent materials will be collected and disposed of properly. For small spills on previous surfaces, such as soil, the area will be excavated and the materials properly disposed of rather than burying the contaminated area. Significant spills, including oil, will be reported immediately to 911, local emergency response teams, and the Governor's Office of Emergency Services Warning Center at (800) 852-7550.
- *Minimizing Work Area Footprint and Duration.* The project site footprints and the duration of the project will be minimized to the extent feasible to reduce the potential for take of special-status species.
- *Temporary Ground Disturbance.* All temporary ground disturbance areas will be stabilized and allowed to naturally return to pre-activity conditions within 12 months of the disturbance. Erosion control measures (e.g., mulching, seeding, biodegradable weed-and-rice-free wattles) will be used in all disturbance areas where sedimentation has potential to enter waterways and suitable habitats.
- *Equipment Clearance Survey.* All pipes, culverts, equipment, and similar structures that are stored at a work area for one or more overnight periods will be inspected for special-status species before the pipe, culvert, equipment, or structure is subsequently buried, capped, or otherwise used or moved.
- *Excavations Inspections.* All pipes, culverts, open holes, sumps, trenches, and similar structures within each work area will be inspected at the beginning of each day to ensure wildlife are not trapped. All excavations with sidewalls steeper than a 1:1 slope will be covered when workers or equipment are not actively working in the excavation, or will have an escape ramp of earth or a non-slip material with a 1:3 slope. In addition, all installed fence posts will be capped to ensure birds do not enter and get trapped within posts.
- *Dust Control.* To reduce fugitive dust resulting from Covered Activities, DWR will employ dust control measures in accordance with applicable air pollution control districts that limit the amount of fugitive dust generated during work activities. Water will be added to the surface to soften the soil and control dust, where needed.
- *Work Area Delineation.* The perimeter of work areas will be clearly delineated on work area maps, flagged, and/or fenced, as appropriate, to ensure work activities avoid adjacent

riparian habitats, waterways, and suitable habitat[2] outside of the work area. In situations where work activities are limited to developed, disturbed, or otherwise unsuitable habitat, flagging and fencing may not be necessary. However, in situations where work activities will occur in close proximity to waterways or suitable habitat, DWR will implement appropriate measures to ensure the avoidance and minimization of impacts to those resources and special-status species, such as on-site biological monitoring of activities or placement of exclusion fencing after biological clearance surveys.

- *Wildlife Protection.* Any wildlife encountered during the project will be allowed to leave the area on their own without harm or will be moved out of harm's way by an approved biologist or as specified in the species-specific mitigation measures.
- *Work Hours.* Access to the construction areas shall be limited to established work hours.
- *Nighttime Work Requirements.* Construction activities shall not be conducted at night (i.e., between dusk and dawn) within 500 feet of sensitive biological resources or wildlife corridors. Any nighttime lighting needed (e.g., security lighting) shall be shielded and directed downwards to minimize light spillover or glare.
- *Noise.* Construction contractors shall equip construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards to reduce construction equipment noise to the maximum extent possible. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive biological resources, and stage equipment in areas that will create the greatest distance between construction-related noise sources and sensitive biological resources.
- *Species Injury/Mortality Reporting.* Any worker who inadvertently injures or kills a special-status species or finds one dead, injured, or entrapped shall immediately report the incident to the construction supervisor. The construction supervisor shall immediately notify DWR personnel or the DWR inspector, who then shall immediately inform CDFW.

Mitigation Measure BIO-6: Revegetation Plan. For temporary impacts on natural communities, a Revegetation Plan shall be prepared by a qualified biologist(s) prior to starting construction and shall be implemented by DWR following completion of construction. The Revegetation Plan shall guide and ensure successful restoration to pre-project conditions and shall include, at a minimum, the following:

- A native planting palette appropriate for each vegetation type being restored and appropriate to local conditions.

Mitigation Measure BIO-7: Impacts on Federally and State-Listed Species Habitat. If permanent direct impacts on federally or State-listed species habitat would be affected by the project, a compensatory mitigation plan shall be developed and implemented in coordination with USFWS and CDFW, as appropriate. Unavoidable effects would be compensated through a combination of creation, preservation, and restoration of habitat or purchase of credits at an approved mitigation bank at a minimum 1:1 ratio or equivalent.

Temporary impacts shall be returned to similar conditions to those that existed prior to project-related activities (consistent with **Mitigation Measure BIO-6: Revegetation Plan**).

Mitigation Measure BIO-8: Burrowing Owl.

- *Pre-Activity Survey.* To avoid project-related impacts to burrowing owls potentially occurring on or in the vicinity of the project site, a pre-construction presence/absence survey for burrowing owls shall be conducted by a qualified biologist within suitable burrowing owl habitat in accordance with current CDFW guidelines (e.g., the 2012 CDFG Staff Report on Burrowing Owl Mitigation). The survey shall be conducted within 30 days prior to the commencement of any ground disturbing activities, including vegetation clearing, grubbing, or grading. The survey shall identify occupied breeding and non-breeding burrowing owl burrows within 500 feet (152 meters) of project activities. In addition, a final pre-construction survey to avoid active burrowing owl individuals and burrows shall be conducted within three (3) days prior to the initiation of project activities, with the findings immediately reported to CDFW. Additionally, if ground-disturbing activities have previously occurred, but the site is left undisturbed for more than 30 days, a new pre-construction survey shall be conducted to minimize the possibility of burrowing owls having colonized the site since it was last disturbed. If burrowing owls are not present during the survey(s), site preparation and construction activities may begin. A final report shall be prepared by a qualified biologist and submitted to CDFW within 30 days of completion of the survey documenting the results of the burrowing owl surveys and detailing avoidance, minimization, and mitigation measures.

- *Avoidance.* If burrowing owl is present within the 500-foot survey area, then avoidance shall be implemented to avoid impacts to burrowing owl individuals and active burrows. Avoidance of burrowing owls can be achieved through the implementation of the following measures, consistent with the CDFW Staff Report on Burrowing Owl Mitigation (2012), most recent guidelines, or consultation with CDFW:

    - A qualified biologist establishing a no-disturbance buffer (i.e., a minimum 165-foot no-disturbance buffer for low level disturbance activities during the non-breeding season [September 1 through January 31] and a minimum 500-foot no-disturbance buffer for low level disturbance activities during the breeding season [February 1 through August 31]) based on the project activities.

    - Regular monitoring of the active burrow by a qualified biologist with the authority to adjust the buffer size if the burrowing owl exhibits signs of disturbance (i.e., agitation or stress behavior).

    - Buffer distances may be reduced in specific locations where avoidance measures (such as noise attenuation buffers, visual screens, or speed-limit reductions) are placed between the occupied burrow and construction activities in coordination with CDFW.

- Construction avoidance will occur within the no-disturbance buffer until a qualified biologist determines the burrowing owl is no longer present or until a CDFW-approved Burrowing Owl Plan has been implemented.
- If active burrowing owl nests are identified during the pre-construction survey, project activities must not commence within 500 feet of the active nest until no sign is present that the burrows are being used by adult or juvenile owls or following CDFW approval of a Burrowing Owl Plan as described below.
- If owl presence is difficult to determine, a qualified biologist shall monitor the burrows with motion-activated trail cameras for at least 24 hours to evaluate burrow occupancy.

- *Burrowing Owl Plan.* Prior to construction, if impacts to burrowing owl individuals or active burrows cannot be avoided, the qualified biologist and DWR shall coordinate with CDFW to develop a Burrowing Owl Plan to be approved by CDFW prior to commencement of project activities in the buffer zone. The Burrowing Owl Plan shall describe proposed avoidance, relocation, monitoring, minimization, and/or mitigation actions. The Burrowing Owl Plan shall include the number and location of occupied burrow sites and details on proposed buffers if avoiding the burrowing owls or information on the adjacent or nearby suitable habitat available to owls for relocation. DWR shall implement the Burrowing Owl Plan following CDFW review and approval.

  If burrowing owls are observed within the project site during project implementation and construction, CDFW shall be notified immediately in writing within 48 hours of detection. If avoidance is not feasible, a Burrowing Owl Plan shall be submitted to CDFW for review and approval within two weeks of detection and project activity shall be halted within a minimum of 165-feet for low level disturbance activities during the non-breeding season [September 1 through January 31] or a minimum 500-feet for low level disturbance activities during the breeding season [February 1 through August 31] of the burrowing owls without CDFW approval. DWR shall be responsible for implementing appropriate avoidance, minimization, and mitigation measures, including burrow avoidance, passive relocation, or other appropriate mitigation measures (i.e., noise attenuation, speed restrictions, biological monitoring, etc.) as identified in the Burrowing Owl Plan.

  If impacts cannot be feasibly avoided and construction could result in potential direct or indirect impacts to burrowing owl and/or occupied habitats, DWR shall consult with CDFW to ensure compliance with the California Endangered Species Act (CESA), which may include obtaining a “take” permit (e.g., CESA Section 2081 Incidental Take Permit) and mitigation for impacts to habitat (i.e., on-site restoration of temporarily impacted areas, on-site or off-site habitat preservation/restoration for permanently impacted areas, or purchase of credits from an approved bank).

Mitigation Measure BIO-9: Swainson's Hawk.

- *Pre-Activity Survey.* A qualified biologist will conduct a pre-activity survey for Swainson's hawk when project activities will occur within suitable habitat. The survey will determine if existing or potential nesting sites are present within 0.25 mile (0.4 kilometer) of work areas.
- *Pre-Activity Nesting Survey.* If suitable potential nesting sites are located within 0.25 mile (0.4 kilometer) of project activities, a qualified biologist will conduct a pre-activity nesting bird survey if work occurs during the nesting season (February 15 through August 31) prior to any work, site preparation, mowing, vegetation removal, and/or staging activities. Surveys will be conducted no more than 7 days prior to the initiation of project activities.
- *Active Nest Avoidance.* If active nests are identified within 0.25 mile (0.4 kilometer) of any project activities, a 0.25 (0.4 kilometer) temporary no-work buffer will be established around the active nest until the nest is vacated, young have fledged, and there is no evidence of a second nesting attempt. An approved biologist may temporarily reduce the no-work buffer distance if it can be determined that project activities will not negatively affect nesting behavior and a biological monitor is present. A qualified biologist will monitor the status of the nest throughout the season to determine when young have fledged or the nest is no longer active. If the biologist does not find any nests but suitable habitat would be removed, the biologist will conduct a final survey of such habitat and areas within 100 feet (30.5 meters) of the habitat within 48 hours of the activity to confirm the absence of nests.
- *Monitoring.* If project activities must occur within 0.25 mile (0.4 kilometer) of an identified active Swainson's hawk nest, a qualified biologist must be on-site daily to monitor the nests for signs of agitated behavior. The biological monitor will hold stop-work authority.

Mitigation Measure BIO-10: Tricolored Blackbird.

- *Pre-Activity Survey.* A qualified biologist will conduct a pre-activity survey for tricolored blackbirds when activities will occur within suitable habitat. The survey will determine if existing or potential nesting sites are present within 250 feet (76 meters) of the work area.
- *Pre-Activity Nesting Survey.* If suitable potential nesting sites are located within 250 feet (76 meters), a qualified biologist will conduct a pre-activity nesting bird survey if work occurs during the nesting season (February 15 through August 31) prior to any work, site preparation, mowing, vegetation removal, and/or staging activities. Surveys will be conducted no more than 7 days prior to the initiation of project activities.
- *Active Nest Avoidance and Monitoring.* If active nests are identified within 250 feet (76 meters) of any project activities, a 250-foot (76-meter) temporary no-work buffer will be established around the active nest until the young have fledged. A qualified biologist may reduce the no-work buffer distance if it can be determined that project activities will not negatively affect nesting behavior and a biological monitor is present to monitor nesting

behavior during project activities. No work buffers will remain established until the nest is vacated, juveniles have fledged, and there is no evidence of a second nesting attempt.

Mitigation Measure BIO-11: Nesting Birds. To avoid and minimize impacts to nesting birds, a qualified biologist will conduct pre-activity surveys for nesting birds no more than 7 days prior to any vegetation removal (e.g., upland vegetation management, grading and scraping for new road work, grubbing and removal of ground vegetation, removal of trees or shrubs) that begins from February 15 to August 31, and as early as January 15 for raptors. A resurvey will be needed if there is a 7-day or more lapse in work activities during this period. Surveys will cover the work area footprint and suitable habitat within 100 feet (30.5 meters) for all birds, 250 feet (76 meters) for raptors and tricolored blackbirds, and 0.25 mile (0.4 kilometer) for Swainson's hawks. If nests are located during pre-activity surveys, impacts will be minimized by establishing an appropriate non-disturbance buffer zone around active nests or vegetation patches supporting nesting birds. The size of the buffer will be determined by the biologist based on the species' sensitivity to disturbance, time of year, and planned work activities in the area. A biologist will monitor the behavior of the nesting birds to verify that they are not displaying evidence of disturbance from the project. The buffer will remain in effect and monitored until the nest is no longer active. Buffers for Swainson's hawk nests will be based on the guidance in the Swainson's Hawk Technical Advisory Committee's Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, published in 2000 or more recent version.

Mitigation Measure BIO-12: American Badger. Prior to any ground-disturbing activity, a qualified biologist shall conduct pre-construction surveys for American badger den sites within suitable habitat located within the project site. These surveys shall be conducted no less than 14 days and no more than 30 days prior to the start of ground-disturbing activities. The qualified biologist shall establish a 100-foot avoidance buffer around occupied maternity dens throughout the pup-rearing season (February 15 through July 1) and a 50-foot avoidance buffer around occupied dens during other times of the year. If non-maternity dens are found and cannot be avoided during construction activities, they shall be monitored for badger activity. If the qualified biologist determines that dens may be occupied, passive den exclusion measures shall be implemented for three to five days to discourage the use of these dens prior to project disturbance activities.

Mitigation Measure BIO-13: Special-Status Bats. Prior to commencement of construction activities, within or outside of the maternity roosting season, a qualified biologist shall conduct a pre-construction clearance survey throughout the project site in areas that have the potential to provide suitable bat roosting habitat to determine if any special-status bat species are roosting on-site. If bats are determined to be using trees specifically for roosting,

the biologist will determine whether a day roost (non-breeding) or maternity roost (lactating females and dependent young) is present.

- If a day roost is determined to be present, the biologist shall ensure that direct mortality to roosting individuals will not occur. In general, disturbances to day roosts as a result of noise or other indirect impact is not generally considered significant, as it would not cause direct mortality of individuals and would not be expected to reduce populations to below self-sustaining levels. If removal of any trees supporting a day roost would occur, the biologist shall ensure that all roosting individuals disperse from the location prior to removal of the vegetation to prevent direct mortality.
- If a maternity roost is observed, the biologist will determine whether construction activities are likely to disturb breeding activities. If it is determined that the vegetation supporting the roost must be removed or activities are expected to disturb the breeding activities, a Bat Exclusion Plan shall be prepared in consultation with CDFW. At a minimum, the plan shall include avoidance and minimization measures to reduce potential impacts on breeding bats during construction activities and prescribed methods to safely and humanely evict bats from the roost to minimize any potential impacts.
    - Exclusion devices may be installed to discourage bats from occupying the work areas outside of the maternity season in consultation with CDFW. Netting shall not be used as an exclusion material. If a roost is determined by a qualified biologist(s) to be used by a large number of bats (large hibernaculum), bat boxes shall be installed near the work areas prior to installing exclusion devices. The number of bat boxes installed will depend on the size of the hibernaculum and shall be determined through consultations with the CDFW. If a maternity colony has become established, all construction activities shall be postponed within a 500-foot buffer around the maternity colony until it is determined by a qualified biologist(s) that the young have dispersed. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately.
    - Any exclusion devices shall be designed to avoid entrapment of birds or bats and allow exit from, but not entry to, the exclusion area. Exclusion devices shall be installed between September 30 and February 1 and removed at the end of construction. A qualified bat biologist(s) shall be present upon exclusion installation and repair to survey for and ensure that birds and bats are not trapped behind exclusion devices.
    - Exclusion monitoring shall occur daily by a qualified biologist(s) to determine effectiveness of devices. Any exclusion repair must be completed within three days of observation under supervision of a qualified biologist(s) to ensure that bat entrapment does not occur.

Mitigation Measure BIO-14: Crotch's Bumble Bee.

- *Pre-Activity Survey.* A pre-activity survey for Crotch's bumble bee will occur prior to initiation of ground-disturbing activities in suitable habitat. The pre-activity survey will

include a habitat assessment that evaluates historical and current species occurrences and documents potential nesting habitat in the work area.

- *Seasonal Work Window and Avoidance.* Ground-disturbing activities will occur November 1 to January 31, outside of the nesting season within suitable habitat, or pre-activity nest surveys will be conducted and, if applicable, nest avoidance will be implemented.
- *Pre-Activity Nest Survey.* If ground-disturbing activities will occur during the nesting season (February 1 through October 31), a pre-activity nest survey will be conducted within 30 days of initiation of activities to evaluate whether an active nest is present within work areas. Bee identification will be documented using photos of bees on vegetation taken from multiple angles. Only approved biologists are allowed to handle, capture, or net bees if needed for identification, as described in the California Department of Fish and Wildlife's 2023 Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species, or most recent version.
- *Nest Avoidance.* If an active Crotch's bumble bee nest is detected within a work area, an avoidance buffer of 100 feet (30.5 meters) will be established. The buffer may be reduced if determined by a qualified biologist that, based on bee behavior, a reduced buffer will not affect nesting individuals. Ground-disturbing activities will avoid active nest resources during the Crotch's bumble bee nesting period (February 1 through October 31), to the maximum extent feasible, or until the nest is determined to no longer be active by a qualified biologist. If impacts cannot be feasibly avoided and construction could result in potential direct or indirect impacts to Crotch's bumble bee and/or occupied habitats, DWR shall consult with CDFW to ensure compliance with the California Endangered Species Act, which may include obtaining a "take" permit (e.g., CESA Section 2081 Incidental take Permit from CDFW) and mitigation for permanent impacts to habitat.

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3.2.5 Cultural Resources

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
V. CULTURAL RESOURCES—Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

This section relies on the information and findings presented in the cultural resources technical report prepared for the proposed project:

> *California Aqueduct Subsidence Program (CASP) Pools 20–21 Liner Raise Project, San Luis Field Division, Fresno and Kings Counties, California: Cultural Resources Inventory Report* (Hoffman et al. 2025).

The technical report included an overview of the environmental, ethnographic, and historic background of the proposed project site, with an emphasis on aspects related to human occupation. More detailed information regarding the results of the cultural resources study can be found in the technical report (Confidential **Appendix C**).

Environmental Setting

California Historical Resources Information System Records Search

A records search covering the proposed project site and areas within 0.25 mile was conducted on May 1, 2024, by staff at California Historical Resources Information System's (CHRIS's) Southern San Joaquin Valley Information Center (SSJVIC), which is housed at California State University, Bakersfield. The SSJVIC records search included a review of all recorded cultural resources and previous studies.

The SSJVIC records search indicates that eight cultural resources have been previously recorded within the proposed project site. Two of these resources, P-10-006207/P-15-015820 and P-16-000266 are, in fact, one resource, the California Aqueduct, which runs the length of the entire proposed project site, and is hereafter treated as a single resource. Five of the remaining resources are built environment resources, consisting of four bridges (P-10-006236, P-16-000264, P-16-000265, P-16-000267) and an electrical transmission line (P-10-006640). The one other previously

recorded resource, as on file at the SSJVIC, is a pre-contact archaeological isolate (P-10-007345). In addition, ESA recorded another pre-contact archaeological isolate in the proposed project site (ESA-LinerRaise-ISO-002P), which is not on file at the SSJVIC, as part of a cultural resources study conducted on portions of the proposed project site in 2020–2022, as reported on by Ehringer et al. (2023). In summary, eight cultural resources (two archaeological and six built environment) appear to have been previously recorded in the proposed project site. Two other previously recorded cultural resources are mapped outside but within 0.25 mile of the proposed project site; P-10-006237 (Gale Avenue Bridge) is 0.24 mile north of the proposed project site, and P-16-000268 (Quail Avenue Bridge) is immediately adjacent to the south end of the proposed project site. The SSJVIC has record of seven previous cultural resources studies that have been conducted within 0.25 mile of the proposed project site, with six of these covering some portion of the proposed project site. Cumulatively, these reports covered approximately 5 percent of the proposed project site. As mentioned earlier, portions of the project site were surveyed by ESA in 2020–2022 and reported on by Ehringer et al. (2023); that study covered approximately 99 percent of the current proposed project site.

Archaeological Sensitivity Analysis

While geoarchaeological modeling indicates that the portions of the proposed project site in the vicinity of MPs 166.5 to 167.0, and 169.2, have moderate sensitivity for buried pre-contact resources, previous disturbances associated with construction of the Aqueduct have likely removed any intact land surfaces within the proposed project site that had the potential to contain archaeological deposits. The proposed project would consist of excavation within the Aqueduct embankments (engineered fill sediment) and a vacant field (borrow area); the borrow area consists of stockpiled sediment previously excavated as part of the original Aqueduct construction with heights of 12 to 15 feet above the original ground surface, and the proposed project would only excavate to a maximum of 5 feet below the top of this stockpile, thus not disturbing any non-stockpiled sediment. These areas have low archaeological sensitivity, further limiting the potential for project implementation to affect any archaeological resources. Therefore, the overall potential for the proposed project to encounter intact significant pre-contact archaeological resources is considered low. Also, the proposed project site's sensitivity for historic-era archaeological resources is low, as historic-era archaeological resources in the proposed project site would likely be associated with the Aqueduct, former homes or labor camps, or the former settlement of Milham City, though the Aqueduct construction was very intensive and likely resulted in the destruction and removal of most historic-era materials formerly in the proposed project site. Any previously unrecorded historic-era archaeological resources in the proposed project site associated with the Aqueduct would likely not qualify as contributors to the Aqueduct, as existing engineering plans would likely provide any information potential on the resources. Based on this review, the proposed project site's sensitivity for historic-era archaeological resources is low.

Ethnographic Literature Research

The only clearly documented ethnographic village sites in the vicinity of the proposed project site are the Southern Valley Yokut village *Walna*, approximately 2 miles east of the southern portion of the

proposed project site, and the Southern Valley Yokut village *Golon*, near the present-day community of Huron approximately 2.5 miles northwest of the northern end of the proposed project site (Kroeber 1976 [1925]; Wallace 1978).

Native American Correspondence

The California Native American Heritage Commission (NAHC) maintains a confidential Sacred Lands File (SLF), which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on July 19, 2024, to request a search of the SLF for the proposed project site and vicinity. The NAHC replied on July 22, 2024, stating that the SLF has no record of any resources in or near the proposed project site. The response also provided contact information for 14 individuals representing California Native American Tribes (Tribes) that may be traditionally and culturally affiliated with the proposed project site.

In support of required Native American consultation for the proposed project pursuant to Public Resources Code Section 21080.3.1, as well as in accordance with the California Natural Resources Agency's *Final Tribal Consultation Policy* and DWR's *Tribal Engagement Policy*, on October 10, 2024, DWR sent a letter via certified mail to the Santa Rosa Rancheria Tachi Yokut Tribe providing information on the proposed project and requesting that the Tribe notify DWR if they would like to consult pursuant to Public Resources Code Section 21080.3.1. On October 11, 2024, DWR sent an email with attachments to the Santa Rosa Rancheria Tachi Yokut Tribe with the same project-related information and request as the letter. DWR sent a follow-up email to the Tribe regarding the proposed project on November 13, 2024, and left a voicemail message on May 5, 2025. To date, the Santa Rosa Rancheria Tachi Yokut Tribe has not provided any response to this outreach.

In accordance with the California Natural Resources Agency's *Final Tribal Consultation Policy* and DWR's *Tribal Engagement Policy*, on October 10, 2024, DWR sent letters via certified mail to the other Tribes identified by the NAHC besides the Santa Rosa Rancheria Tachi Yokut Tribe, as follows:

- Amah Mutsun Tribal Band
- Big Sandy Rancheria of Western Mono Indians
- Cold Springs Rancheria of Mono Indians
- Dumna Wo-Wah Tribal Government
- Dunlap Band of Mono Indians
- Kitanemuk & Yowlumne Tejon Indians
- Northern Valley Yokut/Ohlone Tribe
- Salinan Tribe of Monterey, San Luis Obispo Counties
- Sierra Foothill Wuksachi Yokuts Tribe
- Table Mountain Rancheria
- Traditional Choinumni Tribe

- Tule River Indian Tribe
- Wuksachi Indian Tribe/Eshom Valley Band
- Xolon-Salinan Tribe

The letters provided information on the proposed project and requested that the recipients provide information on cultural resources that may be impacted by the proposed project, if they would like to do so. On October 11, 2024, DWR sent emails with attachments to these same Tribes with the same project-related information and request as the letters. On October 14, 2024, the Chairperson of the Xolon-Salinan Tribe sent an email to DWR stating that her Tribe did not wish to consult on the proposed project. On October 16, 2024, the Chairperson of the Traditional Choinumni Tribe contacted DWR by telephone stating that his Tribe did not wish to consult on the proposed project. Upon receipt of updated contact information, on November 6, 2024, DWR sent a follow-up letter, via certified mail, to the Tule River Indian Tribe. DWR sent a follow-up email with attachments to the Amah Mutsun Tribal Band on November 13, 2024. To date, no other communications with Tribes regarding the proposed project have occurred. Documentation of the proposed project correspondence with Tribes to date is included in **Appendix D**.

Field Survey

In June 2024, ESA conducted a cultural resources field survey of the entire proposed project site. The survey consisted of an intensive-level archaeological pedestrian survey and a reconnaissance-level historic-era built environment survey. For the archaeological pedestrian survey, flat areas with visible ground surface were subject to a systematic intensive pedestrian survey with transects spaced at intervals no more than 15 meters apart. Areas with limited ground visibility, such as densely vegetated or inundated areas, were subject to an opportunistic survey, wherein areas with some ground visibility were targeted. Paved areas, such as Aqueduct access roads, were not surveyed. Berms were visually inspected during the survey. Pre-contact resources were documented in metric units while historic-era resources were documented in imperial units, per industry conventions. Pre-contact archaeological sites were defined as three or more artifacts within a 30-by-30-meter area, or the presence of at least one feature. Historic-era archaeological sites were defined as three or more artifacts with at least one diagnostic item more than 45 years in age within an approximately 100-by-100-foot area. Pre-contact archaeological isolates were defined as fewer than three artifacts within a 30-by-30-meter area and would be recorded. Historic-era archaeological isolates consisting of fewer than three artifacts, unless considered exceptional, and non-diagnostic historic-era artifacts, would not be recorded. The historic-era built environment survey consisted of inspecting any historic-era built environment resources 45 years or older in the proposed project site identified through archival research, engineering plans, and historic and modern maps and aerial photographs. In addition, contextual photos were taken at MP markers to document the present condition of the Aqueduct (P-10-006207/P-15-015820/P-16-000266).

During the survey, neither of the previously recorded archaeological resources (both isolates) mapped in the proposed project site (P-10-007354, ESA-LinerRaise-ISO-002P) were observed in the proposed project site. One previously unrecorded archaeological site (ESA-CASP-24-01), a pre-contact flaked-

stone scatter, was observed on the east side of the Aqueduct, outside the proposed project site. After initial observation of this resource, DWR and Reclamation determined that the proposed project site could be revised to completely avoid the resource. As such, the resource is not considered in the current proposed project site. Also during the survey, one previously unrecorded archaeological isolate (ESA-CASP-24-ISO-01), a pre-contact basalt scraper/chopper, was identified in the proposed project site. Six built environment resources, all previously recorded, were identified in the proposed project site during the survey. One of these, P-10-006207/P-15-015820/P-16-000266 (California Aqueduct), runs the extent of the proposed project site. The other four consist of four bridges (P-10-006236, P-16-000264, P-16-000265, P-16-000267) and an electrical transmission line (P-10-006640).

Summary of Cultural Resources Identified

As a result of background research and previous survey efforts, eight cultural resources, six built environment and two archaeological, were identified in the proposed project site: the California Aqueduct (P-10-006207/P-15-015820/P-16-000266), four bridges (P-10-006236, P-16-000264, P-16-000265, P-16-000267), one electrical transmission line (P-10-006640), and two pre-contact archaeological isolates (P-10-007345, ESA-LinerRaise-ISO-002P). During the field survey conducted for the proposed project, all six of the built environment resources previously recorded in the proposed project site were observed in the proposed project site. No previously unrecorded built environment resources were identified. Neither of the archaeological resources previously recorded in the proposed project site were observed in the proposed project site during the survey, but one previously unrecorded archaeological isolate (ESA-CASP-24-ISO-01) was identified in the proposed project site.

In summary, seven cultural resources, six built environment and one archaeological, are present in the proposed project site: the California Aqueduct (P-10-006207/P-15-015820/P-16-000266), four bridges (P-10-006236, P-16-000264, P-16-000265, P-16-000267), one electrical transmission line (P-10-006640), and one pre-contact archaeological isolate (ESA-CASP-24-ISO-01).

P-10-006207/P-15-015820/P-16-000266 (California Aqueduct) is listed in the California Register of Historical Resources (California Register) under Criteria 1 and 3. P-10-006236 (Jayne Ave. Bridge), P-16-000264 (Avenal Cutoff Bridge), P-16-000265 (Plymouth Ave. Bridge), and P-16-000267 (30th Ave. Bridge) are all listed in the California Register under Criteria 1 and 3 as contributors to the California Aqueduct. P-10-006640 was previously recommended not eligible for the California Register (Asselin 2016). No previous evaluation of California Register eligibility has been made for ESA-CASP-24-ISO-01. Hoffman et al. (2025) evaluated both P-10-006640 and ESA-CASP-24-ISO-01, recommending both not eligible for the California Register and, therefore, as not qualifying as historical resources for CEQA purposes. In summary, five of the cultural resources identified in the proposed project site (all historic-era built environment resources: P-10-006207/P-15-015820/P-16-000266 [California Aqueduct], P-10-006236 [Jayne Ave. Bridge], P-16-000264 [Avenal Cutoff Bridge], P-16-000265 [Plymouth Ave. Bridge], and P-16-000267 [30th Ave. Bridge]) are listed in the California Register and, therefore, qualify as historical resources for CEQA purposes.

Discussion

The following analysis describes archaeological resources, both as historical resources (according to CEQA Guidelines Section 15064.5) and as unique archaeological resources (as defined in Public Resources Code Section 21083.2[g]) under Issue V.b.

Issue V.a

Under CEQA, a significant impact could occur if the proposed project results in a substantial adverse change in the significance of the historical resource, as defined in CEQA Guidelines Section 15064.5, or a unique archaeological resource, as defined in Public Resources Code Section 21083.2. A "substantial adverse change in the significance" of an historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of [the] historical resource would be materially impaired" (CEQA Guidelines Section 15064.5[b][1]). An historical resource or unique archaeological resource is materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in (or eligibility for inclusion in) the California Register or a qualified local register (CEQA Guidelines Section 15064.5[b][2]). Therefore, material impairment of historical resources and unique archaeological resources constitutes a significant impact.

The proposed project would not alter the Aqueduct's alignment, nor its open trapezoidal design, which facilitates the conveyance of higher volumes of water. Upon project completion, the modifications to backfill the embankment in preparation for new concrete liners would further reinforce the Aqueduct's open trapezoidal design and would not involve its demolition or removal. The concrete lining is a character-defining feature of the Aqueduct, and the proposed project does not propose removing the existing concrete liners, nor does the project propose to damage or destroy any parts of the Aqueduct. Instead, new material would be added above the existing liners, and this new material would match the original liner portions in design, unreinforced concrete material, texture, thickness, height, and color.

The proposed project has the potential to cause alterations to the Aqueduct that are not consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (SOI Standards) (Code of Federal Regulations Title 36, Part 68) due to modifications to the Aqueduct's character-defining features, including limited excavation and backfill at existing concrete liners, and the introduction of new concrete liner panels atop existing concrete liner panels. The SOI Standards Rehabilitation treatment allows for alterations and construction of new additions, if necessary, for the continuation or new use of a built environment resource. This treatment allows for greater flexibility to ensure the continued use of an historical resource. Under CEQA, a project that may impact an historical resource but that follows the SOI Standards is considered to have a less-than-significant impact on the historical resource. Due to damage of ongoing subsidence on the existing concrete panels, the proposed alterations to the Aqueduct are necessary for the continued function of the resource. The proposed new panels would match the original design, size, scale, massing, and materials of the original panels.

The proposed project would allow for the continuous use of the Aqueduct by maintaining functionality in Pools 20 and 21, which would maintain operational flexibility and improvements to safety and reliability. While there would be limited changes to select contributing features of the resource, these modifications would not alter the resource's use as an aqueduct, alignment, location, setting, or association with the SWP, which are the character-defining features of the Aqueduct under California Register Criterion 1. Under California Register Criterion 3, the alterations proposed by the proposed project would maintain the Aqueduct's functionality. The access roads along the embankment that are currently used by maintenance and service vehicles would be used for the movement of heavy equipment during construction of the proposed project and would not be altered or destroyed as a part of the proposed project; the access roads would continue to operate for their intended purpose during and after project completion. Additionally, even with implementation of the proposed project, the Aqueduct would continue to exhibit most construction methods, materials, and engineering details associated with its period of significance.

The Aqueduct would not be removed from its historic location. There would be no introduction of visual, atmospheric, or audible elements that diminish the integrity of the resource. The proposed project would not result in the neglect of the Aqueduct, nor would the proposed project result in the transfer, lease, or sale of the Aqueduct. The proposed project would not remove or otherwise alter any of the other character-defining features or contributing elements of the Aqueduct, including the planned and engineered route or ancillary infrastructure. Any alterations to the immediate surroundings of the Aqueduct resulting from the proposed project would be temporary, or short-term, since the proposed project does not include the construction of any new structures, facilities, or infrastructure.

Therefore, the proposed project would not materially impair the Aqueduct (P-10-006207/P-15-015820/P-16-000266) such that it would no longer convey its historical significance for its eligibility for inclusion in the California Register. Upon project completion, the Aqueduct (P-10-006207/P-15-015820/P-16-000266) would still retain its integrity.

The proposed project would occur adjacent to the bridges along the Aqueduct embankment, but would not modify, destroy, or otherwise alter any bridges, including P-10-006236 (Jayne Ave. Bridge), P-16-000264 (Avenal Cutoff Bridge), P-16-000265 (Plymouth Ave. Bridge), and P-16-000267 (30th Ave. Bridge). The modifications to prepare the proposed project site for the panel installation and the installation and curing of the panels would not involve work on these bridges as part of the proposed project.

Because no physical alteration of these bridges would occur as a result of the proposed project, the resources' significance would not be materially impaired, and they would continue to be able to convey the significance that justifies their inclusion, or eligibility for inclusion, in the California Register. The proposed project would not result in a change of setting to the bridges due to the minimal visual changes that are proposed (i.e., liner raise of the Aqueduct). There would be no introduction of visual, atmospheric, or audible elements that would diminish the integrity of the resources. Therefore, the proposed project would not materially impair any of the four bridges identified in the proposed project site that qualify as historical resources (P-10-006236 [Jayne Ave.

Bridge], P-16-000264 [Avenal Cutoff Bridge], P-16-000265 [Plymouth Ave. Bridge], and P-16-000267 [30th Ave. Bridge]) such that they would lose their ability to convey their historical significance for their eligibility for inclusion in the California Register. The proposed project would not affect or otherwise modify any aspect of these bridges.

In summary, for CEQA purposes, the proposed project would result in a **less-than-significant impact** on historical resources.

Issue V.b

As a result of background research and previous survey efforts, two archaeological resources were identified in the proposed project site: pre-contact archaeological isolates P-10-007345 and ESA-LinerRaise-ISO-002P. During the field survey conducted for the proposed project, neither of these archaeological resources were observed in the proposed project site, but one previously unrecorded archaeological isolate (ESA-CASP-24-ISO-01) was identified in the proposed project site.

Hoffman et al. (2025) evaluated the California Register eligibility of ESA-CASP-24-ISO-01, recommending it not eligible and, therefore, as not qualifying as an historical resource for CEQA purposes. Hoffman et al. (2025) also evaluated ESA-CASP-24-ISO-01 as not qualifying as a unique archaeological resource for CEQA purposes. In summary, no archaeological resources, including any that may qualify as historical resources (as defined in CEQA Guidelines Section 15064.5) or as unique archaeological resources (as defined in Public Resources Code Section 21083.2[g]) were identified in or adjacent to the proposed project site. As such, the proposed project is not anticipated to affect any archaeological resources.

Although there is no substantial evidence that any archaeological resources are present in the proposed project site, the proposed project would involve ground-disturbing activities that may extend into undisturbed soil and it is possible that such activities could unearth, expose, or disturb subsurface archaeological resources that have not been identified on the surface. If such resources were found to qualify as archaeological resources pursuant to CEQA Guidelines Section 15064.5, impacts of the proposed project on archaeological resources could be potentially significant. Such potentially significant impacts would be reduced to **less than significant with mitigation incorporated** by implementing **Mitigation Measure CUL-1**.

Implementing **Mitigation Measure CUL-1** would reduce impacts to less than significant by ensuring that any unanticipated archaeological discoveries are promptly evaluated and appropriately protected or treated by qualified professionals and Tribes, thereby preventing inadvertent damage to potentially significant cultural resources.

Issue V.c

No human remains have been identified in the proposed project site through archival research, field surveys, or Native American outreach. Also, the land-use designations for the proposed project site do not include cemetery uses. Therefore, the proposed project is not anticipated to disturb any human remains.

However, because the proposed project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. In the event human remains were discovered during project construction activities, impacts on the human remains resulting from the proposed project would be significant if those remains were disturbed or damaged. Such potentially significant impacts would be reduced to **less than significant with mitigation incorporated** by implementing **Mitigation Measure CUL-2**.

Implementing **Mitigation Measure CUL-2** would reduce impacts to less than significant by halting construction should human remains be discovered and ensuring that any discovered human remains are respectfully evaluated by appropriate authorities, protected, and documented.

Mitigation Measures

Mitigation Measure CUL-1: Unanticipated Discovery Protocol for Archaeological Resources. If pre-contact or historic-era archaeological resources are encountered during project implementation, all activity within 100 feet of the find shall cease and a qualified archaeologist—defined as one who meets or is under supervision of one who meets the SOI Historic Preservation Professional Qualification Standards for Archeology (48 Federal Register 44738–44739) and has expertise in California archaeology—shall inspect the find within 24 hours of discovery and notify DWR of their initial assessment. Pre-contact archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; ground-stone tools (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, or ceramic refuse.

If DWR determines, based on recommendations from the qualified archaeologist and Tribes (if the resource is indigenous) that the resource is potentially eligible for the California Register (i.e., qualifies as an historical resource, as defined by CEQA), the resource shall be avoided, if feasible. This may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance of the resource is not feasible, DWR shall continue to consult with Tribes (if the resource is indigenous) and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource. This shall include documentation of the resource and may include data recovery, if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource. Any technical report developed to document the implementation of mitigation shall be submitted to CHRIS upon DWR approval, unless the document contains information that Tribes involved in the development of the mitigation deem should not be filed with CHRIS, in which case, the report shall be submitted to the NAHC.

Mitigation Measure CUL-2: Unanticipated Discovery Protocol for Human Remains. If any suspected human remains are discovered during proposed project construction, all project-related construction activities within 100 feet of the find shall cease and appropriate precautions shall be taken to protect the human remains and any associated funerary objects from further disturbance. All human remains and potential human remains shall be treated with respect and dignity at all times. This includes:

- Avoidance of any unnecessary disturbance and handling of human remains and associated funerary objects
- Avoidance of separation of human remains from associated funerary objects
- Avoidance of physical modifications of human remains and associated funerary objects
- No photographs of human remains and associated funerary objects shall be taken prior to agreement with consulting parties, except for evidentiary purposes by the U.S. Bureau of Reclamation (Reclamation) cultural resources professionals or law enforcement.

The treatment of Native American human remains and associated and unassociated funerary objects discovered during any ground-disturbing activity shall comply with applicable State laws, including Section 7050.5 of the Health and Safety Code. If human remains are discovered during testing, the archeological consultant shall immediately notify the appropriate County Coroner. In the event of the Coroner's determination that the human remains are Native American remains, the Coroner will notify the California State Native American Heritage Commission (NAHC), which will appoint a Most Likely Descendant (MLD). The MLD shall complete their inspection of the remains and make recommendations or preferences for treatment within 48 hours of being granted access to the site (as specified in Public Resources Code [PRC] section 5097.98[a]).

Requirements for responding to discoveries of Native American human remains and associated funerary objects on federal land are addressed under the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (25 USC Sections 3001–3013) and its implementing regulations (43 CFR Part 10). If human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered on federal or Tribal lands, the federal agency must determine and consult with the lineal descendants and culturally affiliated Indian Tribes and carry out appropriate treatment and disposition of the discovered remains, including transfer of custody.

All discovered human remains shall be treated initially as a crime scene with cultural resources professionals and the appropriate law enforcement authorities being brought in to assist in the determination of antiquity and manner of death. Geospatial information about the discovery location shall be taken. If this is not possible, the location shall be marked on a topographic map with a photograph of the area around the discovery (but not of the remains), to help relocate the remains later. Initial discovery information shall be recorded including: the name of the person who discovered the remains, the date of the discovery,

how the discovery was made, and any other pertinent information about the circumstances surrounding the discovery.

Upon discovery of any human remains, the location of the find with a 100-foot buffer shall be delineated in which proposed project-related construction shall cease, and the construction foreman and Reclamation shall be informed of the find. Reclamation shall immediately notify the appropriate DWR Project Manager. Reclamation shall forward a brief written report describing the discovery to DWR within 24 hours. The Reclamation Mid-Pacific Regional Archaeologist shall also be notified with a description of the nature and extent of the find.

References

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3.2.6 Energy

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VI. ENERGY—Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Environmental Setting

The State of California's Commercial Motor Vehicle Idling Regulation and Off-Road Regulation require that construction sites minimize idling and associated emissions, which also minimizes use of fuel. Specifically, during construction, idling of commercial vehicles and off-road equipment is limited to 5 minutes when not in use to comply with State requirements.

Additionally, DWR has adopted the DWR Climate Action Plan-Phase I: Greenhouse Gas Emissions Reduction Plan (GGERP), which details DWR's efforts to reduce its GHG emissions consistent with Executive Order S-3-05 and the Global Warming Solutions Act of 2006 (Assembly Bill 32) (California Department of Water Resources 2024) (refer to Checklist Section 3.2.8, "Greenhouse Gas Emissions"). GGERP Section 12 outlines the steps that each DWR project will take to demonstrate consistency with the GGERP. These steps include (1) analysis of GHG emissions from construction of the proposed project, (2) determination that the construction emissions from the project do not exceed the levels of construction emissions analyzed in the GGERP, (3) incorporation into the design of the project DWR's project-level GHG emissions-reduction strategies, (4) determination that the project does not conflict with DWR's ability to implement any of the "Specific Action" GHG emissions-reduction measures identified in the GGERP, and (5) determination that the project would not add electricity demands to the SWP system that could alter DWR's emissions-reduction trajectory in such a way as to impede its ability to meet its emissions-reduction goals.

Discussion

Issue VI.a

A full list of construction equipment anticipated to be used for the proposed project is included in Table 2-4. There would be a temporary increase in fuel demand (gasoline and diesel) that would result from the use of construction tools and equipment, truck trips to haul concrete and backfill to and from the site, and vehicle trips generated by construction workers commuting to and from the site. A GGERP Consistency Determination Checklist documenting that the proposed project has met each of the required elements is included in Appendix A. All best management practices (BMPs)

required by the GGERP for a project of this nature would be implemented as project design features (see Appendix A).

Project implementation would not include wasteful or unnecessary consumption of energy resources, because it would be required to meet air quality and greenhouse gas (GHG) emissions criteria that require the use of efficient equipment. In addition, project construction would be completed within the shortest period feasible, expected to be approximately nine months, depending on San Joaquin River hydrologic conditions.

Therefore, impacts associated with construction of the proposed project would be **less than significant**.

Once the project is constructed, existing staff would resume regular maintenance and operation of the Aqueduct in accordance with existing maintenance and water delivery schedules. Thus, operation of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy.

Issue VI.b

The proposed project is designed to maintain functionality in Pools 20 and 21. The proposed project would be consistent with applicable energy efficiency policies and standards. Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules, therefore the project would not result in wasteful, inefficient, or unnecessary consumption of energy. There would be **no impact**.

References

California Department of Water Resources

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3.2.7 Geology and Soils

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

Environmental Setting

The proposed project site is located in the portion of Fresno and Kings Counties that is within the Great Valley geomorphic province of California. The Great Valley is an alluvial plain about 50 miles

wide and 400 miles long in the central part of California. Its northern part is the Sacramento Valley, which is drained by the Sacramento River, and its southern part is the San Joaquin Valley, which is drained by the San Joaquin River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic (about 160 million years ago) (California Geological Survey 2002).

The proposed project site is not located in an Earthquake Zone of Required Investigation (California Geological Survey 2024a). The proposed project site is located approximately 6 miles east of the Great Valley thrust fault system, 30 miles east of the San Andreas Fault, and 30 miles south of the San Joaquin Fault (California Geological Survey 2024b). There are no landslides in or near the proposed project site. As discussed in Section 2.1.2, “Need for Project,” the proposed project site is located in an area of known land subsidence (U.S. Geological Survey 2024a, 2024b).

In the proposed project site, the deep soils encountered during construction of the Aqueduct consisted of a consolidated interval of interbedded sand and clay. The area is underlain by alluvium and capped by artificial fill associated with the Aqueduct and roadway embankments. The artificial fill is primarily composed of very stiff lean clays with variable sand content (Lettis Consultants International, Inc. 2023). Soils in the proposed project site are indicative of agricultural soils, and largely consist of different series of clay loams with smaller areas containing sandy loams (Natural Resources Conservation Service 2024).

Paleontological resources generally would not be present at or immediately under the Aqueduct because these materials would have been excavated and disturbed during construction of the Aqueduct. Paleontological resources that were present at that time, if any, would likely have been removed or destroyed at that time. In addition, the farming activities that predate the construction of the Aqueduct would typically have destroyed any paleontological resources, if any, within the top 2 to 3 feet under the Aqueduct and in the surrounding farm area. Only the deeper portions of the proposed borrow areas would have the potential to have paleontological resources. As shown in Figure 2-2, the borrow area is adjacent to the Aqueduct. The top several feet of the proposed borrow area next to the Aqueduct was disturbed during construction or the farming activities that predated the Aqueduct; paleontological resources would not be present at shallow depths. However, the excavation proposed for the borrow area may extend to as deep as 5 feet and therefore is anticipated to encounter undisturbed materials.

Geologic mapping of the proposed project site, including the borrow site, indicates that the underlying deposits consist of Holocene alluvium (U.S. Geological Survey 1971, 1993). Holocene time is from the present to 11,700 years ago. The Society of Vertebrate Paleontologists (SVP) defines sedimentary units older than 5,000 years ago to have the potential to contain paleontological resources (Society of Vertebrate Paleontologists 2010). A search of paleontological records for the proposed project site indicated that paleontological resources have not been encountered in any of the areas of the proposed project site, including the borrow site (Natural History Museum of Los Angeles County 2024). However, paleontological resources have been encountered from nearby localities and in the same sedimentary deposits that occur in the proposed project site, either at the surface or at depth. The paleontological resources include barnacles, echinoderms, fish, pack rats,

eared seals, oysters, bivalves, gastropods, and other mollusks. The deeper deposits at the proposed borrow site may have paleontological resources. The geologic mapping and Natural History Museum of Los Angeles County results were used to assign paleontological sensitivity to the geologic units present in the proposed project site following the guidelines of SVP 2010. The Quaternary Alluvium is considered to have a low potential at the surface that increases with depth.

Discussion

Issue VII.a.i-iv

The proposed project site is not located within an earthquake fault zone, liquefaction area, or landslide-prone area; therefore, no substantial impacts would occur as a result of a rupture of a known earthquake fault. However, in general, Central California is seismically active, with most locations in proximity to faults that can produce detectable seismic ground shaking. The SLC would potentially be subject to strong seismic ground shaking during a substantial seismologic event that could result in the concrete canal liner cracking, which could lead to water supply disruptions. However, the liner raise would occur at the top of the existing concrete liner and would provide more lined freeboard that could offset the risk of overtopping in case of shaking, and the proposed project would not significantly affect water supply. Additionally, while the proposed project could be subject to strong seismic ground shaking, the risk would not be more than existing conditions. Further, the area of the proposed project site is largely uninhabited and rural so any localized flooding as a result of liner cracking from strong ground shaking would not result in a significant risk of loss, injury, or death. Impacts would be **less than significant**.

Issue VII.b

Existing soils along the Aqueduct levees and construction areas can be characterized as highly disturbed, compacted mixtures of sediment and gravel derived from sources on- and off-site. Construction of the proposed project would require ground-disturbing activities such as grading and excavation to install the concrete liner and drainage pipes, which would involve the disturbance and exposure of surface soils. Given that the topography of the proposed project site and surrounding vicinity is relatively flat and soils are compacted, substantial soil erosion and loss of topsoil are not anticipated. Further, contractors would follow standard construction specifications to control the potential for any localized erosion from construction activities. There is potential for stormwater to transport sediment to the Aqueduct during construction. Since this project has more than 5 acres of ground disturbance, contractors would be required to comply with the NPDES construction general permit with its required preparation and implementation of a SWPPP to control stormwater runoff through the implementation of erosion control BMPs such as installing a silt fence, creating a sediment/desilting basin, installing sediment traps, using fiber rolls, creating gravel bag berms, and creating sandbag or straw bale barriers (refer to Section 3.2.10, “Hydrology and Water Quality”). Upon completion of construction activities, all construction areas, including access roads, would be regraded to match pre-project conditions. Therefore, impacts associated with erosion of soils would be **less than significant**.

Issue VII.c

The proposed project site is located in an area of known subsidence, which has been occurring at varying rates since before the Aqueduct was constructed. After water deliveries from the Aqueduct began, subsidence rates decreased to an average of less than 0.1 inch per year during the average to wet hydrologic years, but during dry to critical hydrologic years, subsidence increased (California Department of Water Resources 2017). Because the Valley in general, and the area surrounding the proposed project in particular, are dominated by agricultural practices—one of the primary causes of subsidence—subsidence is expected to continue. The proposed project would not result in an increase in subsidence as it does not involve the injection or extraction of groundwater or oil. DWR and its contractors would be required to adhere to all California Division of Occupational Safety and Health requirements for working within active work sites that would ensure the safety of all workers on-site. Therefore, relative to existing conditions, the proposed project would not expose people or structures to new potential substantial adverse effects related to unstable soils. Therefore, there would be **no impact** as a result of project implementation.

Issue VII.d

The proposed liner raises would occur on the waterside of the Aqueduct, within a sloped, constructed embankment system where soils consist of compacted mixtures of disturbed sediment, uncharacteristic of expansive soils that shrink and swell based on water content. The proposed project would not involve the construction of any structures that would be occupied during operation. Therefore, there would be **no impact** relative to expansive soils.

Issue VII.e

The proposed project would not include the construction or operation of any septic tanks or alternative water disposal system. Therefore, **no impact** would occur.

Issue VII.f

While there are no known fossil localities in the proposed project site, vertebrate and invertebrate fossils have been previously recorded in the regional area from the same sedimentary deposits that occur in the proposed project site. Many of these were encountered at shallow depths close to the ground surface, which suggests that paleontological resources may be encountered at depth. The Quaternary Alluvium deposits (Qa) within the proposed project site have a low paleontological sensitivity at the surface and shallow depths but the sensitivity increases with depth due to the increasing age of the deposits. Although the proposed project site is underlain by geologic units that could contain paleontological resources, the potential to encounter fossiliferous deposits is considered low given the past disturbances associated with construction of the Aqueduct. **Mitigation Measure GEO-1** would implement procedures to follow in the event of a discovery, and protocols for the inadvertent discovery of paleontological resources.

Implementing **Mitigation Measure GEO-1** would reduce impacts to less than significant by requiring work to stop near any unanticipated paleontological discovery so that a qualified paleontologist can assess its significance. This would allow for appropriate recovery or protection of the resource

before construction resumes, avoiding potential damage or loss. Therefore, impacts would be **less than significant with mitigation incorporated**.

Mitigation Measures

Mitigation Measure GEO-1: Unanticipated Discoveries of Paleontological Resources. In the event of the unanticipated discovery of paleontological resources, DWR or its contractor shall immediately cease all work activities in the area (within approximately 100 feet) of the discovery until it can be assessed for significance by the Qualified Paleontologist. The Qualified Paleontologist shall assess the finding, implement recovery and reporting measures, if necessary, and determine if paleontological monitoring is warranted once work resumes.

References

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3.2.8 Greenhouse Gas Emissions

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS—Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Environmental Setting

GHG emissions worldwide cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects in the San Joaquin Valley; the entire State of California; across the nation; and around the world contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts.

Discussion

Issue VIII.a

The SJVAPCD does not recommend quantitative significance thresholds for the analysis of the impact of a project's GHG emissions on the environment. Instead, the SJVAPCD's approach relies on the application of performance-based standards to assess project-specific GHG emissions impacts on global climate change. This is based on the principle that projects whose emissions have

been reduced or mitigated consistent with Assembly Bill 32, the California Global Warming Solutions Act of 2006, should be considered to have a less-than-significant impact on global climate change (San Joaquin Valley Air Pollution Control District 2015). SJVAPCD's policy provides for the following tiered approach in assessing significance of project-specific GHG emissions increases:

> *Projects complying with an approved GHG emissions-reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less-than-significant individual and cumulative impact for GHG emissions. Projects complying with an approved GHG emissions-reduction plan or GHG mitigation program would not be required to implement best performance standards (BPS).*
>
> *Projects implementing BPS would not require quantification of project-specific GHG emissions and would be determined to have a less-than-significant individual and cumulative impact for GHG emissions.*
>
> *Projects not implementing BPS would require quantification of project-specific GHG emissions and demonstration that project-specific GHG emissions would be reduced or mitigated by at least 29 percent compared to business as usual (BAU), including GHG emission reductions achieved since the 2002–2004 baseline period, consistent with GHG emission reduction targets established in California Air Resources Board's AB 32 Scoping Plan. Projects achieving at least a 29 percent GHG emission reduction compared to BAU would be determined to have a less-than-significant individual and cumulative impact for GHG emissions.*

In January 2024, DWR adopted the updated GGERP, which details DWR's efforts to reduce its GHG emissions consistent with Executive Order S-3-05 and AB 32 (California Department of Water Resources 2024). DWR also adopted the Initial Study/Negative Declaration prepared for the GGERP in accordance with the CEQA Guidelines review and public process. The GGERP provides estimates of historical (back to 1990), current, and future GHG emissions related to operations, construction, maintenance, and business practices (e.g., building-related energy use). The GGERP specifies aggressive 2020 and 2050 emissions-reduction goals and identifies a list of GHG emissions-reduction measures to achieve these goals.

DWR specifically prepared its GGERP as a "Plan for the Reduction of Greenhouse Gas Emissions" for purposes of CEQA Guidelines Section 15183.5. That section provides that such a document, which must meet certain specified requirements, "may be used in the cumulative impacts analysis of later projects." Because global climate change, by its very nature, is a global cumulative impact, an individual project's compliance with a qualifying GHG Reduction Plan may suffice to mitigate the project's incremental contribution to that cumulative impact to a level that is not "cumulatively considerable" (see CEQA Guidelines Section 15064(h)(3)).

More specifically, "[l]ater project-specific environmental documents may tier from and/or incorporate by reference" the "programmatic review" conducted for the GHG emissions-reduction plan. "An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts

analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project" (CEQA Guidelines Section 15183.5[b][2]).

Section 12 of the GGERP outlines the steps that each DWR project should take to demonstrate consistency with the GGERP. These steps include (1) analysis of GHG emissions from construction of the proposed project, (2) determination that the construction emissions from the project do not exceed the levels of construction emissions analyzed in the GGERP, (3) incorporation into the design of the project DWR's project-level GHG emissions-reduction strategies, (4) determination that the project does not conflict with DWR's ability to implement any of the "Specific Action" GHG emissions-reduction measures identified in the GGERP, and (5) determination that the project would not add electricity demands to the SWP system that could alter DWR's emissions-reduction trajectory in such a way as to impede its ability to meet its emissions-reduction goals.

Consistent with these requirements, a GGERP Consistency Determination Checklist documenting that the proposed project has met each of the required elements is included in Appendix A.

Based on the analysis provided in the GGERP and the demonstration that the proposed project is consistent with the GGERP (as shown in Appendix A), the project is compliant with the applicable GHG emissions-reduction plan, as is required by the SJVAPCD; therefore, the impact with respect to GHG emissions would be **less than significant**.

Issue VIII.b

As discussed under Issue VIII.a, the proposed project would comply with the GGERP and would not conflict with the applicable GHG emissions-reduction plan, as demonstrated by the GGERP Consistency Determination Checklist in Appendix A.

Based on the analysis provided in the GGERP and the demonstration that the proposed project is consistent with the GGERP (as shown in Appendix A), the project is compliant with the applicable GHG emissions-reduction plan; therefore, the proposed project would not conflict with an applicable emissions reduction plan and the impact would be **less than significant**.

References

California Department of Water Resources

2024 *Climate Action Plan Phase 1 – Greenhouse Gas Emissions Reduction Plan* [Government report.] Update 2023. Viewed online at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan/Files/Exhibit-C-CAP-Phase-1-Update-2023.pdf. Accessed: October 2024. Last updated: January 2024.

San Joaquin Valley Air Pollution Control District

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3.2.9 Hazards and Hazardous Materials

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS—Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

Environmental Setting

In California, Government Code Section 65962.5 requires the State Water Resources Control Board (State Water Board) and the California Department of Toxic Substance Control (DTSC) to maintain regulatory databases listing hazardous materials sites; the list is also referred to as the Cortese List. The Cortese List identifies sites with suspected and confirmed releases of hazardous materials to the subsurface soil or groundwater. The listed sites can be accessed through the State Water

Board's GeoTracker database and the DTSC EnviroStor database. The reporting and statuses of these sites change as identification, monitoring, and clean-up of hazardous materials sites progress.

A database search of both the GeoTracker and EnviroStor indicated that there are no open hazardous materials sites in proximity (within 0.5 mile) of the proposed project site; the closest site is the Chevron pipeline leak-Kettleman City located approximately 2 miles south of the site. (California Department of Toxic Substances Control 2024; State Water Resources Control Board 2024).

The closest airport is a private airstrip, Stone Land Company Airport, approximately 4 miles east of Pools 20 and 21. The nearest school, Kettleman City Elementary School, is approximately 2.7 miles southeast of the proposed project site.

Within California, fire hazard severity zones are designated by the California Department of Forestry and Fire Protection (CAL FIRE). CAL FIRE uses a five-tiered ranking system to assess the threat to people based on fuel hazard, wildland fire potential, and housing density. The proposed project site is not located in a Fire Hazard Severity Zone in a State Responsibility Area; the closest hazard zone is located in the Kettleman Hills 2 miles west across I-5 (California Department of Forestry and Fire Protection 2024).

Discussion

Issue IX.a, b

Construction activities associated with the proposed project would require the use of small qualities of hazardous materials such as diesel fuel, gasoline, oils, grease, equipment fluids, cleaning solutions and solvents, lubricant oils, and adhesives.

Materials to be excavated from the borrow site were sampled from throughout the proposed project site and analyzed for the potential presence of naturally occurring asbestos (Lettis Consultants International, Inc. 2024). Eighteen borings were drilled in the borrow area for the proposed project, with four samples collected and analyzed for asbestos. The results indicated that asbestos is not present at or above the regulatory agency limit of 0.25 percent (Asbestos Airborne Toxic Control Measure, Section 93105, Title 17, California Code of Regulations). However, DWR is aware that asbestos is present in the regional area. To address this potential, DWR has committed to preparing and implementing an Asbestos Dust Mitigation Plan for the project. The Asbestos Dust Mitigation Plan will be submitted to the SJVAPCD for their review and approval prior to excavation activities and will be in compliance with the emission standards required by California Code of Regulations Title 17 Section 93105 – Asbestos Airborne Control Measures for Construction, Grading, Quarrying, and Surface Mining Operations.

During construction, contractors handling, storing or transporting hazardous materials or wastes would comply with hazardous materials regulations, such as implementation of a SWPPP and BMPs in compliance with the NPDES permitting requirements (refer to Section 3.2.9, "Hazards and Hazardous Materials," Issue X.a, for BMP examples), which would reduce the risk of accidental release and provide protocols and notification requirements should an accidental release occur.

Any spills of these substances would be cleaned on-site according to the SWPPP and NPDES permitting requirements. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, equipment and fuel storage; describe protocols for responding immediately to spills; and describe BMPs for controlling site run on and runoff. The SWPPP prepared for the proposed project would also identify BMPs to ensure the lawful transport, use, storage, and disposal of hazardous materials.

By complying with relevant federal, State, and local laws, the proposed project would not result in a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous materials and would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Additionally DWR will implement an Asbestos Dust Mitigation Plan. The proposed project would not create a significant hazard to the public or the environment and impacts would be **less than significant**.

Issue IX.c

There are no schools located within 0.25 mile of the proposed project site. Furthermore, fuels, oils and lubricants used during the proposed liner raise activities would be handled in accordance with DWR material safety storage and handling protocols and BMPs that would contain and prevent spills from occurring on the proposed project site. Therefore, **no impact** would occur.

Issue IX.d

There are no identified hazardous material sites located within the proposed project site (California Department of Toxic Substance Control 2024; State Water Resources Control Board 2024). The proposed project would not be located on a hazardous materials site and **no impact** would occur.

Issue IX.e

The closest public airport is a private airstrip, Stone Land Company Airport, approximately 4 miles east of Pools 20 and 21 with a north-south orientation parallel to the Aqueduct. The proposed project is not located within an airport land-use plan or within 2 miles of a public airport or public use airport. **No impact** would occur.

Issue IX.f

During construction, there would be negligible numbers of workers (up to 60 employees) traveling to the proposed project site on a temporary basis. Operation activities would not change with the proposed project. No road closures would be required for the proposed project, and there would not be a permanent substantial increase in the number of people working or residing at or near the proposed project site. The proposed project would not impair implementation or physically interfere with any adopted emergency response plan or emergency evacuation plan. Therefore, **no impact** would occur.

Issue IX.g

The proposed project site is located within the Aqueduct and DWR right-of-way. According to CAL FIRE, the proposed project is not located in a Fire Hazard Severity Zone in a State Responsibility Area (California Department of Forestry and Fire Protection 2024). No structures are proposed as part of the project and construction activities would occur within the waterside of the Aqueduct embankments and within existing access roads and road aprons. The surrounding vegetation and agricultural land-use types have a low potential for wildland fires. In addition, as a standard DWR safety practice, all vehicles and equipment would have fire prevention equipment on-site, including fire extinguishers and shovels. Therefore, the proposed project would not increase the exposure of people or structures to wildland fires and the impact would be **less than significant**.

References

California Department of Forestry and Fire Protection

Undated "Fire Hazard Severity Zones" [Website.] Viewed online at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones. Accessed: Jul. 11, 2024.

California Department of Toxic Substances Control

2024 "EnviroStor" [Online mapping tool.] Viewed online at: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Search. Accessed: Jul. 10, 2024.

Lettis Consultants International, Inc.

2024 *Geologic Interpretation Report, Borrow Materials, Pools 17–18 & 20–21 Embankment Raise Projects, Western San Joaquin Valley, California Project Geology Report No. 52-00-91*. Last updated: Sep. 13, 2024.

State Water Resources Control Board

2024 "GeoTracker" [Online mapping tool.] Viewed online at: https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Search+GeoTracker. Accessed: Jul. 10, 2024.

3.2.10 Hydrology and Water Quality

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY—Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:				
i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
iii) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) Impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Environmental Setting

The proposed project site is within Tulare Lake Hydrologic Basin (California Department of Water Resources 2024). Major cities in the Tulare Basin include Fresno, Bakersfield, and Visalia. Major geographic features include Tulare Lake Basin, Kettleman Hills, Kings River, Kern River, Tule River, Tulare Lake, Kern Lake, and Buena Vista Lake. The Tulare Basin has mild winters and hot dry

summers. Despite transient tule marsh areas, the area is predominantly dry, and the valley summer heat is high. Less than 5 percent of the basin is urban in nature. The basin has been developed extensively for agriculture and petroleum extraction (U.S. Geological Survey 2024). The Regional Water Board publishes updates to the *Water Quality Control Plan for the Tulare Lake Basin* to improve water quality and maintain beneficial uses in the drainage area of the San Joaquin Valley south of the San Joaquin River. This basin plan describes water quality concerns for the area that include agriculture, forestry, urban land uses, and stormwater runoff (Central Valley Regional Water Quality Control Board 2018).

Portions of the proposed project site are in a 100-year flood zone. The Flood Hazard Zones (Zone A) are located to the east of the Aqueduct, directly adjacent to the entirety of the proposed project site (Federal Emergency Management Agency 2024).

Discussion

Issue X.a

The proposed project would include construction activities that would require earthwork activities such as site preparation, excavation, grading, and temporary stockpiling of soils, which would involve the disturbance and exposure of surface soils. In addition, construction activities would involve use of chemicals and solvents such as fuel and lubricating grease for motorized heavy equipment, which could accidentally spill and subsequently impact stormwater quality.

There is potential for stormwater to transport sediment or hazardous materials to the Aqueduct. Since project construction activities would disturb an area greater than 5 acres, the proposed project would be subject to a construction general permit under the NPDES permit program of the federal Clean Water Act. As required under the construction general permit, DWR or its contractor would prepare and implement a SWPPP. The objective of a SWPPP is to identify pollutant sources (such as sediment) that may affect the quality of stormwater discharge and to implement BMPs to reduce pollutants in stormwater.

In particular, erosion control BMPs would be used to prevent the degradation of water quality in the Aqueduct. Examples of erosion control BMPs are installing a silt fence, creating a sediment/desilting basin, installing sediment traps, using fiber rolls, creating gravel bag berms, and creating sandbag or straw bale barriers. BMPs would also include practices for proper handling of chemicals, such as avoidance of fueling at the construction site, prohibition of overtopping during fueling, and installation of containment pans. Implementation of the construction BMPs would begin with the commencement of construction and continue through the completion of the project to reduce the intrusion of foreign materials into the Aqueduct.

Implementation of the SWPPP and BMPs in compliance with the NPDES permitting requirements would avoid or reduce all erosion and sedimentation impacts to below a level of significance. As a result, impacts on water quality would be **less than significant**.

Issue X.b

The proposed project would not disrupt water deliveries, nor would it require the use of groundwater during construction activities. The Aqueduct is an existing concrete-lined canal; therefore, the proposed project would not change groundwater recharge, nor would it interfere with recharge compared to current conditions. In addition, the proposed project would not create impervious surfaces in the proposed project site that are not already impervious (e.g., the Aqueduct channel). Therefore, the proposed project would not decrease groundwater supplies or interfere with the recharge of groundwater. Therefore, there would be **no impact** on groundwater recharge.

Issue X.c.i

The proposed project would not introduce impervious surfaces or structures where existing impervious areas do not already exist. Temporary earthmoving activities would slightly alter the topography of the proposed project site to facilitate the liner raise activities, which could lead to areas of concentrated runoff or increased erosion. The proposed project also includes rerouting and replacing existing road drains in the proposed project site. Erosion control measures and BMPs would be implemented during construction to reduce the potential for stormwater-induced erosion or sedimentation off-site during project activities. All construction areas would also be regraded to match pre-project conditions once construction activities are completed, as described in Chapter 2, "Project Description." Thus, the proposed project would not substantially alter the existing drainage pattern of the proposed project site in a way such that substantial erosion or siltation would occur on-site or off-site. Impacts would be **less than significant**.

Issue X.c.ii

The proposed project would not substantially alter the local drainage pattern of the sites around Pools 20 and 21. Existing road drains in the proposed project site would be rerouted and replaced during project construction. The proposed project would not substantially change the rate or amount of surface runoff from the proposed project site. As such, the proposed project would not result in flooding on-site or off-site. Potential impacts would be **less than significant**.

Issue X.c.iii

An increase in runoff would not occur as a result of the project, considering that the liner raise sites would conform to the existing liner surface. Existing road drains in the proposed project site would be rerouted and replaced during project construction. As such, the proposed project would not contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.

The project would require implementation of a SWPPP, including BMPs for erosion control and for proper handling of chemicals. As such, the proposed project would not provide substantial additional sources of polluted runoff. Impacts would be **less than significant**.

Issue X.c.iv

The Federal Emergency Management Agency National Flood Hazard Layer for the proposed project site shows that Pools 20 and 21 are all located within a 1 percent Annual Chance Flood Hazard Zone (Federal Emergency Management Agency 2024). Therefore, the area is at low risk of experiencing flooding. Further, the proposed project would not involve the creation of large infrastructure or extensive construction activities that would impede or redirect flows. Impacts would be **less than significant**.

Issue X.d

The proposed project site is located far from the nearest ocean, the Pacific, and therefore is not located within the tsunami risk zone. Additionally, the proposed project site is not located near any sizeable bodies of water at risk of forming seiches and therefore is not located within a seiche zone. The proposed project is located within a 100-year flood zone; however, construction would be short-term and conclude within nine months and project equipment would not be stored in areas with potential floodwaters. The project would also involve the routine use of hazardous materials during construction, which could be at risk of release during a flood. However, construction contractors would be required to acquire coverage under the NPDES General Stormwater Permit, which requires the preparation and implementation of a SWPPP for construction activities. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, equipment and fuel storage; describe protocols for responding immediately to spills; and describe BMPs for controlling site run-on and runoff. The SWPPP prepared for the proposed project would identify BMPs to ensure the lawful transport, use, storage, and disposal of hazardous materials. With the implementation of a SWPPP and the adherence to federal, State, and local regulations related to the handling of hazardous materials, the proposed project would have a **less-than-significant impact**.

Issue X.e

The proposed project would not involve pumping or extraction of groundwater. Erosion-control measures and BMPs would be implemented during construction to reduce the potential for erosion or sedimentation off-site during project activities. Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules. **No impact** on water quality control plans or sustainable groundwater management plans would occur.

References

California Department of Water Resources

2024 “Water Management Planning Tool” [Online mapping tool.] Viewed online at: https://gis.water.ca.gov/app/boundaries/. Accessed: Jul. 10, 2024.

Central Valley Regional Water Quality Control Board

2018 *Water Quality Control Plan for the Tulare Lake Basin, Third Edition*. Viewed online at: https://www.waterboards.ca.gov/rwqcb5//water_issues/basin_plans/tularelakebp_201805.pdf. Accessed: Jul. 10, 2024. May 2018.

Federal Emergency Management Agency

2024 "FEMA's National Flood Hazard Layer (NFHL) Viewer" [Online mapping tool.] Viewed online at: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed: Jul. 10, 2024.

U.S. Geological Survey

2024 "The Central Valley: Tulare Basin" [Website.] Viewed online at: https://ca.water.usgs.gov/projects/central-valley/tulare-basin.html. Accessed: Jul. 10, 2024.

3.2.11 Land Use and Planning

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XI. LAND USE AND PLANNING—Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Environmental Setting

The proposed project would raise portions of the concrete liner of Pools 20 and 21 in Fresno and Kings Counties. The liner raise in Pools 20 and 21 would be located along the Aqueduct between Aqueduct MP 158.7 and MP 170.3. The northernmost site, Pool 20 at MP 158.7, is approximately 2.8 miles east of the town of Huron. The southernmost site, Pool 21 at MP 170.3, is approximately 2.4 miles north of Kettleman City. The surrounding land uses include agricultural fields and associated infrastructure and undeveloped land. The portion of the proposed project site within Fresno County is zoned as Exclusive agriculture (AE-20 and AE-40) while the portion within the County of Kings is un-zoned with adjacent land zoned as General Agriculture (AG-40), with areas zoned as Heavy Industrial (M2) near Avenal (County of Fresno 2024; County of Kings 2020; City of Avenal 2021).

Discussion

Issue XI.a

Kettleman City, the community nearest to the proposed Aqueduct construction areas, is located approximately 2.4 miles to the southeast of the southern end of Pool 21. The proposed project includes upgrades to the existing Aqueduct and does not involve building any structures, such as roads or freeways, with the potential to physically divide a community. Therefore, **no impact** would occur.

Issue XI.b

The liner raises would occur on the waterside of the Aqueduct. Access to the construction areas would occur on existing roadways and service roads, including access roads on top of both sides of the Aqueduct embankments. The proposed project is consistent with surrounding land uses; therefore, project construction would not conflict with any land-use plan, policy, or regulation. **No impact** would occur.

References

City of Avenal

2021 "City of Avenal" [Zoning map.] Scale not given. Viewed online at: https://www.cityofavenal.com/DocumentCenter/View/3714/Avenal-Zoning-Map--Updated-9-2021. Accessed: Mar. 4, 2024. Last updated: September 2021.

County of Fresno

2024 "County of Fresno – Zoning" [Online mapping tool.] Viewed online at: https://gisportal.co.fresno.ca.us/portal/apps/webappviewer/index.html?id=b921843d343d4df998b5b3c6a301756a. Accessed: Jul. 11, 2024.

County of Kings

2020 "County of Kings Parcel and Services Map Viewer" [Online mapping tool.] Viewed online at: https://kingscomdev.maps.arcgis.com/apps/webappviewer/index.html?id=35c6e6dac50446b9945154c9fc7f46c8. Accessed: Jul. 11, 2024.

3.2.12 Mineral Resources

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XII. MINERAL RESOURCES—Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Environmental Setting

In accordance with the Surface Mining and Reclamation Act of 1975, the California Department of Conservation, Division of Mines and Geology, currently known as the California Geological Survey, has mapped nonfuel mineral resources of the State to show where economically significant mineral deposits are either present or likely to occur based on the best available scientific data. These resources have been mapped using the California Mineral Land Classification System, which includes the following six Mineral Resource Zones (MRZs):

- MRZ-1: An area where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2a: An area where adequate information indicates that significant measured or indicated mineral reserves are present.
- MRZ-2b: An area where geologic information indicates that significant inferred resources or demonstrated subeconomic resources are present.
- MRZ-3a: An area likely to contain undiscovered mineral deposits similar to known deposits in the same producing district or region (hypothetical resources).
- MRZ-3b: An area judged to be a favorable geologic environment for mineral resource occurrences, but where mineral discoveries have not been made in the region (speculative resources).
- MRZ-4: An area where geologic information does not rule out either the presence or absence of mineral resources.

The California Department of Conservation's Geologic Energy Management Division oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells in California, and tracks all known oil and gas wells.

The proposed project site is not located in Mineral Land classification/Surface Mining and Reclamation Act designated areas (California Department of Conservation 2024a). There are no existing mines in the proposed project site; the closest is Sierra Pacific Materials, a sand and gravel mine approximately 10 miles west of the proposed project site (California Department of Conservation 2024b).

Discussion

Issue XII.a, b

The proposed project site is not included on any CGS maps or reports identifying potentially important mineral resources. Fresno County and Kings County land-use maps also do not identify any locally important mineral resources in the proposed project site. Therefore, **no impact** would occur.

References

California Department of Conservation

2024a. "CGS Information Warehouse: Mineral Land Classification" [Website.] Viewed online at: https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc. Accessed: Jul. 11, 2024.

2024b. "Mines Online" [Online mapping tool.] Viewed online at: https://maps.conservation.ca.gov/mol/index.html. Accessed Jul. 10, 2024.

3.2.13 Noise

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XIII.NOISE—Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 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?	☐	☐	☐	☒

Environmental Setting

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). Sound pressure level is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. Given that the typical human ear is not equally sensitive to all frequencies of the audible sound spectrum, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes low and extremely high frequencies, referred to as A-weighting, and is expressed in units of A-weighted decibels (dBA).

Noise Exposure and Community Noise

Noise levels rarely persist consistently over a long period. Rather, noise levels at any one location vary with time. Specifically, community noise is the result of many distant noise sources that constitute a relatively stable background noise exposure where the individual contributors are unidentifiable. Throughout the day, short duration single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) that are readily identifiable to the individual add to the existing background noise level. The combination of the slowly changing background noise and single-event noise events give rise to a constantly changing community noise environment.

To legitimately characterize a community noise environment and evaluate cumulative noise impacts, community noise levels must be measured over an extended period of time. This time-varying characteristic of environmental noise is described using statistical noise descriptors, including the ones described below:

- **Leq:** The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The Leq is the constant sound level that would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).
- **Lmax:** The instantaneous maximum noise level measured during the measurement period of interest.
- **Ldn:** The day-night average sound level (Ldn) is the energy average of the A-weighted sound levels occurring during a 24-hour period, accounting for the greater sensitivity of most people to nighttime noise by weighting ("penalizing") nighttime noise levels by adding 10 dBA to noise between 10 p.m. and 7 a.m.

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of the decibel system. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Kings County

The most prevalent individual traffic noise sources in Kings County are the primary north to south freeway, I-5, and the many other major roadways within the County including sections of roadways such as SR 33, SR 41, SR 43, SR 137, and SR 198.

Farming operations are common throughout nearly all of Kings County except the mountainous areas to the southwest and heavily developed areas within the larger communities. Some of the more common noise sources associated with farming operations include tractors, harvesting equipment, spray equipment, cotton ginning operations, aerial crop dusters, and stationary power sources, including internal combustion pump engines.

The ambient noise environment in Kings County is defined by traffic on highways and County roadways, commercial and industrial uses, agricultural uses, railroad operations on the Burlington Northern Santa Fe Railroad and the San Joaquin Valley Railroad, and aircraft (County of Kings 2009).

The closest public airport to the proposed project site is the Avenal Airport located approximately 8 miles southwest and the closest private airstrip is Stone Land Company Airport, approximately 4 miles east of Pools 20 and 21.

Fresno County

The most prevalent individual traffic noise sources in Fresno County are the two primary north-south freeways, I-5 and SR 99, and the many other major roadways within the County including sections of SR 33, SR 41, SR 43, SR 63, SR 145, SR 168, SR 180, SR 198, and SR 269 and Herndon, Shaw, and Clovis Avenues within Fresno and Clovis city limits.

Other expressways and arterials within the unincorporated County also have substantial local influences on noise levels. The most intense traffic noise sources tend to be those with heavy truck traffic and high proportions of nighttime traffic.

The notable noise generating industrial sources are agricultural processing operations and mining or building/landscaping materials processing, such as cement batch plants (County of Fresno 2023).

Discussion

Issue XIII.a

The Fresno County General Plan and Noise Ordinance do not establish quantitative noise exposure standards that apply to construction activity. The Kings County General Plan established a daytime range of 55−75 dB for nearby receiving residential sites. For the purposes of due diligence, resultant noise levels from simultaneous operations of the two noisiest pieces of construction equipment were estimated, consistent with the general assessment methodology of the Federal Transit Administration. Using this method and conservatively assuming simultaneous operation of the two noisiest pieces of equipment, concrete mixers and excavators, would result in a noise level of 88 dBA at a reference distance of 50 feet. The closest sensitive receptor is located approximately 500 feet west of the Pool 21 construction site along Quebec Avenue. At this distance, noise levels would be approximately 68 dBA and would be lower than the County of Kings noise standards of 75 dBA. Therefore, the proposed project would not result in 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, during construction. Therefore, the project would result in **less-than-significant impacts**.

Issue XIII.b

Groundborne vibration from construction activities in the proposed project site would produce negligible vibration. The types of construction equipment associated with the proposed project

include excavators, dump trucks, pickup trucks, forklifts, skid steer loaders, compacters, concrete mixers, and generators (see Table 2-4). This type of equipment is identified by Caltrans (2020) and the Federal Transit Administration (2018) as associated with the generation of continuous vibration. While the closet residence is approximately 500 feet from the proposed project site, vibration attenuates rapidly with distance and would be imperceptible at the distances to the closest structures and sensitive receptors. Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules. Therefore, vibration associated with the proposed project would result in **less-than-significant impacts**.

Issue XIII.c

The proposed project would not establish new noise sensitive land uses that could be exposed to noise from local airports. The proposed project site is located in a rural area that is distant from commercial or general aviation airports. The closest public airport is the Avenal Airport, which is located approximately 8 miles southwest, and the closest private airstrip is Stone Land Company Airport, which is approximately 4 miles east of Pools 20 and 21. The proposed project would not result in any land use or operational changes that would expose people residing or working in the proposed project site to excessive noise levels in relation to airports. There would be a **less-than-significant impact**.

References

California Department of Transportation

2020 *Transportation and Vibration Guidance Manual*. Last updated: April 2020.

County of Fresno

2023 *Fresno County General Plan Background Report – General Plan Review and Revision* [Government report.] Draft. Viewed online at: https://www.fresnocountyca.gov/files/sharedassets/county/v/2/public-works-and-planning/development-services/planning-and-land-use/general-plan/fcgpr-background-report-2023-05-10.pdf. Accessed: Sep. 19, 2024. Last updated: April 2023.

County of Kings

2009 *2035 Kings County General Plan Update Environmental Impact Report*. Prepared by: Rincon Consultants, Inc. Prepared for: County of Kings. Viewed online at: https://www.countyofkingsca.gov/home/showpublisheddocument/5897/635342995809030000. Accessed: Mar. 4, 2025. Last updated: October 2009.

U.S. Department of Transportation, Federal Transit Administration

2018 *Transit Noise and Vibration Impact Assessment*. Last updated: September 2018.

3.2.14 Population and Housing

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XIV. POPULATION AND HOUSING—Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Setting

Fresno County had a population of 1,024,125 as of 2024, indicating a 1.5 percent growth rate when compared to the Fresno County population of 1,008,654 in 2020. As of 2023, Fresno County contained 347,957 housing units with an owner-occupied housing unit rate of 55.4 percent (U.S. Census Bureau 2024a). Kings County has a population of 154,913 as of 2024, indicating a 1.6-percent growth rate when compared to the County of Kings population of 152,486 in 2020. As of 2023, Kings County contained 47,425 housing units with an owner-occupied housing unit rate of 54.8 percent (U.S. Census Bureau 2024b).

Discussion

Issue XIV.a

The proposed project would not involve the construction of new homes, businesses, extensions of roads, or other infrastructure that would directly or indirectly induce substantial unplanned population growth. Construction activities associated with the proposed project would generate a minimal number of workers (up to 60 employees) to the proposed project site on a temporary basis (approximately nine months). Construction workers employed for these activities are expected to come from the existing labor pool within the region. Implementation of the proposed project would not directly or indirectly induce substantial population growth. Therefore, **no impact** would occur.

Issue XIV.b

The proposed project would not displace any existing housing or people, and it does not involve the construction of new homes. Therefore, **no impact** would occur.

References

U.S. Census Bureau

2024a "Quick Facts Fresno County, California" [Website.] Viewed online at: https://www.census.gov/quickfacts/fact/table/fresnocountycalifornia/PST045223. Accessed: Jul. 11, 2024.

2024b "QuickFacts Kings County, California" [Website.] Viewed online at: https://www.census.gov/quickfacts/kingscountycalifornia. Accessed: Jul. 10, 2024.

3.2.15 Public Services

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XV. PUBLIC SERVICES—				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Environmental Setting

Police Services

The Fresno County Sheriff's Office provides law enforcement response to unincorporated territories of the County of Fresno. The Fresno County Sheriff's Office patrols more than 6,000 square miles of Central California (Fresno County Sheriff's Office 2019). The Kings County Sheriff's Office provides law enforcement response to unincorporated territories of the County of Kings (Kings County Sheriff's Office 2020).

Fire Services

The Fresno County Fire Protection District serves all unincorporated areas of the County of Fresno. The Fresno County Fire Protection District encompasses approximately 2,655 square miles and serves a population of more than 220,000 citizens (Fresno County Fire Protection District 2024).

The Kings County Fire Department serves all unincorporated areas of the County of Kings as well as the Cities of Avenal and Corcoran. The Kings County Fire Department encompasses approximately 1,392 square miles and through their Divisions of Fire Prevention, Operations & Training, and Office of Emergency Services, the Kings County Fire Department serves the entire County (Kings County Fire Department 2020).

Other Public Services

The nearest school to the proposed project site is Kettleman City Elementary School, approximately 2.7 miles southeast of the proposed project site. There are no parks or other public facilities near the proposed project site.

There are no existing neighborhood or regional parks or other recreational facilities in the vicinity of the proposed project site. The closest parks are in Kettleman City, approximately 2.6 miles southeast of the proposed project site.

Discussion

Issue XV.a.i, ii

In the event of a fire or other emergency within the proposed project site, it is anticipated that existing fire protection and police services in Fresno and Kings Counties would be able to sufficiently respond to emergency events with existing equipment and staffing capacities. The proposed project would be implemented within existing facilities and access roads, and operation activities would not change with the proposed project. As a result, relative to existing conditions, the proposed project would not introduce new facilities that would require additional emergency response services. Therefore, implementation of the proposed project would not require new fire or police facilities to maintain response ratios, service ratios, or other measures of performance. Impacts would be **less than significant**.

Issue XV.a.iii

The proposed project would not result in an increase in population. As a result, the proposed project would not lead to the construction of new housing which would prompt a need for additional school services. Therefore, the proposed project would have **no impact** related to school services.

Issue XV.a.iv

The proposed project would not result in an increase in population and would not prompt the need for new parks. Therefore, the proposed project would have **no impact** related to parks.

Issue XV.a.v

The proposed project would not include new housing or bring new businesses to the area that would require any additional services or public facilities, including libraries. Therefore, the proposed project would have **no impact** related to other public facilities.

References

Fresno County Sheriff's Office

2019 *2019 Fresno County Sheriff's Office Annual Review*. Viewed online at: https://publicinfo.fresnosheriff.org/docs/DocView.aspx?id=6514&dbid=0&repo=SheriffPublic. Accessed: Jul. 11, 2024.

Fresno County Fire Protection District

2024 "Fresno County Fire Battalion 14" [Website.] Viewed online at: https://www.fresnocountyfire.org/fresno-county-fire-battalion-14. Accessed: Jul. 11, 2024.

Kings County Fire Department

2020 "Kings County Fire Department" [Website.] Viewed online at: https://www.countyofkingsca.gov/departments/public-safety/fire-department. Accessed: Jul. 10, 2024.

Kings County Sheriff's Office

2020 "Sheriff" [Website.] Viewed online at: https://www.countyofkingsca.gov/departments/public-safety/sheriff. Accessed: Jul. 10, 2024.

3.2.16 Recreation

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVI. RECREATION—				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐

Environmental Setting

There are no existing neighborhood or regional parks or other recreational facilities in the vicinity of the proposed project site. The closest parks are Chestnut Park and Huron Community Park, which are located approximately 3.4 miles northwest of the northern end of Pool 20. DWR does allow fishing along segments of the Aqueduct. The closest designated Aqueduct fishing access site to the proposed project site is the Avenal Cutoff Site which is located along the Aqueduct near the southern end of Pool 20. The Avenal Cutoff Site may need to be temporarily closed during construction as it is located within the proposed project site (California Department of Water Resources 2020).

Discussion

Issue XVI.a, b

The proposed project site does include recreational facilities. Construction could temporarily limit access to fishing in the proposed project site during construction of the proposed project; however, impacts would be temporary. Access to the fishing sites would not be permanently affected and access would be unchanged from existing conditions following the completion of construction activities. Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules. The proposed project would not result in substantial population growth, resulting in no increase in the use of recreational facilities and requiring no construction or expansion of recreational facilities. Therefore, **less-than-significant impacts** would occur.

References

California Department of Water Resources

2020 *Fishing along the SWP*. Viewed online at: https://calsport.org/wp-content/uploads/DWR_Fishing-Along-the-SWP.pdf. Accessed: Sep. 19, 2024.

3.2.17 Transportation

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVII. TRANSPORTATION—Would the project:				
a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Environmental Setting

Fresno and Kings Counties have comprehensive transportation systems that include State highways, local roads, rural highways and streets, bus transit services, freight rail, and airports (primarily private airstrips) (Fresno County Council of Governments 2022; Kings County Association of Governments 2018). The proposed project site is approximately 2.7 miles to the east of I-5 and approximately 2.6 miles east of SR 269 at its closest point in-between Pools 20 and 21.

I-5 is the primary north-south route for interregional and interstate business, freight, tourist, and recreation travel, linking Southern and Northern California. The rural highway system accommodates not only people but is a particularly vital aspect of the freight-based economy. I-5 is one of the most important roadways in the area due to its connection to nearby counties and carries a significant portion of intra-county traffic (Fresno County Council of Governments 2022; Kings County Association of Governments 2018).

Discussion

Issue XVII.a

The proposed project would result in the temporary addition of project-related vehicles to local roadways over the nine-month construction period. All equipment and materials would be transported to the site on public highways, local roads, and private driveways, using standard transport vehicles.

Specific to the concrete liner raise, which is the activity that would require the most construction workers and vehicle trips per day, up to 60 construction workers are anticipated to be required for the concrete liner raise and approximately eight truck trips per day for 29 weeks would be needed to deliver concrete to the site. Anticipated labor force and truck trips for all project activities are listed in Chapter 2 in Table 2-1 and Table 2-2**,** respectively.

The majority of traffic would occur from the daily arrival and departure of workers. A maximum of up to 60 workers would be required at the site per day. The addition of 120 worker round trips (60 one-way trips) along local roads would not substantially affect circulation capacity, and therefore, the trips would not substantially affect the capacity of the local roadways. Traffic control is not anticipated to be required along local roadways. DWR would coordinate with the appropriate property owners if private road access is required at any point. All worker parking would be accommodated at the staging areas; however, carpooling may be required if up to 60 workers are needed at any given time (which would reduce the number of overall trips). Project-generated traffic and operational maintenance would be temporary, and therefore, would not result in any long-term degradation in operating conditions on local roadways used for the project. Impacts on the local circulation system would be **less than significant**.

Further, the proposed project would not conflict with adopted policies, plans, or programs related to public transit or alternative modes of transportation. The proposed project would not decrease the performance or safety of these facilities, which are sparse within the largely rural proposed project site. Project activities would not disrupt services along local public transit, bicycle, or pedestrian routes. **No impact** would occur.

Issue XVII.b

“Vehicle miles traveled” (VMT) refers to the amount and distance of automobile travel attributed to a project. A maximum of 60 workers and eight truck trips would be required during the concrete liner raise, which would be the project activity that would require the most construction workers and vehicle trips per day. These trips would be temporary over the approximately nine-month construction period and would not result in any perceivable increase in vehicle miles traveled.

The CEQA Guidelines and the Governor’s Office of Planning and Research (which is now known as the Governor’s Office of Land Use and Climate Innovation) Technical Advisory on evaluating transportation impacts, note that CEQA provides a categorical exemption (Section 15303) for additions to existing structures of up to 10,000 square feet, so long as the project is in an area that is not environmentally sensitive and where public infrastructure is available. The Governor’s Office of Planning and Research determined that “typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract 110-124 trips per 10,000 square feet.” (Governor’s Office of Planning and Research 2018). They concluded that, absent substantial evidence otherwise, the addition of 110 or fewer daily trips could be presumed to have a less-than-significant VMT impact.

There are no new permanent vehicle trips associated with the proposed project. Because the proposed project's trips would be below the 110-trip threshold in the Governor's Office of Planning and Research guidelines, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b). **No impact** would occur.

Issue XVII.c

The proposed project would use existing roads for construction activities. The proposed project does not include the construction or design of any roadway infrastructure that would cause a safety risk to vehicle operations. The proposed project would not adversely alter the physical configuration of the existing roadway network serving the area and would not introduce unsafe design features associated with large equipment transport. In addition, the proposed project would not introduce uses (types of vehicles) that are incompatible with existing uses already served by the area's road system. **No impact** would occur

Issue XVII.d

The proposed project would temporarily add vehicles to the local roadway and circulation system. However, no lane or road closures would be required. The proposed project would not interfere with emergency response access. **No impact** would occur.

References

Fresno County Council of Governments

2022 *Regional Transportation Plan and Sustainable Communities Strategy*. Viewed online at: https://www.planfresno.com/sustainable-communities-strategies-fall-outreach/. Accessed: Sep. 10, 2024. Adopted: Jul. 28, 2022.

Governor's Office of Planning and Research

2018 *Technical Advisory On Evaluating Transportation Impacts In CEQA* [Government report.] Viewed online at: https://lci.ca.gov/ceqa/docs/20190122-743_Technical_Advisory.pdf. Accessed: Mar. 27, 2025. Last updated: December 2018.

Kings County Association of Governments

2018 2018 Regional Transportation Plan. Viewed online at: https://www.kingscog.org/vertical/Sites/%7BC427AE30-9936-4733-B9D4-140709AD3BBF%7D/uploads/KCAG_2018_RTPSCS_Full_Document.pdf. Accessed: Sep. 10, 2024. Adopted: Last updated: Aug. 22, 2018.

3.2.18 Tribal Cultural Resources

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES—				
a) 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:				
i) 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	☐	☒	☐	☐
ii) 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.	☐	☒	☐	☐

This section examines the potential impacts of the proposed project on Tribal cultural resources. Much of the background context and methods used for the analysis of potential impacts from the proposed project on Tribal cultural resources and cultural resources are the same. Therefore, to avoid redundancy, this information, which is presented in Section 3.2.5, “Cultural Resources,” is not repeated here.

Environmental Setting

California Historical Resources Information System Records Search

The methods for the CHRIS records searches are presented in Section 3.2.5, “Cultural Resources”; the following summarizes the results. The SSJVIC records search indicates that seven cultural resources, including one pre-contact archaeological isolate (P-10-007345), have been previously recorded within the proposed project site. In addition, ESA recorded another pre-contact archaeological isolate in the proposed project site (ESA-LinerRaise-ISO-002P), which is not on file at the SSJVIC, as part of a cultural resources study conducted on portions of the proposed project site

from 2020 to 2022, as reported on by Ehringer et al. (2023). In summary, two pre-contact archaeological resources appear to have been previously recorded in the proposed project site.

The SSJVIC has record of seven previous cultural resources studies that have been conducted within 0.25 mile of the proposed project site, with six of these covering some portion of the proposed project site. Cumulatively, these reports covered approximately 5 percent of the proposed project site. As mentioned earlier, portions of the proposed project site were surveyed by ESA from 2020 to 2022 and reported on by Ehringer et al. (2023); that study covered approximately 99 percent of the current proposed project site.

Ethnographic Literature Research

The only clearly documented ethnographic village sites in the vicinity of the proposed project site are the Southern Valley Yokut village *Walna*, approximately 2 miles east of the southern portion of the proposed project site, and the Southern Valley Yokut village *Golon*, near the present-day community of Huron approximately 2.5 miles northwest of the northern end of the proposed project site (Kroeber 1976 [1925]; Wallace 1978).

Native American Correspondence

The NAHC maintains a confidential SLF, which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on July 19, 2024, to request a search of the SLF for the proposed project site and vicinity. The NAHC replied on July 22, 2024, stating that the SLF has no record of any resources in or near the proposed project site. The responses also provided contact information for 14 individuals representing California Native American Tribes (Tribes) that may be traditionally and culturally affiliated with the proposed project site.

In support of required Native American consultation for the proposed project pursuant to Public Resources Code Section 21080.3.1, as well as in accordance with the California Natural Resources Agency's *Final Tribal Consultation Policy* and DWR's *Tribal Engagement Policy*, on October 10, 2024, DWR sent a letter via certified mail to the Santa Rosa Rancheria Tachi Yokut Tribe providing information on the proposed project and requesting that the Tribe notify DWR if they would like to consult pursuant to Public Resources Code Section 21080.3.1. On October 11, 2024, DWR sent an email with attachments to the Santa Rosa Rancheria Tachi Yokut Tribe with the same project-related information and request as the letter. DWR sent a follow-up email to the Tribe regarding the proposed project on November 13, 2024, and left a voicemail message on May 5, 2025. To date, the Santa Rosa Rancheria Tachi Yokut Tribe has not provided any response to this outreach.

In accordance with the California Natural Resources Agency's *Final Tribal Consultation Policy* and DWR's *Tribal Engagement Policy*, on October 10, 2024, DWR sent letters via certified mail to the other Tribes identified by the NAHC besides the Santa Rosa Rancheria Tachi Yokut Tribe, as follows:

- Amah Mutsun Tribal Band
- Big Sandy Rancheria of Western Mono Indians
- Cold Springs Rancheria of Mono Indians

- Dumna Wo-Wah Tribal Government
- Dunlap Band of Mono Indians
- Kitanemuk & Yowlumne Tejon Indians
- Northern Valley Yokut/Ohlone Tribe
- Salinan Tribe of Monterey, San Luis Obispo Counties
- Sierra Foothill Wuksachi Yokuts Tribe
- Table Mountain Rancheria
- Traditional Choinumni Tribe
- Tule River Indian Tribe
- Wuksachi Indian Tribe/Eshom Valley Band
- Xolon-Salinan Tribe

The letters provided information on the proposed project and requested that the recipients provide information on cultural resources that may be affected by the proposed project, if they would like to do so. On October 11, 2024, DWR sent emails with attachments to these same Tribes with the same project-related information and request as the letters. On October 14, 2024, the Chairperson of the Xolon-Salinan Tribe sent an email to DWR stating that her Tribe did not wish to consult on the proposed project. On October 16, 2024, the Chairperson of the Traditional Choinumni Tribe contacted DWR by telephone stating that his Tribe did not wish to consult on the proposed project. Upon receipt of updated contact information, on November 6, 2024, DWR sent a follow-up letter, via certified mail, to the Tule River Indian Tribe. DWR sent a follow-up email with attachments to the Amah Mutsun Tribal Band on November 13, 2024. To date, no other communications with Tribes regarding the proposed project have occurred. Documentation of the proposed project correspondence with Tribes to date is included in Appendix D.

Field Survey

The methods for the field survey are presented in Section 3.2.5; the following summarizes the results. During the survey, neither of the previously recorded archaeological resources (both isolates) mapped in the proposed project site (P-10-007354, ESA-LinerRaise-ISO-002P) were observed in the proposed project site. One previously unrecorded archaeological site (ESA-CASP-24-01), a pre-contact flaked-stone scatter, was observed outside the proposed project site. After initial observation of this resource, DWR and Reclamation determined that the proposed project site could be revised to completely avoid the resource. As such, the resource is not considered in the current proposed project site. Also during the survey, one previously unrecorded archaeological isolate (ESA-CASP-24-ISO-01), a pre-contact basalt scraper/chopper, was identified in the proposed project site. In summary, one pre-contact archaeological resource, a basalt scraper/chopper isolate (ESA-CASP-24-ISO-01), was identified in the proposed project site. Hoffman et al. (2025) evaluated ESA-CASP-24-ISO-01, recommending it not eligible for the California Register.

Summary of Tribal Cultural Resources Identification Efforts

In summary, through background research, Native American consultation and correspondence, and field survey conducted for the proposed project, no Tribal cultural resources, including any indigenous archaeological resources or human remains that could qualify as Tribal cultural resources, were identified in the proposed project site.

Discussion

Issue XVIII.a.i, ii

No Tribal cultural resources, as defined in Public Resources Code Section 21074, have been identified in the proposed project site through archival research, a field survey, or Native American consultation. Therefore, there is no substantial evidence of the presence of any Tribal cultural resources in the proposed project site and the proposed project is not expected to impact any Tribal cultural resources, as defined in Public Resources Code Section 21074.

Although there is no substantial evidence that any Tribal cultural resources are in the proposed project site, the proposed project would involve ground-disturbing activities that may extend into undisturbed soil. It is possible that such activities could unearth, expose, or disturb subsurface Tribal cultural resources, as defined in Public Resources Code Section 21074, that were not identified on the surface. Any impact of the proposed project on such Tribal cultural resources would be potentially significant. Such potentially significant impacts would be reduced to **less than significant with mitigation incorporated** by implementing **Mitigation Measures CUL-1 and CUL-2** (see Section 3.2.5).

Implementing **Mitigation Measure CUL-1** would reduce impacts to less than significant by ensuring that any unanticipated archaeological discoveries are promptly evaluated and appropriately protected or treated by qualified professionals and Tribes, thereby preventing inadvertent damage to potentially significant cultural resources. Implementing **Mitigation Measure CUL-2** would reduce impacts to less than significant by halting construction should human remains be discovered and ensuring that any discovered human remains are respectfully evaluated by appropriate authorities, protected and documented.

References

Ehringer C, Kellar AG, Vader M, Clark F, Bocchieriyan S, Varmi A.

2023 *California Aqueduct San Luis Canal Embankment and Liner Raise Project, Fresno and Kings Counties, California: Cultural Resources Survey*. Prepared by: Environmental Science Associates. Prepared for: California Department of Water Resources. Last updated: March 2023.

Hoffman R, Kellar AG, Hrycyk A, Zimmer P.

2025 *California Aqueduct Subsidence Program (CASP) Pools 20–21 Liner Raise Project, San Lu Report is Field Division, Fresno and Kings Counties, California: Cultural Resources Inventory Report*. Prepared by: Environmental Science Associates. Prepared for: California Department of Water Resources. Last updated: February 2025.

Kroeber AL.

1976 [1925] *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Washington (DC): Smithsonian Institution. 1976 Reprinted Edition. New York (NY): Dover Publications, Inc.

Wallace W.

1978 "Southern Valley Yokuts." In: Heizer RF, editor. *California*. Washington (DC): Smithsonian Institution. Pages 462–470. Sturtevant WC. *Handbook of North American Indians*, Volume 8.

3.2.19 Utilities and Service Systems

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

Environmental Setting

The Westlands Water District is the nearest water supplier in the vicinity of the proposed project site. Westlands Water District provides water to more than 1,000 square miles of prime farmland in

western Fresno and Kings Counties and serves Central Valley Project water to farms through 1,100 miles of underground pipe and more than 3,000 water meters (Westlands Water District 2020). Other local water districts provide municipal water to surrounding areas via pump stations, pipelines, and other water storage and conveyance facilities.

Solid waste that is generated by proposed construction activities along Pools 20 and 21 would likely be sent to the Avenal Regional Landfill, which is located approximately 6.2 miles southwest of the proposed project site. The facility offers disposal services for construction/demolition wastes, industrial wastes, agricultural wastes, and other waste types that may be generated by the proposed project. According to the most recent updates in August 2020, this landfill has a remaining capacity of 28,900,000 cubic yards (California Department of Resources Recycling and Recovery 2024).

Fresno and Kings Counties are serviced by Pacific Gas and Electric Company (Pacific Gas and Electric Company 2014a, 2014b) for both electric and gas needs. There are gas pipelines within the proposed project site (U.S. Department of Transportation 2024), however they are not within the project site; the closest pipeline is approximately 1 mile to the west near Kettleman City. There are also overhead power lines within the proposed project site (California Energy Commission 2024), which cross over the Aqueduct at West Gale Avenue.

Discussion

Issue XIX.a

The proposed project would generate a minimal number of workers (up to approximately 60) to the proposed project site on a temporary basis during the approximately nine-month construction window. It is anticipated that these workers would come from the existing labor pool in the region and would not generate an increase in the population relative to the existing conditions. The proposed project may require limited use of potable water during construction activities. No water or wastewater treatment facilities would be installed as part of the proposed project and there are no proposed project activities that would require new electric power, natural gas, or telecommunications facilities. Therefore, the proposed project would not create a need to construct new or modified utilities and service systems.

The proposed project would not substantially alter the local drainage pattern of the proposed project site. The proposed project does not include the construction of new large structures or impervious surfaces that would substantially alter or change the rate or amount of surface runoff from the proposed project site. Therefore, the proposed project would not require the construction or expansion of new stormwater drainage facilities. Therefore, there would be no construction of utility infrastructure associated with the proposed project, and **no impact** would occur.

Issue XIX.b

Water may be needed temporarily during implementation of the proposed project. Water for dust suppression could be pumped from the Aqueduct. If that source of water is insufficient, and other sources cannot be used, the construction contractor would pay for water to be brought to the

proposed project site from local water suppliers for dust suppression. Water demand for dust suppression would be temporary, and no new or expanded entitlements would be required. Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules. Therefore, potential impacts associated with availability of water supplies would be **less than significant**.

Issue XIX.c

The proposed project may result in the generation of wastewater associated with temporary use of portable toilets. During project implementation, DWR or the contractor may have portable toilet facilities available on-site temporarily for use by construction workers. Given the relatively small construction workforce of a maximum of 60 workers on-site daily for the up to nine-month construction period, this amount of wastewater would be minimal and it would be properly handled and disposed of in accordance with all applicable laws and regulations. Once construction activities were concluded, any portable facilities would be removed. Therefore, the proposed project would not require a wastewater treatment provider to serve the proposed project site. **No impact** would occur.

Issue XIX.d

Implementation of the proposed project would result in nominal solid waste, limited to trash and other construction-related materials. The proposed project would not demolish existing facilities on-site but would require materials for the liner raise and drainage pipe installation.

The Avenal Regional Landfill, which is located within 6.5 miles of the proposed project site, has remaining capacity of 28,900,000 cubic yards, should it need to be used (California Department of Resources Recycling and Recovery 2024). The project would result in **less-than-significant impact** related to local infrastructure capacity and would not impair attainment of solid waste reduction goals.

Issue XIX.e

As stated above, implementation of the proposed project would result in nominal solid waste. Statewide policies regarding solid waste have become progressively more stringent, reflecting Assembly Bill 939, which requires local government to develop waste reduction and recycling policies and meet mandated solid waste reduction targets. For the minor amount of solid waste anticipated to be produced by the proposed project, DWR would comply with all laws and regulations related to the disposal and recycling of waste. There would be **no impact**.

References

California Department of Resources Recycling and Recovery

2024 “SWIS Facility/Site Activity Details: Avenal Regional Landfill (16-AA-0004)” [Website.] Viewed online at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3755?siteID=898. Accessed: Jul. 11, 2024.

California Energy Commission

2024 "California Electric Transmission Lines" [Online mapping tool.] Viewed online at: https://cecgis-caenergy.opendata.arcgis.com/datasets/260b4513acdb4a3a8e4d64e69fc84fee_2/explore?location=36.098202%2C-119.930079%2C10.89. Accessed: Jul. 11, 2024.

Pacific Gas and Electric Company

2014a *Electric Service Area Maps*. Viewed online at: https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_MAPS_Service%20Area%20Map.pdf. Accessed: Jul. 11, 2024. Filed: Nov. 17, 2014. Effective: Dec. 17, 2014.

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U.S. Department of Transportation

2024 "NPMS Public Viewer" [Online mapping tool.] Viewed online at: https://pvnpms.phmsa.dot.gov/PublicViewer/. Accessed: Jul. 11, 2024.

Westlands Water District

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3.2.20 Wildfire

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XX. WILDFIRE—If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☒	☐	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Environmental Setting

The proposed project site is not located in a State responsibility area or designated moderate, high, or very high Fire Hazard Severity Zone. The proposed project site is located in a Local Responsibility Area (California Department of Forestry and Fire Protection 2024).

Discussion

Issue XX.a

Implementation of the proposed project is not anticipated to substantially impair an adopted emergency response plan or evacuation plan or interfere with emergency response access to the project vicinity because there would be negligible numbers of workers (up to 60 employees) traveling to the proposed project site on a temporary basis. Operation activities would not change with the proposed project. No road closures would be required for the proposed project, and there would not be a permanent substantial increase in the number of people working or residing at or near the proposed project site. **No impact** would occur.

Issue XX.b

The proposed project site is located within a Local Responsibility Area and is not in a State fire hazard severity zone. The proposed project site does not include slopes that surround the Aqueduct which are susceptible to prevailing winds. No structures are proposed as part of the project and construction activities would occur within the waterside of the Aqueduct embankments and within existing access roads and road aprons. Further, the surrounding vegetation and land-use types have a low potential for fires. As a standard DWR safety practice, all vehicles and equipment would have fire prevention equipment on-site, including fire extinguishers and shovels, if a fire were to occur. Therefore, construction of the proposed project is not expected to expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Further, the proposed project would not involve the operation of facilities that would exacerbate fire conditions within the area or require permanent workers or occupants in the proposed project site. As a result, the impact would be **less than significant**.

Issue XX.c

The proposed project includes liner raise construction activities. Operation activities would not change with the proposed project and would continue to be conducted in accordance with existing maintenance and water delivery schedules. The proposed project would not require the installation or maintenance of infrastructure that would exacerbate wildfire risks or that may result in temporary or ongoing impacts to the environment, as discussed in Section 3.2, “Environmental Checklist.” All of the potential direct and indirect impacts of the proposed project were determined to be fully avoided or reduced to less than significant with incorporation of **Mitigation Measures BIO-1 through BIO-14**, **CUL-1 and CUL-2**, and **GEO-1**.

Implementation of **Mitigation Measures BIO-1 through BIO-14** would require qualified biologists to monitor construction activities, conduct targeted surveys, and enforce protective buffers for sensitive species while also incorporating comprehensive worker training, invasive plant species control measures, habitat revegetation, and construction BMPs to minimize impacts on biological resources. Implementing **Mitigation Measures CUL-1 and CUL-2** would ensure would prevent inadvertent damage to potentially significant cultural resources by ensuring that any unanticipated archaeological discoveries and discovered human remains are promptly evaluated and appropriately protected or treated by qualified professionals and Tribes. Implementing **Mitigation Measure GEO-1** would require work to stop near any unanticipated paleontological discovery so that a qualified paleontologist can assess its significance. This allows for appropriate recovery or protection of the resource before construction resumes, avoiding potential damage or loss. As a result, impacts would be **less than significant with mitigation incorporated**.

Issue XX.d

The proposed concrete liner raises would occur on the waterside of the Aqueduct, within a human-made concrete embankment system. The proposed project would not involve the construction of any structures that would be occupied during operation and operation activities would not change with

the proposed project. Therefore, post-fire, the proposed project would not expose people or structures to significant risks. **No impact** would occur.

References

California Department of Forestry and Fire Protection

2024 "Fire Hazard Severity Zones" [Website.] Viewed online at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones. Accessed: Jul. 11, 2024.

3.2.21 Mandatory Findings of Significance

Issues	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
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?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

Issue XXI.a

Construction activities associated with the proposed project would be temporary in nature. Once constructed, the liner raise would maintain functionality in Pools 20 and 21 to enable DWR to avoid future disruptions of water deliveries to the Public Water Agencies, thereby maintaining operational flexibility and improving safety and reliability. The proposed project would not 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; reduce or restrict the range of rare or endangered plants or animals; or eliminate important examples of the major periods of California history or prehistory. As discussed in the analyses provided in this Initial Study, adherence to federal, State, and local regulations, and implementation of **Mitigation Measures BIO-1 through BIO-14, CUL-1 and CUL-2, and GEO-1** would reduce all potentially significant impacts to biological, cultural, and geologic resources as well as to other issue areas analyzed, to **less than significant with mitigation incorporated**.

Implementation of **Mitigation Measures BIO-1 through BIO-14** would require qualified biologists to monitor construction activities, conduct targeted surveys, and enforce protective buffers for sensitive species, while also incorporating comprehensive worker training, invasive plant species control measures, habitat revegetation, and construction BMPs to minimize impacts on biological resources. Implementing **Mitigation Measures CUL-1 and CUL-2** would prevent inadvertent damage to potentially significant cultural resources by ensuring that any unanticipated archaeological discoveries and discovered human remains are promptly evaluated and appropriately protected or treated by qualified professionals and Tribes. Implementing **Mitigation Measure GEO-1** would require work to stop near any unanticipated paleontological discovery so that a qualified paleontologist can assess its significance. This allows for appropriate recovery or protection of the resource before construction resumes, avoiding potential damage or loss

Issue XXI.b

As noted throughout this document, the potential impacts of the proposed project are primarily temporary and short-term construction-related impacts and are site-specific. As noted above, all of the potential direct and indirect impacts of the proposed project were determined to be fully avoided or reduced to less than significant with incorporation of **Mitigation Measures BIO-1 through BIO-14**, **CUL-1 and CUL-2**, and **GEO-1**. As a result, the potential impacts of the proposed project are not considered cumulatively considerable, and impacts would be **less than significant with mitigation incorporated**.

Issue XXI.c

The potential impacts of the proposed project are temporary, short-term, and site-specific. These impacts are all localized to the proposed project site and include limited adverse effects on biological resources, cultural resources, geology and soils, Tribal cultural resources, and wildfire. However, the proposed project would not include any activities or uses that may cause substantial adverse effects

on human beings, either directly or indirectly, or on the physical environment. As discussed above, compliance with applicable local, State, and federal standards, as well as incorporation of project **Mitigation Measures BIO-1 through BIO-14**, **CUL-1 and CUL-2**, and **GEO-1**, would result in **less-than-significant impacts with mitigation incorporated**.

APPENDIX A

Air Quality Modeling Results and Greenhouse Gas Emissions Reduction Plan Consistency Determination Checklist

Greenhouse Gas Emissions Reduction Plan Consistency Determination

For Projects Using Contractors or Other Outside Labor

This form is to be used by DWR Project Managers to document a CEQA project's consistency with the DWR Greenhouse Gas Emissions Reduction Plan (GGERP). This form is to be used only when DWR is the Lead Agency and when contractors or outside labor and equipment are used to implement the project.

Additional Guidance on filling out this form can be found at:
https://cawater.sharepoint.com/teams/prog/icc/SitePages/ClimateActionPlan.aspx

The DWR Greenhouse Gas Emissions Reduction Plan can be accessed at:
https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan/Files/CAP-I-GGERP-Update-2020.pdf

Project Name:	San Luis Canal (CA Aqueduct) Pools 20&21 Liner Raise Project
Environmental Document Type:	Initial Study/Mitigated Negative Declaration
Project Manager's Name:	Bal Sah
Project Manager's E-mail:	Bal.Sah@water.ca.gov
Division:	Division of Engineering
Office, Branch, or Field Division:	Project Management and Coordination

Short Project Description:
The objective of the proposed project is to maintain functionality in Pools 20 and 21 to enable DWR to complete water deliveries to public water agencies. The Aqueduct's concrete liner would be raised on both sides of Pools 20 and 21 over 5 miles with a liner raise up to 1.5 feet, 3.5 miles with a liner raise up to 2.5 feet, and 9.5 miles with a liner raise up to 3 feet. To accommodate the placement of the additional concrete, existing guardrails, road delineators, hand railings and other features would be removed and salvaged for reuse on-site, if possible.

Project Greenhouse Gas (GHG) Emissions Summary:		
Total Construction Emissions	904.3	$mtCO_2e$
Maximum Annual Construction Emissions	904.3	$mtCO_2e$ (For construction lasting 12 months or less the total and maximum annual construction emissions will be the same)

☒ All other emissions from the project not accounted for above will occur as ongoing operational, maintenance, or business activity emissions and therefore have already been accounted for and analyzed in the GGERP.

Extraordinary Construction Project Determination:

Do total project construction emissions exceed 25,000 $mtCO_2e$ for the entire construction phase or exceed 12,500 $mtCO_2e$ in any single year of construction?

☒ No – Additional analysis not required ☐ Yes – Project specific emissions mitigation measures have been included in the environmental analysis document for the project

Project GHG Reduction Plan Checklist:

☑ All Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project. (Project Level GHG Emissions Reduction Measures)

Or

☐ All feasible Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project and Measures not incorporated have been listed and determined not to apply to the proposed project (include as an attachment)

☑ Project does not conflict with any of the Specific Action GHG Emissions Reduction Measures (Specific Action GHG Emissions Reduction Measures)

Would implementation of the project result in additional energy demands on the SWP system of 15 GWh/yr or greater?

☐ Yes ☐ No

If you answered Yes, attach a letter documenting that the project has consulted with the DWR SWP Power and Risk Office regarding the additional power requirements of the project.

Is there substantial evidence that the effects of the proposed project may be cumulatively considerable notwithstanding the proposed project's compliance with the requirements of the DWR GHG Reduction Plan?

☐ Yes ☑ No

If you answered Yes, the project is not eligible for streamlined analysis of GHG emissions using the DWR GHG Emissions Reduction Plan. (See CEQA Guidelines, section 15183.5, subdivision (b)(2).)

Project Manager Signature: Bal Sahi Date: 8/25/2025

After the Project Manager has reviewed and signed above please use DocuSign to forward this form to the DWR Climate Change Program at ceqaclimatechange@water.ca.gov for final approval.

For DWR Climate Change Program Use Only:
Based on the information provided above and information provided in associated environmental documentation completed pursuant to the above referenced project, the DWR Climate Change Program has determined that:

☒ The entire proposed project is consistent with the DWR GGERP and the GHGs emitted by the project are covered by the plan's analysis.

☒ The operational and maintenance phase of the project is consistent with the DWR GGERP and the GHGs emitted by the project are covered by the plan's analysis. Emissions from the construction phase of the project are not covered by the DWR GGERP and will be mitigated as part of the project.

Climate Change Program Approval Signature: Tyler Anthony Date: 8/27/2025

Attachments:

☑ GHG Emissions Inventory ☐ List and Explanation of excluded Project level GHG Emissions Reduction Measures ☐ SWP Power and Risk Office Consultation Letter

Links:
https://cawater.sharepoint.com/teams/prog/icc/SitePages/HomePage.aspx
https://water.ca.gov/Programs/All-Programs/Climate-Change-Program

Pools 20 & 21 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Pools 20 & 21
Construction Start Date	7/28/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	21.2
Location	36.45540167599968, -120.3029946145293
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2525
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Linear	18.0	Mile	700	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.1	14.3	98.8	97.9	0.31	3.53	2.35	5.88	3.25	0.60	3.85	—	33,844	33,844	1.25	0.90	13.2	34,156
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.9	14.9	102	101	0.33	3.64	2.29	5.93	3.36	0.58	3.93	—	35,298	35,298	1.35	0.84	0.32	35,583
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.50	3.76	26.1	25.1	0.08	0.93	0.57	1.50	0.86	0.14	1.00	—	8,669	8,669	0.33	0.21	1.34	8,743
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.82	0.69	4.76	4.58	0.01	0.17	0.10	0.27	0.16	0.03	0.18	—	1,435	1,435	0.05	0.04	0.22	1,447

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	17.1	14.3	98.8	97.9	0.31	3.53	2.35	5.88	3.25	0.60	3.85	—	33,844	33,844	1.25	0.90	13.2	34,156

2028	9.52	7.96	52.0	48.9	0.17	1.85	1.18	3.03	1.71	0.30	2.01	—	18,345	18,345	0.68	0.49	6.29	18,515
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	17.9	14.9	102	101	0.33	3.64	2.29	5.93	3.36	0.58	3.93	—	35,298	35,298	1.35	0.84	0.32	35,583
2028	17.6	14.7	98.0	101	0.33	3.46	2.29	5.75	3.19	0.58	3.76	—	35,197	35,197	1.34	0.84	0.29	35,482
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	4.50	3.76	26.1	25.1	0.08	0.93	0.57	1.50	0.86	0.14	1.00	—	8,669	8,669	0.33	0.21	1.34	8,743
2028	1.90	1.59	9.87	11.2	0.04	0.34	0.31	0.66	0.32	0.08	0.40	—	4,390	4,390	0.16	0.12	0.68	4,429
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.82	0.69	4.76	4.58	0.01	0.17	0.10	0.27	0.16	0.03	0.18	—	1,435	1,435	0.05	0.04	0.22	1,447
2028	0.35	0.29	1.80	2.05	0.01	0.06	0.06	0.12	0.06	0.01	0.07	—	727	727	0.03	0.02	0.11	733

3. Construction Emissions Details

3.1. Mobilization / SWPPP installation (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	0.77	4.32	5.85	0.02	0.16	—	0.16	0.15	—	0.15	—	2,313	2,313	0.09	0.02	—	2,321
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.18	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.1	95.1	< 0.005	< 0.005	—	95.4
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.7	15.7	< 0.005	< 0.005	—	15.8
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.04	0.63	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	116	116	< 0.005	< 0.005	0.37	118
Vendor	0.04	0.02	1.00	0.20	0.01	0.02	0.34	0.35	0.02	0.09	0.11	—	1,160	1,160	0.02	0.17	2.65	1,213
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.39	4.39	< 0.005	< 0.005	0.01	4.47
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	47.7	47.7	< 0.005	0.01	0.05	49.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.73	0.73	< 0.005	< 0.005	< 0.005	0.74
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.89	7.89	< 0.005	< 0.005	0.01	8.24
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Borrow area preparations / fence removal (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	0.95	6.26	9.48	0.03	0.22	—	0.22	0.20	—	0.20	—	2,874	2,874	0.12	0.02	—	2,884
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.26	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	118	118	< 0.005	< 0.005	—	119
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.6	19.6	< 0.005	< 0.005	—	19.6
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.04	0.63	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	116	116	< 0.005	< 0.005	0.37	118
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.39	4.39	< 0.005	< 0.005	0.01	4.47

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.73	0.73	< 0.005	< 0.005	< 0.005	0.74
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Misc. installations (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.46	4.52	32.8	21.0	0.07	1.22	—	1.22	1.12	—	1.12	—	6,027	6,027	0.24	0.05	—	6,048
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.46	4.52	32.8	21.0	0.07	1.22	—	1.22	1.12	—	1.12	—	6,027	6,027	0.24	0.05	—	6,048

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	0.31	2.25	1.44	< 0.005	0.08	—	0.08	0.08	—	0.08	—	413	413	0.02	< 0.005	—	414
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.41	0.26	< 0.005	0.02	—	0.02	0.01	—	0.01	—	68.4	68.4	< 0.005	< 0.005	—	68.6
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.02	0.29	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	57.0	57.0	< 0.005	< 0.005	0.17	57.9
Vendor	0.03	0.02	1.02	0.21	0.01	0.02	0.35	0.37	0.02	0.10	0.12	—	1,189	1,189	0.02	0.18	2.45	1,244
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.6	50.6	< 0.005	< 0.005	< 0.005	51.5
Vendor	0.03	0.02	1.09	0.21	0.01	0.02	0.35	0.37	0.02	0.10	0.12	—	1,189	1,189	0.02	0.18	0.06	1,242
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.59	3.59	< 0.005	< 0.005	< 0.005	3.65
Vendor	< 0.005	< 0.005	0.07	0.01	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	81.4	81.4	< 0.005	0.01	0.07	85.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.01	14.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Closeout (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.87	0.73	3.77	5.26	0.02	0.14	—	0.14	0.13	—	0.13	—	2,221	2,221	0.09	0.02	—	2,229
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	60.9	60.9	< 0.005	< 0.005	—	61.1
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.1	10.1	< 0.005	< 0.005	—	10.1
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.03	0.59	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	114	114	< 0.005	< 0.005	0.33	116
Vendor	0.01	0.01	0.48	0.09	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	565	565	0.01	0.08	1.17	592
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.87	2.87	< 0.005	< 0.005	< 0.005	2.92
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.5	15.5	< 0.005	< 0.005	0.01	16.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.48
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.56	2.56	< 0.005	< 0.005	< 0.005	2.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Earthwork (embankment prep) (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.97	8.28	62.8	48.7	0.14	2.32	—	2.32	2.13	—	2.13	—	12,561	12,561	0.51	0.10	—	12,604
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	9.97	8.28	62.8	48.7	0.14	2.32	—	2.32	2.13	—	2.13	—	12,561	12,561	0.51	0.10	—	12,604
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	2.71	2.25	17.1	13.2	0.04	0.63	—	0.63	0.58	—	0.58	—	3,417	3,417	0.14	0.03	—	3,429
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.50	0.41	3.12	2.42	0.01	0.12	—	0.12	0.11	—	0.11	—	566	566	0.02	< 0.005	—	568
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.23	0.11	1.90	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	349	349	0.01	0.01	1.12	354
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.02	0.01	0.70	0.13	< 0.005	0.01	0.19	0.20	0.01	0.05	0.06	—	659	659	0.01	0.10	1.48	691
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.14	1.54	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	310	310	0.01	0.02	0.03	315
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.75	0.13	< 0.005	0.01	0.19	0.20	0.01	0.05	0.06	—	659	659	0.01	0.10	0.04	690
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.03	0.42	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.3	87.3	< 0.005	< 0.005	0.13	88.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.20	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	179	179	< 0.005	0.03	0.17	188
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.4	14.4	< 0.005	< 0.005	0.02	14.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.7	29.7	< 0.005	< 0.005	0.03	31.1

3.11. Earthwork (embankment prep) (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.92	8.23	61.9	48.6	0.14	2.26	—	2.26	2.08	—	2.08	—	12,566	12,566	0.51	0.10	—	12,609

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	0.24	1.82	1.43	< 0.005	0.07	—	0.07	0.06	—	0.06	—	369	369	0.01	< 0.005	—	370
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.33	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	61.1	61.1	< 0.005	< 0.005	—	61.3
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.13	1.43	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	304	304	0.01	0.02	0.03	309

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.72	0.13	< 0.005	0.01	0.19	0.20	0.01	0.05	0.06	—	642	642	0.01	0.10	0.04	673
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.24	9.24	< 0.005	< 0.005	0.01	9.38
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.8	18.8	< 0.005	< 0.005	0.02	19.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.53	1.53	< 0.005	< 0.005	< 0.005	1.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.12	3.12	< 0.005	< 0.005	< 0.005	3.27

3.13. Drainage work (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.84	2.39	14.3	19.7	0.07	0.50	—	0.50	0.46	—	0.46	—	7,260	7,260	0.29	0.06	—	7,285
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.29	1.77	2.42	0.01	0.06	—	0.06	0.06	—	0.06	—	895	895	0.04	0.01	—	898
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.32	0.44	< 0.005	0.01	—	0.01	0.01	—	0.01	—	148	148	0.01	< 0.005	—	149
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.14	1.54	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	310	310	0.01	0.02	0.03	315
Vendor	0.02	0.01	0.54	0.10	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	580	580	0.01	0.08	0.03	605
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	39.5	39.5	< 0.005	< 0.005	0.06	40.2

Vendor	< 0.005	< 0.005	0.07	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	71.5	71.5	< 0.005	0.01	0.07	74.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.55	6.55	< 0.005	< 0.005	0.01	6.66
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.01	12.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Drainage work (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.80	2.35	13.3	19.6	0.07	0.46	—	0.46	0.42	—	0.42	—	7,264	7,264	0.29	0.06	—	7,289
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.80	2.35	13.3	19.6	0.07	0.46	—	0.46	0.42	—	0.42	—	7,264	7,264	0.29	0.06	—	7,289

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	0.49	2.75	4.06	0.01	0.10	—	0.10	0.09	—	0.09	—	1,507	1,507	0.06	0.01	—	1,512
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.50	0.74	< 0.005	0.02	—	0.02	0.02	—	0.02	—	249	249	0.01	< 0.005	—	250
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.21	0.10	1.77	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	342	342	0.01	0.01	1.00	347
Vendor	0.01	0.01	0.48	0.09	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	565	565	0.01	0.08	1.17	592
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.13	1.43	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	304	304	0.01	0.02	0.03	309
Vendor	0.01	0.01	0.51	0.09	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	565	565	0.01	0.08	0.03	591
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.30	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	65.3	65.3	< 0.005	< 0.005	0.09	66.3
Vendor	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	117	117	< 0.005	0.02	0.10	123
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.8	10.8	< 0.005	< 0.005	0.01	11.0
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.4	19.4	< 0.005	< 0.005	0.02	20.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Concrete liner (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.11	3.45	20.9	26.1	0.10	0.76	—	0.76	0.69	—	0.69	—	10,781	10,781	0.44	0.09	—	10,818
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	4.11	3.45	20.9	26.1	0.10	0.76	—	0.76	0.69	—	0.69	—	10,781	10,781	0.44	0.09	—	10,818
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	1.12	0.94	5.69	7.10	0.03	0.21	—	0.21	0.19	—	0.19	—	2,932	2,932	0.12	0.02	—	2,943
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.20	0.17	1.04	1.30	0.01	0.04	—	0.04	0.03	—	0.03	—	486	486	0.02	< 0.005	—	487
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.46	0.45	0.22	3.80	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	698	698	0.02	0.03	2.23	709
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.03	2.39	0.46	0.02	0.04	0.62	0.67	0.04	0.17	0.21	—	2,218	2,218	0.03	0.34	4.96	2,326
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.41	0.38	0.28	3.08	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	619	619	0.03	0.03	0.06	629
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.03	2.55	0.47	0.02	0.04	0.62	0.67	0.04	0.17	0.21	—	2,218	2,218	0.03	0.35	0.13	2,322
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.11	0.11	0.07	0.85	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	175	175	0.01	0.01	0.26	177
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.68	0.13	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	603	603	0.01	0.09	0.58	632
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.9	28.9	< 0.005	< 0.005	0.04	29.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.12	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	99.9	99.9	< 0.005	0.02	0.10	105

3.19. Concrete liner (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.99	3.35	18.6	25.9	0.10	0.67	—	0.67	0.62	—	0.62	—	10,784	10,784	0.44	0.09	—	10,821
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	0.43	2.37	3.30	0.01	0.09	—	0.09	0.08	—	0.08	—	1,372	1,372	0.06	0.01	—	1,376
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.09	0.08	0.43	0.60	< 0.005	0.02	—	0.02	0.01	—	0.01	—	227	227	0.01	< 0.005	—	228
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.39	0.36	0.25	2.85	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	608	608	0.02	0.03	0.05	617
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.03	2.48	0.47	0.02	0.04	0.62	0.67	0.04	0.17	0.21	—	2,161	2,161	0.03	0.35	0.12	2,265
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.37	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.0	80.0	< 0.005	< 0.005	0.11	81.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.31	0.06	< 0.005	0.01	0.08	0.08	0.01	0.02	0.03	—	275	275	< 0.005	0.04	0.25	288
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.02	13.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	45.5	45.5	< 0.005	0.01	0.04	47.7

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Mobilization / SWPPP installation	Linear, Grubbing & Land Clearing	7/28/2027	8/17/2027	5.00	15.0	—
Borrow area preparations / fence removal	Linear, Grubbing & Land Clearing	7/28/2027	8/17/2027	5.00	15.0	—
Misc. installations	Linear, Grubbing & Land Clearing	3/12/2028	4/15/2028	5.00	25.0	—
Closeout	Linear, Grubbing & Land Clearing	4/15/2028	4/28/2028	5.00	10.0	—
Earthwork (embankment prep)	Linear, Grading & Excavation	8/15/2027	1/15/2028	5.00	110	—
Drainage work	Linear, Drainage, Utilities, & Sub-Grade	10/30/2027	4/15/2028	5.00	120	—
Concrete liner	Linear, Paving	8/15/2027	3/5/2028	5.00	145	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Mobilization / SWPPP installation	Off-Highway Trucks	Diesel	Average	4.00	3.00	400	0.38
Mobilization / SWPPP installation	Forklifts	Diesel	Average	2.00	4.00	100	0.20

Borrow area preparations / fence removal	Excavators	Diesel	Average	2.00	6.00	82.0	0.38
Borrow area preparations / fence removal	Off-Highway Trucks	Diesel	Average	4.00	3.00	400	0.38
Borrow area preparations / fence removal	Forklifts	Diesel	Average	2.00	4.00	100	0.20
Borrow area preparations / fence removal	Skid Steer Loaders	Diesel	Average	1.00	4.00	74.0	0.37
Misc. installations	Off-Highway Trucks	Diesel	Average	4.00	3.00	400	0.38
Misc. installations	Forklifts	Diesel	Average	1.00	4.00	100	0.20
Misc. installations	Dumpers/Tenders	Diesel	Average	3.00	8.00	325	0.38
Misc. installations	Generator Sets	Diesel	Average	1.00	6.00	12.0	0.74
Closeout	Off-Highway Trucks	Diesel	Average	4.00	3.00	400	0.38
Closeout	Forklifts	Diesel	Average	1.00	4.00	100	0.20
Earthwork (embankment prep)	Excavators	Diesel	Average	4.00	6.00	82.0	0.38
Earthwork (embankment prep)	Off-Highway Trucks	Diesel	Average	8.00	3.00	400	0.38
Earthwork (embankment prep)	Skid Steer Loaders	Diesel	Average	4.00	4.00	74.0	0.37
Earthwork (embankment prep)	Dumpers/Tenders	Diesel	Average	4.00	8.00	400	0.38
Earthwork (embankment prep)	Rollers	Diesel	Average	4.00	6.00	75.0	0.38
Drainage work	Off-Highway Trucks	Diesel	Average	12.0	3.00	400	0.38
Drainage work	Forklifts	Diesel	Average	3.00	4.00	100	0.20
Drainage work	Skid Steer Loaders	Diesel	Average	3.00	4.00	74.0	0.37
Drainage work	Excavators	Diesel	Average	1.00	6.00	82.0	0.38
Concrete liner	Off-Highway Trucks	Diesel	Average	8.00	4.00	400	0.38

Concrete liner	Forklifts	Diesel	Average	4.00	4.00	100	0.20
Concrete liner	Other Material Handling Equipment	Diesel	Average	4.00	8.00	300	0.40
Concrete liner	Generator Sets	Diesel	Average	4.00	6.00	12.0	0.74

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization / SWPPP installation	—	—	—	—
Mobilization / SWPPP installation	Worker	20.0	7.70	LDA,LDT1,LDT2
Mobilization / SWPPP installation	Vendor	4.00	100	HHDT,MHDT
Mobilization / SWPPP installation	Hauling	0.00	20.0	HHDT
Mobilization / SWPPP installation	Onsite truck	—	—	HHDT
Borrow area preparations / fence removal	—	—	—	—
Borrow area preparations / fence removal	Worker	20.0	7.70	LDA,LDT1,LDT2
Borrow area preparations / fence removal	Vendor	0.00	4.00	HHDT,MHDT
Borrow area preparations / fence removal	Hauling	0.00	20.0	HHDT
Borrow area preparations / fence removal	Onsite truck	—	—	HHDT
Concrete liner	—	—	—	—
Concrete liner	Worker	120	7.70	LDA,LDT1,LDT2
Concrete liner	Vendor	0.00	4.00	HHDT,MHDT
Concrete liner	Hauling	16.0	42.0	HHDT
Concrete liner	Onsite truck	—	—	HHDT
Earthwork (embankment prep)	—	—	—	—

Earthwork (embankment prep)	Worker	60.0	7.70	LDA,LDT1,LDT2
Earthwork (embankment prep)	Vendor	0.00	4.00	HHDT,MHDT
Earthwork (embankment prep)	Hauling	4.00	50.0	HHDT
Earthwork (embankment prep)	Onsite truck	—	—	HHDT
Misc. installations	—	—	—	—
Misc. installations	Worker	10.0	7.70	LDA,LDT1,LDT2
Misc. installations	Vendor	6.00	70.0	HHDT,MHDT
Misc. installations	Hauling	0.00	20.0	HHDT
Misc. installations	Onsite truck	—	—	HHDT
Closeout	—	—	—	—
Closeout	Worker	20.0	7.70	LDA,LDT1,LDT2
Closeout	Vendor	2.00	100	HHDT,MHDT
Closeout	Hauling	0.00	20.0	HHDT
Closeout	Onsite truck	—	—	HHDT
Drainage work	—	—	—	—
Drainage work	Worker	60.0	7.70	LDA,LDT1,LDT2
Drainage work	Vendor	2.00	100	HHDT,MHDT
Drainage work	Hauling	0.00	20.0	HHDT
Drainage work	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Mobilization / SWPPP installation	0.00	0.00	0.00	0.00	—
Borrow area preparations / fence removal	0.00	0.00	0.00	0.00	—
Misc. installations	0.00	0.00	0.00	0.00	—
Closeout	0.00	0.00	0.00	0.00	—
Earthwork (embankment prep)	32,000	0.00	0.00	0.00	—
Drainage work	0.00	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Linear	0.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O

2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	31.0	annual days of extreme heat
Extreme Precipitation	0.55	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth

Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A

Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	71.8
AQ-PM	50.3
AQ-DPM	10.2
Drinking Water	78.4
Lead Risk Housing	69.9
Pesticides	89.6
Toxic Releases	28.0
Traffic	0.70
Effect Indicators	—
CleanUp Sites	53.4

Groundwater	84.7
Haz Waste Facilities/Generators	69.4
Impaired Water Bodies	43.8
Solid Waste	35.7
Sensitive Population	—
Asthma	49.6
Cardio-vascular	71.8
Low Birth Weights	46.3
Socioeconomic Factor Indicators	—
Education	99.3
Housing	32.3
Linguistic	98.7
Poverty	95.1
Unemployment	85.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	2.96419864
Employed	8.417810856
Median HI	6.749647119
Education	—
Bachelor's or higher	3.836776594
High school enrollment	20.46708585
Preschool enrollment	19.49185166
Transportation	—
Auto Access	18.65776979

Active commuting	26.34415501
Social	—
2-parent households	19.87681252
Voting	7.083279867
Neighborhood	—
Alcohol availability	64.18580778
Park access	22.57153856
Retail density	2.104452714
Supermarket access	46.72141666
Tree canopy	1.129218529
Housing	—
Homeownership	31.64378288
Housing habitability	38.73989478
Low-inc homeowner severe housing cost burden	16.33517259
Low-inc renter severe housing cost burden	80.44398819
Uncrowded housing	22.82817914
Health Outcomes	—
Insured adults	7.789041447
Arthritis	0.0
Asthma ER Admissions	46.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	34.6
Cognitively Disabled	80.8

Physically Disabled	63.7
Heart Attack ER Admissions	11.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	62.8
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	12.9
Elderly	75.4
English Speaking	3.3
Foreign-born	84.5
Outdoor Workers	0.3
Climate Change Adaptive Capacity	—
Impervious Surface Cover	88.0
Traffic Density	1.7
Traffic Access	0.0
Other Indices	—
Hardship	95.5
Other Decision Support	—
2016 Voting	32.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	83.0
Healthy Places Index Score for Project Location (b)	3.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Project specific information for schedule duration and days per phase of construction.
Construction: Off-Road Equipment	Project specific equipment lists and HP from project applicant.
Construction: Dust From Material Movement	Project specific import quantities provided by project applicant.
Construction: Trips and VMT	Trips per phase were provided by the project applicant.
Construction: Paving	No paving done.

APPENDIX B

Biological Resources Technical Report

SAN LUIS CANAL (CALIFORNIA AQUEDUCT POOL 20 AND POOL 21) LINER RAISE PROJECT

Biological Resources Technical Report

Prepared for
California Department of Water Resources
Division of Engineering

October 2025

SAN LUIS CANAL (CALIFORNIA AQUEDUCT POOL 20 AND POOL 21) LINER RAISE PROJECT

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October 2025

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San Luis Canal (California Aqueduct Pool 20 and Pool 21) Liner Raise Project Biological Resources Technical Report

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Acronyms and Abbreviations

Acronym	Definition
BRTR	Biological Resources Technical Report
CASP	California Aqueduct Subsidence Program
Cal-IPC	California Invasive Plant Council
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CVP	Central Valley Project
CWHR	California Wildlife Habitat Relationships
DOE	Division of Engineering
DWR	California Department of Water Resources
ESA	Environmental Science Associates
FESA	Federal Endangered Species Act
GPS	Global Positioning System
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
MP	Milepost
MOU	Memorandum of Understanding
NRCS	Natural Resources Conservation Service
SLC	San Luis Canal
SR	State Route
SWP	State Water Project
USACE	U.S. Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WSDB	Westside Detention Basin
WSE	Water Surface Elevation
WEAP	Worker Environmental Awareness Program

1. Background

The California Department of Water Resources (DWR) South Central Region Office (SCRO) prepared this Biological Resources Technical Report (BRTR) to assess biological resources for the San Luis Field Division (SLFD) California Aqueduct Subsidence Program (CASP) Pool 20 and Pool 21 Liner Raise Project (Project).

CASP has been established to formulate, analyze, evaluate, recommend, and implement actions to address the consequences of subsidence of the California Aqueduct (Aqueduct) in the San Joaquin Valley on the operation and performance of the State Water Project (SWP).

Interim actions or projects have been identified in the SLFD to restore functionality and capacity in critical areas to enable DWR to complete water deliveries, thereby increasing operational flexibility and improving safety and reliability. Pools 20 and 21 of the Aqueduct, otherwise known as the San Luis Canal (SLC), were identified as critical.

Subsidence in the SLFD has reduced the lined freeboard, which limits the current operating water surface elevation (WSE) and capacity of the SLC. To maintain capacity as subsidence continues, additional lined freeboard will need to be provided. Freeboard refers to the vertical distance between the design water surface and the top of the concrete canal lining. The amount of freeboard required to fully restore the design capacity will require additional embankment and subsequent liner raise. As an interim solution, select areas of liner in Pools 20 and 21 will be raised to increase the lined freeboard and capacity of the SLC. Approximately 5 miles would have a liner raise up to approximately 1.5 feet, approximately 3.5 miles would have a liner raise up to 2.5 feet, and approximately 9.5 miles would have a liner raise up to 3 feet.

2. Environmental Setting

2.1 Project Site

Pools 20 and 21 span from Mile Post (MP) 155.68 to 172.40 of the SLC (**Figure 1**), with the exception of MP 127.6 borrow site in Pool 17 (**Figure 2**). The centroid of the stretch can be found 15 miles west of the incorporated city of Stratford. The pools span into two counties: Fresno and Kings. Public Land Survey System is Section 18 of Township 21 South, Range 18 East on the Mount Diablo Principal Meridian, La Cima Quad California United States Geologic Survey (USGS) 7.5-minute quadrangle. Liner raises within the Pools are proposed at the following locations (**Table 1**, **Figure 3**, and **Figure 4**).

TABLE 1
LINER RAISE LOCATIONS

	Left Embankment		Right Embankment		
Pool	**Upstream MP**	**Downstream MP**	**Upstream MP**	**Downstream MP**	**Liner Miles**
20	160.2	160.4	158.7	164.7	6.2
	160.8	164.7	–	–	3.9
21	164.7	168.3	164.7	165.8	4.7
	–	–	166.7	168.4	1.7
	169.3	170.3	169.5	170.2	1.7
Total					***18.2***

Construction will require the use of staging areas and borrow sites for earthen materials. The following locations have been identified for potential use (**Table 2**).

TABLE 2
STAGING AND BOROW AREA LOCATIONS

Pool	Milepost	Feature
17	127.6 Right	Borrow
20	160.5 Left	Staging
	162.0 Left	Staging
	164.3 Left	Staging
21	164.9 Left	Staging
	165.1 Right	Staging
	166.3 Right	Staging
	167.8 Left	Staging
	168.7 Right	Staging
	170.4 Right	Staging

For the purposes of this report, the Project site encompasses the entire Project footprint, including the liner raise areas for Pools 20 and 21 and associated areas that could be affected by the liner raises, the staging and access areas and the borrow areas (**Figure 2** through **Figure 4**).

2.2 Physical Conditions

The Project would be located in the western San Joaquin Valley. The average temperature ranges from a high of 77.8°F to a low of 49.5°F. The average annual precipitation is 7.21 inches (National Oceanic and Atmospheric Administration 2024).

The SLC sits on land alternating between three landforms: eroded structural hills, floodplain, and alluvial fan, (Natural Resources Conservation Service 2017). Land

in the upper watershed is mainly used for livestock grazing. Land use on the alluvial fan and floodplain is dominated by irrigated agriculture.

Surface water is known to interact with the section of the SLC during years of elevated precipitation. The Arroyo Pasajero Stream Group watershed is located west of the liner raises, near Pools 20 and 21. It originates on the eastern side of the California Coast Range (**Figure 5**). This watershed's elevations range from 325 feet near the SLC to over 5,000 feet to the Diablo Range. The Diablo Range consists mainly of Cretaceous marine rocks such as mudstone, sandstone, and shale (United States Geological Survey 1979). These rock types are known to contain chrysotile asbestos and enter the waterway when erosion occurs. The Arroyo Pasajero and the Westside Detention Basin (WSDB), which acts as a settling basin, is known to contain the chrysotile asbestos. The Arroyo Pasajero Stream Group watershed consists of four ephemeral creeks that are tributaries to Arroyo Pasajero: Zapato Chino, Los Gatos, Warthan, and Jacalitos. These creeks drain a portion of the Coast Range and generally flow easterly into the western San Joaquin Valley. The large drainage channels can carry significant floodwater and sediment volumes to the Arroyo Pasajero and WSDB. The WSDB is over 3,500 acres and is where the Arroyo Pasajero channel ends. Features such as a dike, gabion weirs, drain inlets, and a rubber dam were built into the WSDB and SLC to control flows, manage sediment, and protect the SLC and adjacent properties.

Additional natural features along the SLC include the Kettleman Hills that border the west of the SLC. This small range is part of the Coast Range and rises to an elevation of 1,200 feet. The range offers unique geological formations and is composed of marine sedimentary rock and is a source for oil drilling (United States Geological Survey 1977).

2.3 Land Use

The existing land uses are the operations and maintenance of the SLC, open spaces, and agriculture. The agricultural land use and open spaces extend from the SLC into the surrounding landscapes. Adjacent agricultural land uses are those identified in digitized and verified 2022 crop type data (Section 5.1.3). The agricultural land uses (e.g., crop types) may vary year-to-year due to normal crop rotations or due to changes in market conditions.

3. Methods

The information provided in this report was obtained from a desktop-level review of biological resources and biological field surveys. Sensitive biological resources including special-status plant and animal species, sensitive natural communities, and aquatic resources that may occur within the Project site were determined, in part, by reviewing natural resource agency databases, relevant literature, and other sources including historic survey data. DWR biologists have conducted countless surveys over the last several decades that contribute to the body of knowledge regarding the protection and distribution of species and habitat presence. A review of this information allowed for

initial determinations of sensitive resource distributions and the probability of their occurrence within the Project site.

3.1 Definitions

3.1.1 Special-Status Species

Special-status species are defined as those plants and wildlife that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or local agencies as being under threat from development pressures as well as natural causes. Many of these species receive specific protection that is defined and regulated by the federal Endangered Species Act (FESA) or California Endangered Species Act (CESA). Other species have been designated as special status on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and/or special districts to meet local conservation objectives.

Special-status animal species include species that are: (1) listed as threatened or endangered under the CESA or FESA; (2) proposed for federal listing as threatened or endangered; (3) state or federal candidate species; and (4) identified by the California Department of Fish and Wildlife (CDFW) as species of special concern (SSC) or fully protected (FP) species.

Special-status plant species include plants that are: (1) listed as threatened or endangered under the CESA or the FESA; (2) proposed for federal listing as threatened or endangered; (3) state or federal candidate species; (4) designated as rare by the CDFW; and (5) California Rare Plant Rank (CRPR) 1A, 1B, 2A 2B, 3, or 4 species.

- California Rare Plant Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
- California Rare Plant Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
- California Rare Plant Rank 2A: Plants presumed extirpated in California but common elsewhere
- California Rare Plant Rank 2B: Plants rare, threatened, or endangered in California but common elsewhere
- California Rare Plant Rank 3: Plants about which more information is needed, a review list
- California Rare Plant Rank 4: Plants of limited distribution, a watch list
  - California Rare Plant Rank Extensions:

    .1 – Seriously threatened in California (greater than 80 percent of occurrences are threatened and/or have a high degree and immediacy of threat).

.2 – Moderately threatened in California (20 to 80 percent of occurrences are threatened and/or have a moderate degree and immediacy of threat).

"Sensitive" natural communities and habitats are defined by CDFW as those natural communities that have a reduced range and/or are imperiled because of various forms of development and other anthropogenic stressors, including residential and commercial expansion, various forms of agriculture, energy production, mining, etc.

3.1.2 Potential to Occur

The potential for special-status species to occur was assigned to one of four categories, as described below. Special-status species with a potential to occur are evaluated in Section 3.3 of this report:

- **High:** The species has been recently (since 2015) documented in the vicinity of the Project site, and suitable habitat for the species is present.
- **Moderate:** The Project site is located within the current range of the species, or there are nearby documented occurrences and suitable habitat for the species is present.
- **Low:** The Project site is located within the current range of the species, and low-quality habitat is present.
- **None:** The Project site is located outside of the species current range or suitable habitat to support the species is not present.

3.2 Literature and Database Review

The following information sources were reviewed to identify special-status species and their habitats, sensitive natural communities, aquatic resources, and wildlife movement corridors that may occur within the Project site:

- CDFW California Natural Diversity Database (CNDDB, [2024]), which provides an inventory of the status and locations of rare plants and animals in California. A 3-mile search radius was conducted for each site (**Figure 6**).
- California Native Plant Society (CNPS) provides an inventory and ranking of Rare, Threatened, or Endangered vascular plant species of California (CNPS, [2024]). The list serves as the candidate list for listing as threatened and endangered by CDFW. A nine-quadrangle search was conducted for each site (Appendix B).
- United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Online System (USFWS, [2024]), which identifies USFWS-managed resources and suggested conservation measures for a defined project; indicates if any listed species, critical habitat, migratory birds, or other protected natural resources may be impacted by the projects; and initiates the regulatory review (Appendix B).

- Environmental Services Association (ESA) *San Luis Canal Embankment and Liner Raise Project Draft Aquatic Resources Delineation Report* (ESA, [2022]) (Appendix C).
- CDFW VegCamp mapping data (VegCamp,[2018]), provides Biogeographic Information and Observation System (BIOS). The mapping layer "Vegetation – Great Valley Ecoregion" [ds2632] was used as a baseline.
- USFWS National Wetlands Inventory online mapping data (USFWS, 2024) for identification of wetland habitat available for special-tatus species.
- DWR land use mapping data. The review was done by using the verified 2022 DWR Land Use dataset and selecting all fields adjacent to Pools 20 and 21.
- DWR environmental data. DWR has collected environmental data in conjunction with ongoing maintenance projects. Environmental data recorded in the vicinity of the Project site since 2015 is included and analyzed in this technical report. This includes environmental survey data collected as part of ongoing maintenance projects. A summary of the surveys conducted is provided in **Table 3**.

TABLE 3
SURVEYS CONDUCTED WITHIN POOLS 20 AND 21 AND MP 127.6 FROM 2015 TO 2024 BY DWR

Project/Activity	Year(s)	Survey Type
Erosion Repair and Aqueduct Maintenance	2015–2024	Biological Resources Assessment
Access Road Maintenance, Mowing and Grading	2015–2024	Biological Resources Assessment
Westside Detention Basin Maintenance	2015–2024	Protocol Level Swainson's Hawk
Westside Detention Basin Maintenance	2015–2024	Protocol Level Blunt-nosed Leopard Lizard
Rubber Dam Geotech	2015	Preconstruction Survey
Rubber Dam Repair	2017	Preconstruction Survey
Irrigation Crossing Pipe Inspections and Repair Project	2019	Reconnaissance Den and Burrow Survey
Irrigation Crossing Pipe Inspections and Repair Project	2019	Preconstruction Survey and Monitoring
California Aqueduct Subsidence Program	2020	Vegetation Mapping
California Aqueduct Subsidence Program	2020	Land Use Ground-truthing Surveys
California Aqueduct Subsidence Program	2020	Reconnaissance Den and Burrow Survey
CASP Geotechnical Explorations	2021	Preconstruction Surveys and Monitoring
California Aqueduct Subsidence Program	2023–2024	Survey Known Sensitive Resources
California Aqueduct Subsidence Program	2024	Western Spadefoot Habitat Assessment

This table does not include discrete maintenance projects in which special-status species observations may have been made but were not detected during a focused survey. However, any species observations collected during these other types of projects not shown in this table have been included in this report.

3.3 Special-Status Species Preliminary Analysis

3.3.1 Special-Status Animal Species

Special-status animal species as reported in USFWS's iPaC and CDFW's CNDDB within a 3-mile radius (Figure 6) of the Project site were analyzed to determine potential to occur based on desktop review and general knowledge of the Project site. **Table 4** includes listing statuses, brief descriptions of habitat requirements, and a determination of the potential for species to occur within the Project site.

TABLE 4
REVIEW OF REGIONALLY OCCURRING SPECIAL-STATUS ANIMAL SPECIES

Common Name *Scientific Name*	Listing Status	Habitat Requirements	Potential for Occurrence
AMPHIBIANS			
Spadefoot Toads (Scaphiopodidae)			
Western spadefoot *Spea hammondii*	FPT, CDFW SSC	Mixed woodland, grasslands, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Prefers washes and other sandy areas with patches of brush and rocks. Rain pools or shallow temporary pools, which do not contain bullfrogs, fish, or crayfish are necessary for breeding. Perennial plants necessary for its major food source.	High. Marginal habitat is present at the Project site.
REPTILES			
Leopard Lizards (Crotaphytidae)			
Blunt-nosed leopard lizard *Gambelia sila*	FE, SE, CDFW FP	Inhabits semiarid grasslands, alkali flats, and washes. Prefers flat areas with open space for running, avoiding densely vegetated areas. Uses mammal dens and burrows for cover and shelter. Will use large shrubs with dense canopy cover for refuge and thermoregulation.	None. Habitat is not present.
Egg-Laying Snakes (Colubridae)			
San Joaquin coachwhip *Masticophis flagellum ruddocki*	CDFW SSC	Inhabits open, dry, treeless areas with little or no cover, including valley grassland and saltbush scrub. Takes refuge in rodent burrows, under shaded vegetation, and under surface objects.	High. Marginal habitat is present at the Project site.
Freshwater Turtles (Emydidae)			
Western pond turtle *Actinemys marmorata*	FPT, CDFW SSC	Permanent and intermittent waterways. Terrestrial habitat is also important for basking and egg laying.	None. Habitat is not present. Waterways are lined and food sources absent.
BIRDS			
Hawks, Kites, Harriers, & Eagles (Accipitridae)			
Swainson's hawk *Buteo swainsoni*	ST	Found in Great Basin grassland, riparian forest, riparian woodland, valley and foothill grassland. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	High. Nesting habitat is present within 0.25 miles of the Project site.

Common Name *Scientific Name*	Listing Status	Habitat Requirements	Potential for Occurrence
Falcons (Falconidae)			
Merlin *Falco columbarius*	CDFW WL	Occupies seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms, and ranches. Clumps of trees or windbreaks are required for roosting in open country.	High. Suitable habitat occurs within 0.25 miles of the Project site.
True Owls (Strigidae)			
Burrowing owl *Athene cunicularia*	SC, USFWS BCC	Inhabits open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Usually nests in old burrows of ground squirrels, or other small mammals.	High. Habitat is present at the Project site; direct observations have not been recorded since 2022.
Shrikes (Laniidae)			
Loggerhead shrike *Lanius ludovicianus*	CDFW SSC	Found in broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	High. Documented to use marginal and low-quality habitats within the Project site.
Blackbirds (Icteridae)			
Tricolored blackbird *Agelaius tricolor*	ST, USFWS BCC	Known to occur in freshwater marshes, swamps, and wetlands. Highly colonial species, most numerous in Central Valley and vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Low (Nesting), Moderate (Foraging). Habitat is present and nesting has been observed adjacent to the Project site.
MAMMALS			
Squirrels & relatives (Sciuridae)			
Nelson's (=San Joaquin) antelope squirrel *Ammospermophilus nelsoni*	ST	Occurs in the western San Joaquin Valley from 60 to 360 meters elevation on dry, sparsely vegetated, loam soils. Selects areas with slopes from 0 to 20 degrees and uses widely scattered shrubs and annual forbs and grasses.	None. Habitat is not present and any records of the species predate the construction of the SLC and agricultural development of the area.
Kangaroo rats, Pocket mice, & Kangaroo mice (Heteromyidae)			
Giant kangaroo rat *Dipodomys ingens*	FE, SE	Inhabits fine sandy loam soils supporting sparse annual grass/forb vegetation and marginally found in low-density alkali desert scrub.	None. Habitat is not present.
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	FE, SE	Inhabits arid, alkaline, annual grassland and shrubland associations between 60 and 90 meters above sea level. Also found in sparse cover of plants and alkaline soils with a high clay content and seasonal flooding.	None. Habitat is not present and any records of the species predate the construction of the SLC and agricultural development of the area.
Mice, Rats, & Voles (Muridae)			
Tulare grasshopper mouse *Onychomys torridus tularensis*	CDFW SSC	Found primarily on sandy or gravelly soils in open and semi-open habitats. Found in the southern San Joaquin Valley, Carrizo Plain, Cuyama Valley, and nearby foothills of the Sierra Nevada and Tehachapi Mountains.	None. Habitat is not present and any records of the species predate the construction of the SLC and agricultural development of the area.

Common Name *Scientific Name*	Listing Status	Habitat Requirements	Potential for Occurrence
Foxes, Wolves, Coyotes (Canidae)			
San Joaquin kit fox *Vulpes macrotis mutica*	FE, ST	Inhabits arid regions in annual grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub. Dens are excavated in open, level areas with loose-textured, sandy and loamy soils.	Low. Marginal foraging habitat is present, breeding habitat is not present.
Weasels & relatives (Mustelidae)			
American badger *Taxidea taxus*	CDFW SSC	Found in a variety of habitats, including alkali marsh, desert wash, Great Basin scrub, marsh and swamp, meadow and seep, Mojavean desert scrub, riparian scrub, riparian woodland, valley and foothill grassland. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground to dig burrows. Preys on burrowing rodents.	High. Marginal habitat is present. Species has been observed using the right-of-way for foraging.
INSECTS			
Bumble Bees (Bombus)			
Crotch's bumble bee *Bombus crotchii*	SC	Occurs primarily in California. Prefers grassland and scrub area within drier climates. They overwinter in leaf litter and soft soil.	Low. Marginal habitat is present.
Brush-Footed Butterflies (Nymphalidae)			
Monarch butterfly *Danaus plexippus*	FC	Live mainly in prairies, meadows, and grasslands. Their life cycle depends on the host plant, milkweed.	Low. Although grassland is present it is surrounded by agriculture and conventional farming practices.

NOTES: CDFW FP= California Fully Protected; CDFW SSC = California Species of Special Concern; USFWS BCC = Birds of Conservation Concern; FC = Federal Candidate for Listing; FE = Federally Endangered; FPT = Federally Proposed Threatened; FT = Federally Threatened; SE = Federally Endangered; ST = State Threatened; SC = State Candidate for Listing.

Seven special-status wildlife species were determined to have a moderate to high potential to occur within the Project site due to the presence of suitable habitat based on the preliminary analysis: Tricolored blackbird (*Agelaius tricolor*), burrowing owl (*Athene cunicularia*; BUOW), Swainson's hawk (*Buteo swainsoni*), merlin (*Falco columbarius*), loggerhead shrike (*Lanius ludovicianus*), western spadefoot (*Spea hammondii*; WSTO), and American badger (*Taxidea taxus*).

All other special-status animal species listed in Table 4 were determined to have low or no potential to occur on the Project site due to lack of suitable habitat or other considerations and are not discussed further.

Nine additional species were identified by the iPaC and were not included in the Table 4. The species were considered but the Project site is absent of critical features for the species such as cliff side for nesting, heavily vegetated waterways, or vernal pools for breeding. These species were determined to have no potential to occur within the Project site and were not analyzed further.

3.3.2 Special-Status Plant Species

Special-status plant species as reported in USFWS's iPaC, CDFW's CNDDB, and CNPS were analyzed in **Table 5**, which includes listing statuses, brief descriptions of habitat requirements, and a determination of the potential for species to occur within the Project site.

TABLE 5
REVIEW OF REGIONALLY OCCURRING SPECIAL-STATUS PLANT SPECIES

Common Name Scientific Name	Listing Status (Fed/State/ CRPR)	Flowering Period	Habitat Requirements	Potential for Occurrence
Asteraceae (Sunflower Family)				
alkali-sink goldfields *Lasthenia chrysantha*	CRPR: 1B.1	Feb.–Apr.	Vernal pools. Elevation range extends from 0 to 200 meters amsl.	None. Habitat is not present in the right-of-way. The nearest observation occurred in 2004 more than 13 miles north of the Project.
San Joaquin woollythreads *Monolopia congdonii*	Federal: FE CRPR: 1B.2	Feb.–May	Chenopod scrub and valley and foothill grassland (sandy). Elevation range extends from 60 to 800 meters amsl.	Low. Suitable habitat is present in the right-of-way, however, the species has not been observed within 3 miles of the Project since the 1940s. A revisit in 1988 by CDFW did not observe the species and noted no native habitat remained at the site.
Brassicaceae (Cabbage Family)				
California jewelflower *Caulanthus californicus*	Federal: FE State: SE CRPR: 1B.1	Feb.–May	Alkali desert scrub, pinyon and juniper woodland, and valley and foothill grassland. Elevation range extends from 61 to 1,000 meters amsl.	Low. Marginal habitat is present in the right-of-way, but the degree of past and ongoing disturbance reduces the likelihood for this species to occur. The nearest observation occurred in 1935 more than 7 miles west of the Project.
Lemmon's jewelflower *Caulanthus lemmonii*	CRPR: 1B.2	Feb.–May	Pinyon and juniper woodland, Valley and foothill grassland. Elevation range extends from 80 to 1,580 meters amsl.	Low. Marginal habitat is present in the right-of-way, but the degree of past and ongoing disturbance reduces the likelihood for this species to occur. The nearest observation occurred in 2005 more than 11 miles west of the Project.
Chenopodiaceae (Goosefoot Family)				
crownscale *Atriplex coronata* var. *coronata*	CRPR: 4.2	Mar.–Oct.	Chenopod scrub, valley and foothill grassland, and vernal pools. Elevation range extends from 1 to 590 meters amsl.	Low. Marginal habitat is present in the right-of-way, but the degree of past and ongoing disturbance reduces the likelihood for this species to occur. The nearest observation occurred in 2017 more than 5 miles west of the Project.
brittlescale *Atriplex depressa*	CRPR: 1B.2	Apr.–Oct.	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools. Elevation range extends from 1 to 320 meters amsl.	Low. Marginal habitat is present within the right-of-way; however, the only nearby occurrence was last confirmed in the adjacent "Guijarral Hills" quad in 2019.

Common Name Scientific Name	Listing Status (Fed/State/ CRPR)	Flowering Period	Habitat Requirements	Potential for Occurrence
Lamiaceae (Mint Family)				
San Joaquin bluecurls *Trichostema ovatum*	CRPR: 4.2	Jul.–Oct.	Chenopod scrub, Valley and foothill grassland. Elevation range extends from 65 to 320 meters amsl.	Moderate. Marginal habitat is present in the right-of-way, but the degree of past and ongoing disturbance reduces the likelihood for this species to occur. The nearest observation occurred in 2021 more than 2 miles northeast of the Project.
Malvaceae (Mallow Family)				
Kern mallow *Eremalche parryi* ssp. *kernensis*	Federal: E State: None CRPR: 1B.2	Mar.–May	Alkali desert scrub, pinyon and juniper woodland, and valley and foothill grassland.	Low. Marginal habitat is present within the right-of-way; however, the only nearby occurrence was last confirmed in the 'La Cima' quad in 2019.
Polemoniaceae (Phlox Family)				
Hoover's eriastrum *Eriastrum hooveri*	Federal: D State: None CRPR: 4.2	Mar.–Jul	Alkali desert scrub, pinyon and juniper woodland, and valley and foothill grassland.	Low. Marginal habitat is present in the right-of-way, but the degree of past and ongoing disturbance reduces the likelihood for this species to occur. The nearest observation occurred in 2024 more than 4 miles west of the Project.
Polygonaceae (Buckwheat Family)				
cottony buckwheat *Eriogonum gossypinum*	CRPR: 4.2	Mar.–Sep.	Chenopod scrub and valley and foothill grassland. Elevation range extends from 100 to 550 meters amsl.	Low. Marginal habitat is present in the right-of-way; however, occurrences of the species are primarily in the coast range. The nearest observation occurred in 2003 more than 7 miles west of the Project.

NOTES: FE = Federally Endangered

CRPR = California Rare Plant Ranking
- 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere
- 2B = Plants Rare, Threatened, or Endangered in California and Elsewhere but Are More Common Elsewhere
- 4B = Watch List: Plants of Limited Distribution
  - 0.1 = Seriously Threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
  - 0.2 = Moderately Threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
  - 0.3 = Not Very Threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Three species have been recorded in the CNDDB or CNPS within 3 miles of the Project site: Kern mallow (*Eremalche parryi* ssp. *kernensis*), San Joaquin woollythreads (*Monolopia congdonii*), and San Joaquin bluecurls (*Trichostema ovatum*).

All special-status plant species listed below were determined to have low or no potential to occur on the Project site due to lack of suitable habitat or other considerations and are not discussed further.

3.3.3 Habitat Connectivity

Wildlife corridors, or habitat corridors, are natural or semi-natural lands (e.g., rural, agricultural, ruderal, barren) that connect populations of wildlife across the landscape. While these resources may be utilized strictly for travel purposes, for example, a dry

culvert under a roadway or bridge, they can contain natural vegetation and habitats that support foraging, roosting, and breeding activities as well.

Wildlife movement corridors are critical for the long-term health of ecological systems for several reasons. Corridors provide connections that provide wildlife with access to water, food, and cover sources, spatially linking these three resources with wildlife in different areas. In addition, wildlife movement between habitat areas provides for genetic exchange between populations of wildlife in otherwise separated natural areas, thereby improving genetic variability within species which also enhances a species' ability to respond to changing environmental conditions. This is especially critical for small populations subject to loss of variability from genetic drift and effects of inbreeding.

Habitat connectivity in relation to the SLC can be considered in three main aspects—north to south along the SLC, east to west across the SLC, and the open water environment within the SLC.

- **North to South.** The SLC runs generally north to south along California's Central Valley and can be considered a link between habitats dispersed throughout the Central Valley. The north to south connection along both sides of the SLC is open could provide temporary habitat for traveling wildlife.
- **East to West.** The habitat connectivity from east to west is less open due to the aquatic nature of the SLC. Periodic bridges, overchutes, and utility crossings over the canal provide terrestrial passage from one side to the other. Structures and crossings may also be used for bird or bat nesting and roosting.
- **Open Water.** Waterfowl and coastal bird species often use the SLC as a resting area during the spring and fall migratory periods. Bats and birds forage for insects over the open water.

3.4 Field Surveys

General evaluations or biological resource surveys were conducted within the vicinity of Pools 20 and 21, and borrow site in Pool 17, including within the SLC, DWR rights-of-way, and adjacent lands. Field surveys were conducted for vegetation, general habitat assessments, land use, and aquatic and biological resources (Table 4). Biological resources surveyed consisted of focused and general evaluations for known and potential special-status species presence, including, blunt-nosed leopard lizard habitat, western spadefoot, burrowing owl, Swainson's hawk and nesting raptors, tricolored blackbird, swallows (*Hirundinidae*), bats (*Chiroptera*), small mammal habitat, San Joaquin kit fox (*Vulpes macrotis mutica*), and canid dens and burrows. Although protocol-level surveys were not performed for all special-status species over the entire pools, the extensive number of surveyor hours in the field during targeted or reconnaissance surveys, past and present, increased the potential for sensitive resources to be observed and documented. All relevant survey data compiled from 2015 and onward was used in preparation of this report.

3.4.1 Habitat Surveys and Land Use

Vegetation and Habitat Mapping

Vegetation and habitat mapping occurred in February 2020 between MP 122.0 and MP 172.5, along the DWR right-of-way from the SLC to the adjacent property boundaries. Surveys consisted of driving all accessible roads within the SLC right-of-way and stopping when necessary to classify vegetation alliances. Vegetation and habitat data were collected or edited using ArcGIS Collector by working with previously digitized maps of delineated vegetation types. Vegetation communities were defined by the dominant species and categorized into vegetation alliances based on the definitions included in *A Manual of California Vegetation* (Manual) (Sawyer et al. 2009). Each stand identified had both compositional and structural integrity as defined in the CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment and Relevé Field Form (CNPS 2019). The minimum mapping units described in the CDFW-CNPS Protocol of 1 acre for upland vegetation and 0.5 acres for special stands, including riparian areas and wetlands, were used in the assessments.

General Habitat Assessment

General habitat assessment surveys in the vicinity of Pools 20 and 21 and MP 127.6 borrow site in Pool 17 have been conducted annually for maintenance projects such as erosion repairs and vegetation management. Relevant results from surveys conducted from 2015 to 2024 were used to prepare this report. During general habitat assessments, all observations of special-status species and their suitable habitat were recorded. These surveys included pedestrian, windshield, or a combination thereof using the SLC access roads, toe roads, and publicly accessible roads. Species or species' resources (e.g., habitat and microhabitat) were visually identified using a spotting scope, binoculars, or unaided vision. In areas of potential interest, such as areas with sensitive or native habitat features, pedestrian surveys were conducted to ensure total visual coverage of the area.

Aquatic Resources

In 2021, a desktop review of aerial photographs (1984–2021) was completed. Mapped vegetation types, soil surveys, U.S. Geological Survey 7.5-minute topographic quadrangle maps, and the National Wetlands Inventory were referenced for signatures of hydrophytic vegetation, inundation and/or soil saturation, topographic depressions or channelization.

Aquatic resource delineation and mapping surveys were performed on June 22, 23, and 24 and September 28, 2021. The study area is in Fresno County, California, within the city of Huron and the community of Cantua Creek. The delineation and mapping was completed following the protocols described in the *1987* [U.S. Army] *Corps of Engineers' Wetland Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (USACE 2008a).

3.4.2 Special-Status Species Surveys

Blunt-nosed Leopard Lizard

Blunt-nosed leopard lizard is found in semiarid grasslands, alkali flats, and washes. The species also requires the presence of small mammal burrows for use. The species prefers flat areas with open space for running and thus avoids densely vegetated areas.

A desktop analysis was conducted using past general assessment from 2015 through the current year of areas within the Project site with potentially suitable habitat to conduct protocol level surveys for the species.

Suitable habitat was not identified in the vicinity of the Project site; therefore, protocol surveys were not conducted.

Western Spadefoot

Suitable breeding sites for western spadefoot include turbid ephemeral pools, such as vernal pools, stock ponds, roadside ditches, irrigation ditches, and deep pools within ephemeral creek beds with extended hydroperiod after flows have subsided for the season. Suitable upland habitat can include open grassland habitat and open shrubland with sandy friable soils, with presence of small mammal burrows.

Potential suitable upland and breeding habitats for western spadefoot were identified using aerial imagery and USFWS National Wetlands Inventory. Research conducted by Baumberger et al. (2019), was incorporated for search distances and habitat suitability. Field verifications were then conducted and once suitable habitat presence was confirmed, visual surveys to determine species presence occurred. The surveys also included verifying the suitability of upland habitat identified by the habitat suitability model. Based on research conducted by Baumberger et al. (2019), the habitat suitability model was developed using a maximum distance of 262 meters from suitable aquatic habitats to upland soil types that spadefoots prefer for aestivation. The survey methodology to determine presence of western spadefoot is described below.

Spadefoot diurnal surveys were conducted beginning of March until mid-July 2024. Surveys were focused on western spadefoot individuals in the egg, larval, and metamorph life stages and occurred at suitable breeding sites within and adjacent to the DWR right-of-way. Surveys involved visually inspecting the pools for any signs of amphibian presence; when present, further inspection was done by dip-netting larval amphibians to identify the species. Dip-netting was done when visual inspection alone wasn't sufficient for adequately surveying the pools. Plastic handled dip-nets with nylon mesh and fine mesh aquarium nets were used to sweep through vegetation and other debris when sampling the pools for spadefoots and other amphibians. The number of sweeps varied per pool based on the size of the pool and whether spadefoot was previously observed at that location.

Pools that were too difficult to dip-net because of muddy conditions or depth were revisited later to check for metamorphs within the adjacent upland. Any metamorph

amphibians encountered were hand-captured to identify the species. Shallow ephemeral pools along roads and road shoulders with the presence of spadefoot larvae were revisited to determine if metamorphosis was completed before the breeding pool dried up.

Estimation of the total number and life stages of each species were recorded. Larval and metamorph amphibians were inspected for abnormalities, and representative photographs of each individual were taken. In addition, pools and surrounding upland habitat where spadefoots were observed were photographed. Additional data collected included estimated pool size, depth, and notes on habitat and vegetation in and near the pool.

Swainson's Hawk and Nesting Raptors

The species is observed throughout the Central Valley during the spring and summer. They depend on annual grasslands and agricultural fields for foraging. The species also requires structures or trees for nesting opportunities. Single trees, small stands of trees spread amongst the agricultural fields, structures, and homesteads with shade trees provide nesting habitat for the species

A desktop analysis using aerial imagery identified areas within the vicinity of the Project site with potentially suitable nesting trees for Swainson's hawk and other nesting raptors. A field-based habitat assessment at these locations verified habitat suitability for Swainson's hawk and other nesting raptors. Surveys occurred in the DWR right-of-way and the immediately adjacent area, depending on access and visual capabilities, with an approximately 0.25 to 0.5-mile buffer around the SLC. Individual observations of Swainson's hawk, nest locations, and active or suitable nesting trees were documented. Surveys were conducted by windshield and methods were consistent with the *Swainson's Hawk Technical Advisory Committee Recommended Timing and Methodology* (2000). Surveys were conducted between February 18, 2021, and August 4, 2021.

Tricolored Blackbird

Tricolored blackbirds typically require open water, protected nesting substrate, and foraging grounds within vicinity of the nesting colony. This species nests in dense thickets of cattails (*Typha* spp.), tules (*Schoenoplectus* sp.), willow (*Salix* spp.), blackberry (*Rubus* spp.), wild rose (*Rosa* spp.), and other tall herbs near fresh water. They also nest in crops such as grains or silage.

Potential suitable nesting habitat was identified by analyzing existing baseline data and aerial imagery. Biologists then conducted a field-based habitat assessment at these locations to verify habitat suitability for tricolored blackbird in May 2021. Surveys occurred in the DWR right-of-way and areas within an approximately 0.25- to 0.5-mile radius from the SLC.

During the 2024 field season previously known occurrences were revisited to update the status of the observations.

Burrowing Owl

Burrowing owls inhabit open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats. They usually nest in old burrows of ground squirrel, or other small mammals.

February through March 2019, multiple burrowing owl reconnaissance surveys were conducted for an irrigation crossing inspection and repair project. During this reconnaissance surveys, all suitable burrowing owl burrow locations were recorded with a global positioning system (GPS) device. Irrigation crossings included MP 161.62, MP 162.08, MP 163.18, and MP 163.67. Additional burrowing owl surveys were conducted during preconstruction surveys in accordance with the 2012 *Staff Report on Burrowing Owl Mitigation*, Appendix D, breeding season survey protocol (CDFG 2012). The surveys were primarily conducted by windshield in areas where the surrounding area was clearly visible from the vehicle; however, transects were walked where windshield surveys were not adequate to determine presence of burrowing owl or burrows. Transects were typically spaced 25 to 60 feet apart, depending on topography and vegetation height and density. All suitable burrowing owl burrow locations near various irrigation crossings were recorded and mapped using GPS enabled devices.

In 2021, burrowing owl surveys were conducted as part of the nesting raptor study within Pools 20, 21, and MP 127.6 borrow site in Pool 17, between February 18, 2021, and August 4, 2021. Surveys were conducted by windshield and methods consistent with CDFW protocol. Species or active burrow sightings were recorded using GPS.

During the 2024 field season previously known occurrences within the vicinity of the Project site were revisited to update the status of the observations.

Bats and Swallows

Bridges and check structures are known to provide usable habitat for bats (Keeley 2020) as well as for swallows (Audubon 2021). All species of swallows receive protection under the federal Migratory Bird Treaty Act (MBTA), which specifically protects active bird nests and their young. Bats use bridges for daytime shelter and night roosts, specifically for migratory stopover sites, hibernation sites, day roosts for nursery and bachelor colonies, and night roosts at different times of the year. Swallows are migratory and use bridges during the spring/summer breeding season.

Visual surveys were conducted for bats and swallows in May 2021 and acoustic surveys were conducted at bridges that could be impacted by the Project during summer and fall that same year (**Table 6**). The structures were visually inspected for secondary signs of use by bats (e.g., guano) and swallows (guano and nest structures).

To confirm ongoing use and to identify the specific species using the structure it was further assessed using targeted survey tools and methods described below.

TABLE 6
BRIDGES CROSSING ALONG POOL 20 AND POOL 21 OF THE SLC THAT COULD BE IMPACTED BY THE PROJECT

Bridges	Milepost	Pool
Gale Avenue	158.45	20
Jayne Avenue	161.57	20
Avenal Cutoff Road	164.40	20
Plymouth Avenue	167.36	21
30th Avenue	169.40	21
Quail Avenue	170.42	21

Bat Surveys

During 2021, two acoustic surveys of each of the bridges identified in Table 6 occurred: once in the summer during the rearing season, and once in the fall during migration. The surveys utilized hand-held acoustic mobile detectors to record and identify use and the species present. The mobile capability of these acoustic detectors allows the microphones to be pointed toward areas of high use (determined by presence of guano deposits, observations of flying bats, or usable habitat features), but still allows for functionally omnidirectional sampling to ensure all airspace is surveyed and low-density species are detected if they are present. All bat detections were independently assessed and verified by during post-processing using the Kaleidoscope Pro Classifier software.

During each survey, a total of six survey stations were sampled at each bridge (three on each side). Each survey station was surveyed for 10 minutes using the mobile detectors, which recorded individual flyovers. The use of the survey stations was an adaption of the mobile acoustic transect survey protocol (Loeb et al. 2015).

Data collected included all observed species, as identified by Kaleidoscope Pro Classifier auto identifier (created by Wildlife Acoustics), as well as any observed population and distribution patterns, such as the level of activity, population size estimates, and areas of each bridge that appeared to be preferred, including any flight corridors.

Between April and July 2024, surveys utilized hand-held acoustic mobile detectors and a passive detector to record and identify the species present.

Bridges with previous detections at MP 155.68 and MP 167.36 were revisited as well as Check 17. The mobile capability of these acoustic detectors allows the microphones to be pointed toward areas of high use (determined by presence of guano deposits, observations of flying bats, or usable habitat features), but still allows for functionally omnidirectional sampling to ensure all airspace is surveyed and low-density species are detected if they are present.

During each bridge survey, a total of six survey stations were sampled at each bridge (three on each side). Each survey station was surveyed for 10 minutes using the mobile detectors, which recorded individual flyovers. At check 17 a passive recorder was placed in a central location next to Check 17 just after sunset. This omnidirectional microphone provided a larger detection radius and higher sensitivity than that of the handheld microphones (Loeb et al. 2015). These tools and methods have been established as an effective way to target specific features to survey for bat use (Loeb et al. 2015). All bat detections were independently assessed and verified during post-processing using the SonoBat 4.4.5 (Version 4) North America software. The passive detector was left in place for two hours while active detectors were deployed for one hour.

Data collected included all recorded species.

Swallow Surveys

In 2021, Swallow surveys were conducted at each bridge identified in Table 6 during the spring/summer breeding season (extending from April through August), which peaks in June when these birds are in the region and nesting. Surveys were conducted prior to dusk, when foraging and nest site activities were high and identification characteristics were visible. All biologists used quality optics (binoculars and/or spotting scopes) and were familiar with avian field identification and swallow species found in the region.

The initial survey included recording whether species presence or nesting activity was observed at each bridge. Then, two point-count stations were surveyed at each bridge—one on the upstream side and one on the downstream side. The point count stations were positioned approximately 10 meters from the side of each bridge to facilitate full visibility and perspective. The relatively short span of each bridge, along with clear views down their lengths, allowed the sides of each bridge and bridge surroundings to be fully surveyed from the two point-count stations. Each point count lasted a total of 10 minutes, and the data collected included all species observed, as well as any population and distribution patterns noted, such as the level of activity, population size estimate, estimate of number of active nests, and any areas of the bridge that appeared to be preferred. The survey was conducted by two teams of biologists who worked in tandem to survey each bridge from the two-point count stations concurrently.

In 2024, surveys for swallows were not conducted at bridges within the Project site, as they are known habitat for swallows. Therefore, swallows were assumed present on every bridge within the Project site. However, a survey was conducted that specifically examined the Check 17 structure for use by swallows—mainly nesting activity. The survey lasted for 30 minutes, and the data collected included all species observed, such as the level of activity, population size estimate, estimate of number of active nests, and any areas of the structure that appeared to be preferred. The survey was conducted in mid-July (during the spring/summer breeding season) by two biologists who worked in tandem to survey the structure concurrently. All biologists used quality optics (binoculars and/or spotting scopes) and were familiar with avian field identification and swallow species found in the region.

Small Mammal Habitat

Two field surveys were conducted to identify potential suitable habitat for giant kangaroo rat (*Dipodomys ingens*), and other special-status small mammal species with potential to occur within and around the Project site. The goal was to identify and analyze any site that contained adequate habitat features. Qualifying habitat features included the presence of sandy-loam or friable soils, sparse annual grasses, and desert shrubs such as Atriplex. If a site was identified as potential habitat, an examination for evidence (burrows, scats, tail drags, dust bath, seed caches, haystacks, vertical vents, etc.) of special-status small mammal species would be conducted.

Surveys were conducted on May 19 and June 2, 2021 using vehicle and pedestrian surveys in Pools 20 and 21 and MP 127.6 borrow site in Pool 17.

Wildlife Corridor

San Joaquin kit fox have been observed historically along the SLC and adjacent lands. This indicates that the SLC right-of-way may be used as a migratory corridor, for foraging, and possibly for denning.

To assess use by this species, infrared motion activated wildlife cameras were utilized in combination with scent/track stations in areas with the highest potential for San Joaquin kit fox. Reconyx Hyperfire cameras with 0.2-second trigger speed, up to 90 photos per trigger, and 80mb/s download speed were used. Scent/track stations consisted of 1 square meter of diatomaceous earth spread on the ground with a scent tablet and paste placed in the center to attract wildlife.

DWR biologists placed cameras and scent/track stations near active dens, old dens, fallow agricultural lands, historic CNDDB kit fox records, areas high in small mammal presence (kangaroo rats; *Dipodomys* spp.), and potential movement corridors. Cameras and scent/track stations were deployed for a minimum of 10 days per the *United States Fish and Wildlife San Joaquin Kit Fox Protocol for the Northern Range* (USFWS 1999). Four camera deployments, each consisting of four camera/track stations, were placed to cover the left and right sides of Pools 17, 20, and 21. Cameras were deployed from June 21, 2021 to October 7, 2021, see **Table 7** for more detail.

TABLE 7
CAMERA DEPLOYMENT LOCATIONS AND DATES

Deployment Date	Location
6/21/2021–7/01/2021	172.15 Left
	171.47 Left
	169.30 Left
	164.90 Left
7/06/2021–7/16/2021	172.32 Right
	169.30 Right
	167.85 Right
	166.25 Right
7/19/2021–7/29/2021	163.26 Left
	162.00 Left
	158.74 Left
	156.60 Left
8/02/2021–8/16/2021	164.50 Right
	162.68 Right
	159.80 Right
	158.15 Right
9/27/2021–10/07/2021	129.21 Right
	127.36 Right
	124.74 Right
	123.29 Right

Den and Burrows

Den and burrow surveys within the Project site were conducted in 2019 and 2020 on both sides of the SLC in Pools 20 and 21 and MP 127.6 borrow site in Pool 17. The results from the 2019 and 2020 surveys were then verified during surveys conducted in 2021. Surveys were conducted by windshield and on foot to gain one hundred percent visual coverage. Surveyors drove all accessible roads and scanned for canid dens and medium-sized burrows (greater than 4 inches). In areas where visual coverage could not be obtained by windshield, in areas with thick vegetation or steep inclines, or in areas where no roads were present, surveyors walked transects—generally 30 feet apart. All identified canid dens were mapped using ArcGIS Collector. The condition of the dens and possible species occupying the dens were documented, and photographs were taken. The 2020 and 2021 surveys were conducted from September 22 to 24, 2020; June 2, 2021; and June 14, 2021.

During the 2024 field season previously known occurrences within the Project site were revisited to update the status of the observations.

Crotch's Bumble Bee

The habitat assessments followed the Habitat Assessment portion of the 2023 California Department of Fish and Wildlife Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species (survey considerations) (CDFW 2023). The assessments included documenting potential nesting resources, potential overwintering resources, and potential foraging resources. Each blooming plant species was identified, the approximate percent cover of these species was calculated, and the percent of the species that were in bloom was estimated. To calculate the estimated floral cover at each site, an approximate one meter by one meter quadrat was placed randomly within the site at five separate locations. The cover of each flowering species within a quadrat was calculated and averaged among the five quadrats. Shrubs and trees were excluded from quadrats, and instead the percent coverage of these plants were measured using aerial imagery and area calculation tools on ArcGIS Pro.

Because bumble bees are an annual species, only plants that were alive this season had their cover estimated; however, the remains of plants from previous seasons were identified to the finest known level (species or genus) and noted to determine if successional blooms are potentially possible within the site if conditions are favorable. Observed land use activities that may be considered to cause habitat disturbances were documented at each site and in the adjacent lands to each site. Habitat disturbing activities that surveyors looked for included soil disturbances, vegetation removal, chemical application, fire, honey bee (*Apis mellifera*) boxes, and heavy grazing.

Where visible, surveyors took notes of nesting and overwintering features and of flowering plants in the adjacent lands. However, surveyors did not enter these lands to avoid trespassing, so the list of nesting features, overwintering features, and flowering plants is likely incomplete and the percent cover of plants and flowers in the adjacent lands could not be calculated. Habitat disturbing activities in the adjacent lands were also documented using the same criteria for the site assessment.

In sites where there was potentially suitable foraging habitat, foraging bee surveys were performed. A site was considered potentially suitable if the percent cover of flowering resources was at least greater than one percent during the habitat assessment. These surveys were performed following the Foraging Bumble Bee portion of the CDFW survey considerations (CDFW 2023). Each of these surveys were conducted at least one hour after sunrise and at most two hours before sunset, temperatures were between 65 degrees Fahrenheit and 90 degrees Fahrenheit, shadows were visible during surveying periods, sustained wind speeds were below eight miles per hour, and surveys were not performed on days with precipitation. Each survey was 60 person-minutes long. All observed pollinating insects were recorded; however, because the purpose of these surveys was to identify potentially occurring bumble bees, these insects were only identified to the finest detail possible through visual observations.

Special-Status Plants

A desktop analysis was conducted to identify areas in the vicinity of the Project site with potentially suitable habitat for special-status plants that were identified during the literature review. The desktop analysis is described in Section 3.3.2 and Table 5.

4. Results: Discussion of Biological Resources

4.1 Habitat Communities and Land Use

4.1.1 Plant Species

Plant diversity along the SLC and adjacent land varies from year-to-year and is dependent on many factors including precipitation, erosion, adjacent land use, and maintenance activities. The following is the list of plants observed along the SLC and adjacent lands since 2015 (**Table 8**).

TABLE 8
PLANTS OBSERVED WITHIN THE PROJECT SITE

Scientific Name	Common Name	Scientific Name	Common Name
Ambrosia psilostachya	ragweed	*Erodium cicutarium*	red-stemmed filaree
Amsinckia menziesii	fiddleneck	*Helianthus* sp.	sunflower
Arundo donax	Giant reed	*Heliotropium curassavicum*	Heliotrope
Astragalus sp.	astragalus	*Hordeum murinum*	foxtail barley
Atriplex lentiformis	quailbush	*Lactuca serriola*	prickly lettuce
Atriplex polycarpa	cattle spinach	*Laennecia coulteri*	Coulter's horseweed
Avena barbata	slim oat	*Lepidium latifolium*	broadleaved pepperweed
Avena fatua	wild oat	*Malva neglecta*	common mallow
Baccharis pilularis	coyote bush	*Malva parviflora*	cheeseweed
Baccharis salicifolia	Mule fat	*Marrubium vulgare*	horehound
Brassica nigra	black mustard	*Matricaria discoidea*	pineapple weed
Bromus diandrus	ripgut	*Melilotus* sp.	sweet clover
Bromus madritensis	Foxtail	*Parkinsonia* sp.	palo verde
Bromus madritensis ssp. *rubens*	red brome	*Poa annuua*	annual bluegrass
Centaurea melitensis	tocalote	*Prosopis* sp.	mesquite
Centaurea solstitialis	Yellow starthistle	*Rumex crispus*	curly dock
Centromadia sp.	tarweed	*Salsola tragus*	Russian thistle
Convolvulus arvensis	bindweed	*Sisymbrium irio*	London rocket
Croton setigerus	doveweed	*Tamarix* sp.	saltcedar
Datura wrightii	Jimsonweed	*Typha* sp.	cattails
Deinandra sp.	tarplant	*Urtica* sp.	stinging nettle
Erigeron canadensis	Canada horseweed		

4.1.2 Vegetation Alliances and Habitat Types

Based on the habitat mapping that was described in Section 3.4.1, the Project site consists of 13 vegetation alliances that were identified using categories and criteria defined in the Manual. From those vegetation communities, six habitat types can be further distinguished using California Wildlife Habitat Relationships (CWHR) in conjunction with the Manual. Habitat and natural community types present within the Project area include barren, alkali desert scrub, annual grassland, valley foothill riparian, deciduous orchard, and freshwater emergent wetland (**Table 9**) (CWHR). A discussion of additional land use types, such as cropland, irrigated row crops, and additional orchards can be found in the Land Use section. Discussion of additional land use types, such as cropland, irrigated row crops, and deciduous orchard can be found in Section 2.3. Mapped vegetation alliances are depicted in **Figure 7** through **Figure 9**.

The most dominant habitat type is barren. This does not include the developed areas such as the roadway and structures where the work is to occur. The barren areas are concentrated on the embankment slopes and the shoulder of the SLC's paved roads. Occurrences of annual grassland and desert riparian that are found at the toe of the embankment and situated within the right-of-way between the agricultural land and the SLC.

Additional areas, on both sides of the SLC, contained small patches of alkali desert scrub. The habitat types consist of vegetation alliances with dominant vegetation such as quail bush and Russian thistle.

Vegetation alliances such as cattail marshes are typically associated with freshwater emergent wetland habitats, however, the cattail stands in the vicinity of the Project site are mainly associated with agriculture ponds and canals created to hold and transport agriculture water. These ponds and canals are routinely modified, plowed under, and re-established. They are surrounded by annual grassland, bare ground, or agriculture.

The provisional alliances documented during vegetation mapping are a mixture of native vegetation and invasive species or relatively small areas where a common native species is dominant.

The habitat types are geographically fragmented and persistently disturbed. The highly fragmented and disturbed nature of the SLC right-of-way can be attributed to introduced non-native species, adjacent agricultural land use, routine mowing and spraying along the SLC, and vandalism such as burning, discing, and trash dumping.

TABLE 9
VEGETATION ALLIANCES AND HABITAT TYPES WITHIN THE PROJECT SITE

Vegetation Community/ Land Cover Type (State Rank)	Associated CWHR Habitat Type	Description
fiddleneck- filaree fields (S5)	annual grassland	Characterized by open grasslands composed of annual grasses and forbs. Often occur as an understory to other habitats. Species diversity and structure depends largely on weather patterns and grazing. Great physical differences are characterized between seasons.
wild oats and annual brome grassland (SNA)		
red brome or Mediterranean grass grassland (SNA)		
tar plant fields (S2)		
sunflower patches*		
Russian thistle fields*	alkali desert scrub	Characterized by open stands of very low to moderately high (0.25–2.0 meters; 0.8–6.6 feet) grayish, spinescent, leptophyllous to microphyllous subshrubs and shrubs, which are physically uniform, widely spaced, and occur on relatively dry soils.
quailbush scrub (S4)		
willow thickets (S4)	Valley foothill riparian	Characterized by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. They are generally associated with low velocity flows, flood plains, and gentle topography. Valleys provide deep alluvial soils and a high water table. Potential evaporation during the warmest months is often greater than precipitation. Low rainfall and streamflow result in water scarcity in many parts of the area.
mulefat-quailbush*(S4)		
cattail marshes (S5)	fresh emergent wetland	Characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots to 2 m (6.6 ft) tall. Are flooded frequently, enough so that anaerobic soil conditions occur.
mulefat thickets (S4)		
wild almond grove*	deciduous orchard	Characterized by open single species tree habitat. Typically, low bushy trees with an open understory. Spacing between trees is uniform and the understory is usually composed of low-growing grasses, legumes, and other herbaceous plants.
bare land/disturbed	barren	Characterized by the absence of vegetation. Any habitat with <2% total vegetation cover by herbaceous, desert, or nonwildland species and <10% cover by tree or shrub species is defined this way. May consist of sparse growth, rock, gravel, and soil.

Notes:

* Alliances that have sufficient data to propose the vegetation type, but not enough research and regional information to be confident about its status in California's vegetation (California Department of Fish and Wildlife, VegCAMP).
SNA = Semi-natural Alliances - strongly dominated by non-native plants that have become naturalized in the state.
S1 = Critically Imperiled – At very high risk of extirpation due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
S2 = Imperiled – At high risk of extirpation due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
S3 = Vulnerable – At moderate risk of extirpation due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
S4 = Apparently Secure – At a fairly low risk of extirpation due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
S5 = Secure – At very low or no risk of extirpation due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.

4.1.3 Adjacent Land Use

Land use adjacent to Pools 20 and 21 using 2022 verified data for public use was primarily stone fruit and pistachio orchards. However, idle fields equally dominate the adjacent properties (**Figure 10** and **Figure 11**).

4.2 Sensitive Natural Communities

Tar plant field is an alliance with a State ranking of an “imperiled” sensitive community. It was observed on the right side of the SLC near MP 169.8 in the right-of-way.

In contrast, the right-of-way typically lacks species diversity, and isolation from surrounding agricultural practices are typical obstacles and inhibit habitat ecosystems from flourishing or existing in a natural state.

4.3 Aquatic Resources

The aquatic resources delineation did not identify aquatic resources within the Project site.

4.4 Special-Status Animal Species

Preliminary analysis for special-status animal species described in Section 3.3 in combination with surveys conducted from 2015 through 2024 resulted in the following findings (**Figure 12** through **Figure 14**).

Blunt-nosed Leopard Lizard

Suitable habitat was not identified within the Project site and blunt-nosed leopard lizard was not observed during any of the general or focused surveys that occurred between 2015-2024. Therefore, blunt-nosed leopard lizard is not expected to occur within the Project site.

Western Pond Turtle

Marginal habitat for western pond turtle is present within the Project site. Western pond turtles use aquatic habitats primarily for foraging, thermoregulation, and avoidance of predators. They prefer habitats with large areas for cover (logs, algae, vegetation) and basking sites (boulders or other substrates) and have been observed to avoid areas of open water lacking these habitat features (Holland 1994). The SLC does not offer these features as a concrete-lined canal, open with zero coverage, and little to no foraging habitat is available. Marginal habitat may be present in the form of adjacent drainage basins and canals on the adjacent properties. Therefore, western pond turtle was determined to have no potential to occur within the Project site.

San Joaquin Coachwhip

San Joaquin coachwhip prefers open arid areas such as grassland and scrub habitat. Ancillary observations of the species have been observed along the SLC right-of-way, however, it has not been documented within the Project site. The species habitat has been observed and therefore has a high potential to occur within the Project site.

Western Spadefoot

Suitable breeding sites for western spadefoot include turbid ephemeral pools, such as vernal pools, stock ponds, roadside ditches, irrigation ditches, and deep pools within ephemeral creek beds with extended hydroperiod after flows have subsided for the

season. Suitable upland habitat can include open grassland habitat and open shrubland with sandy friable soils, with presence of small mammal burrows.

Western spadefoot has been identified at two locations and known to be present within the Project site. Temporary water sources adjacent to access roads contained larvae or tadpoles at MP 160.16 and MP 168.50. Therefore, there is high potential for this species to occur within the Project site.

Swainson's Hawk

The species is observed throughout the Central Valley during the spring and summer. They depend on annual grasslands and agricultural fields for foraging. The species also requires structures or trees for nesting opportunities. Single trees, small stands of trees spread amongst the agricultural fields, structures, and homesteads with shade trees provide nesting habitat for the species.

Two potential Swainson's hawk nest sites have been identified within 0.25 miles of the Project. The nest at MP 169.8 was observed to be active in 2021 and the nest at MP 169.0 was observed to be active in 2024. It is unknown if that was the same breeding pair as observed in 2021. Extensive nesting has been observed within the Westside Detention basin including at Gale Avenue, approximately 0.3 miles north of the Project and adjacent to the Project's access route. The SLC right-of-way offers foraging for the species and the behavior has been observed. Therefore, there is high potential for this species to forage within the Project site.

Tricolored Blackbird

Tricolored blackbirds typically require open water, protected nesting substrate, and foraging grounds within the vicinity of the nesting colony. This species nests in dense thickets of cattails (*Typha* spp.), tules (*Schoenoplectus* sp.), willow (*Salix* spp.), blackberry (*Rubus* spp.), wild rose (*Rosa* spp.), and other tall herbs near fresh water. They also nest in crops such as grains or silage.

Tricolored blackbird is historically known to occur directly adjacent to the Project site at MP 164.8 within ponds associated with an Aqueduct Turn Out. Breeding activity has been observed in 2017 and 2021. Breeding was not observed in 2024. The ponds are owned and managed by the adjacent water district and were cleared of vegetation. Although this species is unlikely to nest on site, it could be observed foraging in the area on occasion. Therefore, tricolored blackbird was determined to have a low potential to nest and moderate potential to forage within the Project site.

Burrowing Owl

Burrowing owls inhabit open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats. They usually nest in old burrows of ground squirrel, or other small mammals.

Marginal habitat for the species is present along the adjacent embankments bordering the SLC Road. Five areas have been identified to be active nesting sites in the vicinity:

MP 158.8, MP 159.1, MP 160.2, MP 162.0, and MP 170.4. All but MP 162.0 had signs of presence such as white wash and pellets observed as recently as 2022. Therefore, this species is was determined to have high potential to occur within the Project site.

Other Special-Status Birds and Migratory Birds and Raptors

Northern harrier (*Circus hudsonius*, State Species of Special Concern) is commonly observed throughout this area. Annual grassland provides nesting and foraging habitat for this species, as well as the adjacent agricultural fields and fallowed lands. However, nesting sites have not been identified due to their inconspicuous placement. Therefore, the species has high potential to occur within the Project site.

Other species observed using the Project site were merlin (State Watch List), California horned lark (*Eremophila alpestris*, State Watch List), loggerhead shrike (State Species of Special Concern), and greater roadrunner (*Geococcyx californianus*). Habitat for all of these species occurs, and the site may support their nesting, foraging, or life-history activities. Therefore, these species have high potential to occur within the Project site.

Red-tailed hawks (*Buteo jamaicensis*) and common ravens (*Corvus corax*) are commonly observed using the utility poles for nesting locations. In 2021, one red-tailed hawk nest was observed just over 500 feet from the Project site at MP 169.25.

Cliff swallows (*Petrochelidon pyrrhonota*) are known to nest on bridges and check structures. Nesting was observed at structures located at MP 161.6, MP 164.35, MP 164.7, MP 167.35, MP 169.4, and MP 170.4.

Bats

A diversity of bat species have been documented in the vicinity of Pools 20 and 21 and MP 127.6 borrow site in Pool 17 during the 2021 survey. While some taxa are likely to use the bridges for roosting, not all of those detected may use the bridges directly. The Project site may also provide a corridor for bats, facilitating movement of various species who roost and/or hibernate in surrounding areas. For all bat species detected, the bridges may provide aerial eddies that concentrate flying insects around these structures, enhancing foraging. Bat species that roost in the bridges may be present year-round, with hibernation during the coldest winter months driving extended periods of time within the bridge structures. Recorded species in 2021 included two species detected at the bridge sites were spotted bat (*Euderma maculatum*, state Species of Special Concern) and greater bonneted bat (*Eumops perotis californicus*, State Species of Special Concern). These species were only foraging and gleaning insects at the SLC since the bridges do not fit their desired roosting habitat.

In 2024, three species were recorded; Brazilian free-tailed bat (*Tadarida brasiliensis*), silver-haired bat (*Lasionycteris noctivagans*), and Yuma myotis (*Myotis yumanensis*).

Therefore, western mastiff bat and spotted bat have moderate potential to forage within the Project site.

Small Mammal Habitat

The SLC right-of-way is routinely maintained, which can consist of spraying for weeds, mowing and grading, and repairing erosions. The bulk of burrows within the Project site were California ground squirrel (*Otospermophilus beecheyi*) and gopher burrows along the embankments of the right-of-way. Kangaroo rat presence was observed throughout the Project site in mesquite groves, bare land, and non-native annual grassland, but presence was highest in non-native annual grassland on the left side of Pools 20 and 21. Kangaroo rat presence was confirmed in these habitats during the camera deployments. The Project site lacked areas of widely spread desert shrubs, sites groomed by the species, and vertical vents. The habitat is highly disturbed and currently is not suitable for sensitive small mammals such as giant kangaroo rat, Tipton's kangaroo rat (*Dipodomys nitratoides nitratoides*), Tulare grasshopper mouse (*Onychomys torridus tularensis*), or San Joaquin antelope squirrel (*Ammospermophilus nelsoni*), but is occupied by Heermann's kangaroo rats (*Dipodomys heermanni*), a non-protected *Dipodomys* species.

Wildlife Corridor (San Joaquin Kit Fox and American Badger)

During camera deployment's cameras were placed along the SLC to demonstrate what wildlife prey or predator base of the San Joaquin kit fox may be present or absent. The camera stations in key den and burrow areas did not detect San Joaquin kit fox. The SLC serves as a wildlife corridor for many common species. These species use the corridor for movement (North to South) and as a home range (breeding, foraging). Examples of species detected during camera studies conducted in 2021 are as follows.

- **Carnivores.** Carnivores detected included coyotes (*Canis latrans*), raccoons (*Procyon lotor*), striped skunk (*Mephitis mephitis*), domestic dogs (*Canis familiaris*), domestic cats (*Felis catus*), and bobcats (*Lynx rufus*). Coyotes are the most recorded carnivores.
- During a camera deployment an American badger (*Taxidea taxus*) triggered the camera on two separate dates near a potential den at MP 163.26. It was difficult to determine if the badger was using the den, but during one of the camera trigger events it was observed approaching the active den.
- **Small mammals.** Small mammal species detected were California ground squirrels, kangaroo rats, desert cottontail (*Sylvilagus audubonii*), and black-tailed jackrabbit (*Lepus californicus*).
- **Birds.** Bird species detected were northern mockingbird (*Mimus polyglottos*), Eurasian collared dove (*Streptopelia decaocto*), mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), house finch (*Haemorhous mexicanus*), California quail (*Callipepla californica*) and western kingbird (*Tyrannus verticalis*).
- **Amphibians.** Western toad (*Anaxyrus boreas*)

No San Joaquin kit fox or evidence was recorded at the camera/ track stations, however, American badger was detected.

Dens and Burrows

Two potential canid dens were identified; however, they were not associated with any canid species since there was evidence of burrowing owl at the entrances. No signs of San Joaquin kit fox or evidence of the species, such as scat, or paw prints belonging to the species were observed.

One potential badger den was identified near MP 163.26. Therefore, this species has a high potential to occur within the Project site.

Based on the results of the surveys, San Joaquin kit fox was determined to have no potential to occur within the Project site and American badger has a high potential to occur within the Project site.

Crotch's Bumble Bee

During the general habitat assessment in 2024, surveyors noted if there were any observations of Crotch's bumble bees. No observations were made. Suitable nesting and foraging habitat is available for the species within the Project site. Therefore, Crotch's bumble bee has a moderate potential to occur foraging within the Project site.

Monarch Butterfly

There are no CNDDB records for the species within 3 miles of the Project site, however, monarch butterfly (*Danaus plexippus*) was present in the USFWS iPaC search result. Although this species was reported in the iPaC, the host plant for the species reproduction cycle was not observed within the Project site. Therefore, this species is not expected to occur within the Project site.

4.5 Special-Status Plant Species

The non-native grassland present in the right-of-way is ruderal and highly disturbed. The Project site lacks suitable vegetation alliances for special-status species listed in Table 5; therefore, special-status plant species are not expected to occur within the Project site.

5. Discussion of Impacts

This section describes the potential impacts to protected biological resources in association with Project activities.

5.1 Habitats, Sensitive Natural Communities, and Aquatic Resources

5.1.1 General Habitat

Distribution and health of the vegetation and habitats present will not be impacted. The Project site is exposed to disturbances as discussed in Section 4.1.2.

The right-of-way does serve as a wildlife movement corridor and may be temporarily impacted during construction. The right-of-way will still be available for travel, but construction activities that generate noise, vibrations, and light may affect species passing through.

5.1.2 Habitats and Land Types

Implementation of the Project would occur primarily on developed, red brome or Mediterranean grass grassland, and red brome or Mediterranean grass grassland. Staging and borrows sites have been identified in upland mustards and other ruderal forbs, bare land (disturbed), fiddleneck-filaree fields, and red brome or Mediterranean grass grassland.

Adjacent land uses and agricultural lands will not be impacted.

5.1.3 Sensitive Natural Communities

An “imperiled” alliance with a State ranking was observed on the right side of the SLC anear MP 169.8 in the right-of-way. The alliance is within the Project site but can be avoided during construction.

5.1.4 Aquatic Resources

No aquatic resources were identified at the Project site.

5.2 Special-Status Animal Species

Western spadefoot, San Joaquin coachwhip, Swainson’s hawk, tri-colored blackbird, burrowing owl, other nesting migratory birds, American badger, special-status bats, and Crotch’s bumble bee have the potential to occur within the Project site.

5.2.1 Western Spadefoot

Western spadefoot is has a high potential to occur within the Project site. Research conducted by Baumberger et al. (2019), established a maximum migration distance of 262 meters from suitable aquatic habitats to upland soil types that spadefoots prefer for

aestivation. Water sources with evidence of breeding within the surrounding 262 meters are considered suitable habitat.

5.2.2 San Joaquin Coachwhip

One special-status reptile, San Joaquin coachwhip, has a high potential to occur within the Project site. Although this species has not been documented within the Project site, ancillary observations of this species have been documented along the Aqueduct right-of-way and suitable habitat for this species is present within the Project site.

5.2.3 Swainson's Hawk

Active Swainson's hawk nests were observed during protocol-level surveys conducted in accordance with the Swainson's Hawk Technical Advisory Committee's (2000) Recommended Timing and Methodology, and the Project site provides suitable habitat for this species to nest and forage. Two potential Swainson's hawk nests were identified within 0.25 miles of the Project site: one active nest located at MP 169.8 was identified in 2021 and another active nest located at MP 169.0 was identified in 2024. In addition, extensive nesting has been observed within the Westside Detention basin, including at Gale Avenue approximately 0.3 miles north of the Project site, which is adjacent to the access route. The Aqueduct right-of-way also offers foraging habitat for Swainson's hawk, which has been observed. The annual grassland and scattered trees throughout the Project site provide suitable nesting and foraging habitat for this species. Therefore, Swainson's hawk has a high potential to occur within the Project site.

5.2.3 Tri-colored Blackbird

Tricolored blackbirds typically nest near open fresh water in dense, tall vegetation like cattails (Typha spp.), tule (Schoenoplectus sp.), willows (Salix spp.), blackberry (Rubus spp.), and wild rose (Rosa spp.); however, they will also use standing crops like grain or silage for nesting. In 2017 and 2021, tricolored blackbirds were observed nesting adjacent to the Project site within a water district pond. However, suitable nesting vegetation was removed in 2024, and no tricolored blackbirds were observed following vegetation removal. Consequently, the potential for nesting within the Project site is low, but there is a moderate potential for this species to occasionally forage or occur on-site.

5.2.4 Burrowing Owl

Although only marginally suitable habitat for burrowing owl is present along the adjacent embankments bordering the Aqueduct roads, five nesting sites have been identified in the vicinity of the Project site. Thus, this species has a high potential to occur within the upland annual grassland and disturbed habitats throughout the Project site.

5.2.5 Other Migratory Birds and Raptors

In addition to the special-status bird species discussed previously, the Project site supports a diversity of other migratory birds, including special-status non-listed bird species, protected under the federal Migratory Bird Treaty Act of 1918 and California

Fish and Game Code Sections 3503.5, 3505, and 3511. Special-status non-listed birds (including raptors) with potential to nest on-site include California horned lark, loggerhead shrike, merlin, and northern harrier, which have been observed using the Project site. Nesting migratory birds and raptors have the potential to nest on bridges, structures, power poles, bare ground, and vegetation (including trees and shrubs) throughout the Project site. .

5.2.6 American Badger

American badger has a high potential to occur in Pool 21, as it was previously observed during 2021 surveys. However, the species is known to use multiple dens in an area and move throughout the season. An active known den was never confirmed..

5.2.7 Special-Status Bats

Two special-status bat species, spotted bat and western mastiff bat, were detected during bat surveys conducted in 2021. However, no visual evidence of roosting was observed such as urine stains or piles of guano. Therefore, these special-status bats are determined to have a moderate potential to occur within the Project site.

5.2.8 Crotch's Bumble Bee

One special-status invertebrate species, Crotch's bumble bee, was determined to have a moderate potential to occur within the Project site.

The species has been under consideration of 'Candidate' since late 2022. Because of its recent listing, there is not much available data from natural resource agency databases. Staging and borrow sites will be located in potential foraging habitat for the species. Potential construction related impacts may occur as direct mortality from vehicle strikes or if a nest is observed where ground disturbance is planned then destruction and mortality may occur.

5.3 Special-Status Plant Species

No special-status plant species are expected to occur within the Project site; therefore, no potential impacts to special-status plants would occur.

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Appendix A
Figures

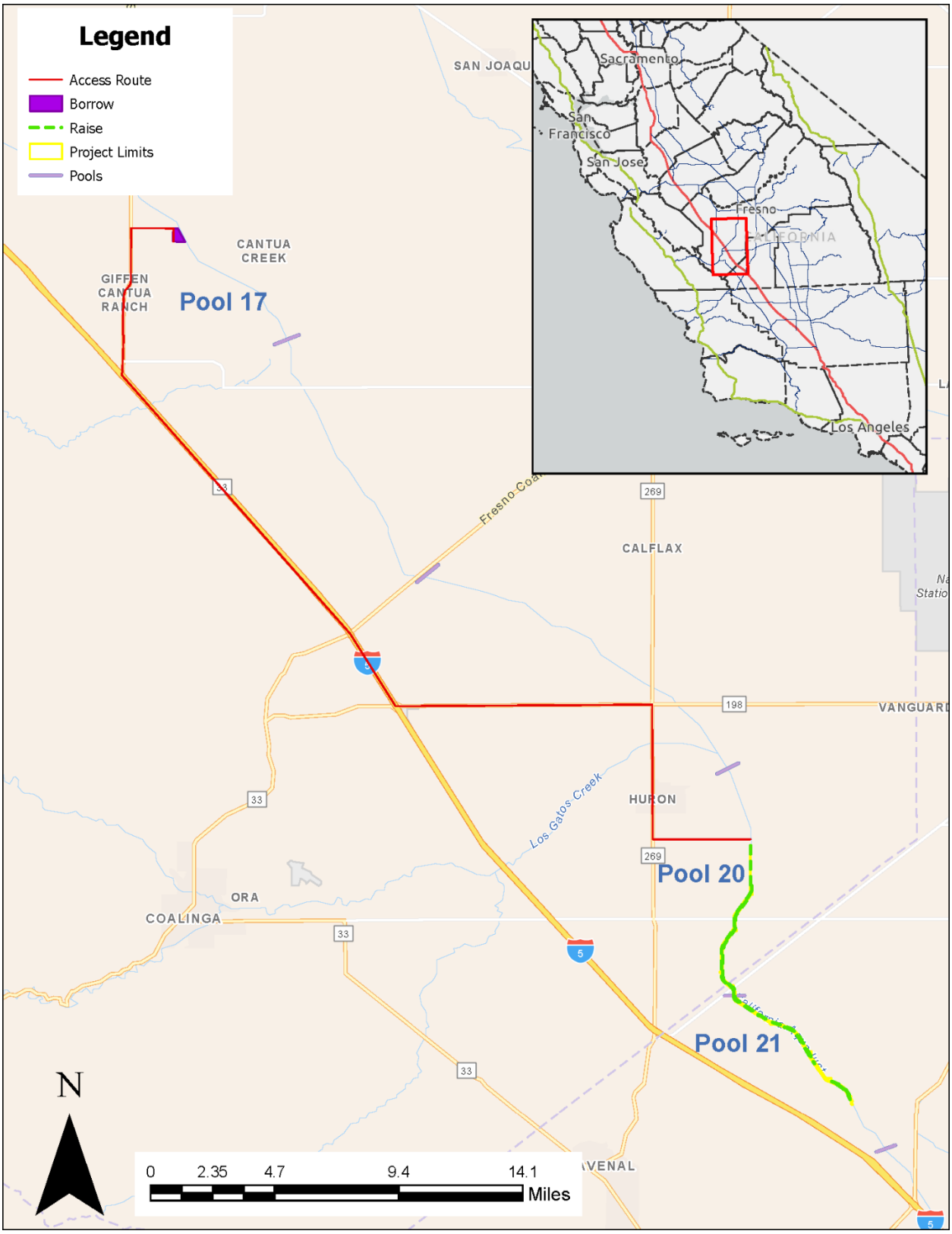


Figure 1 Pool 20 and Pool 21 Project Location

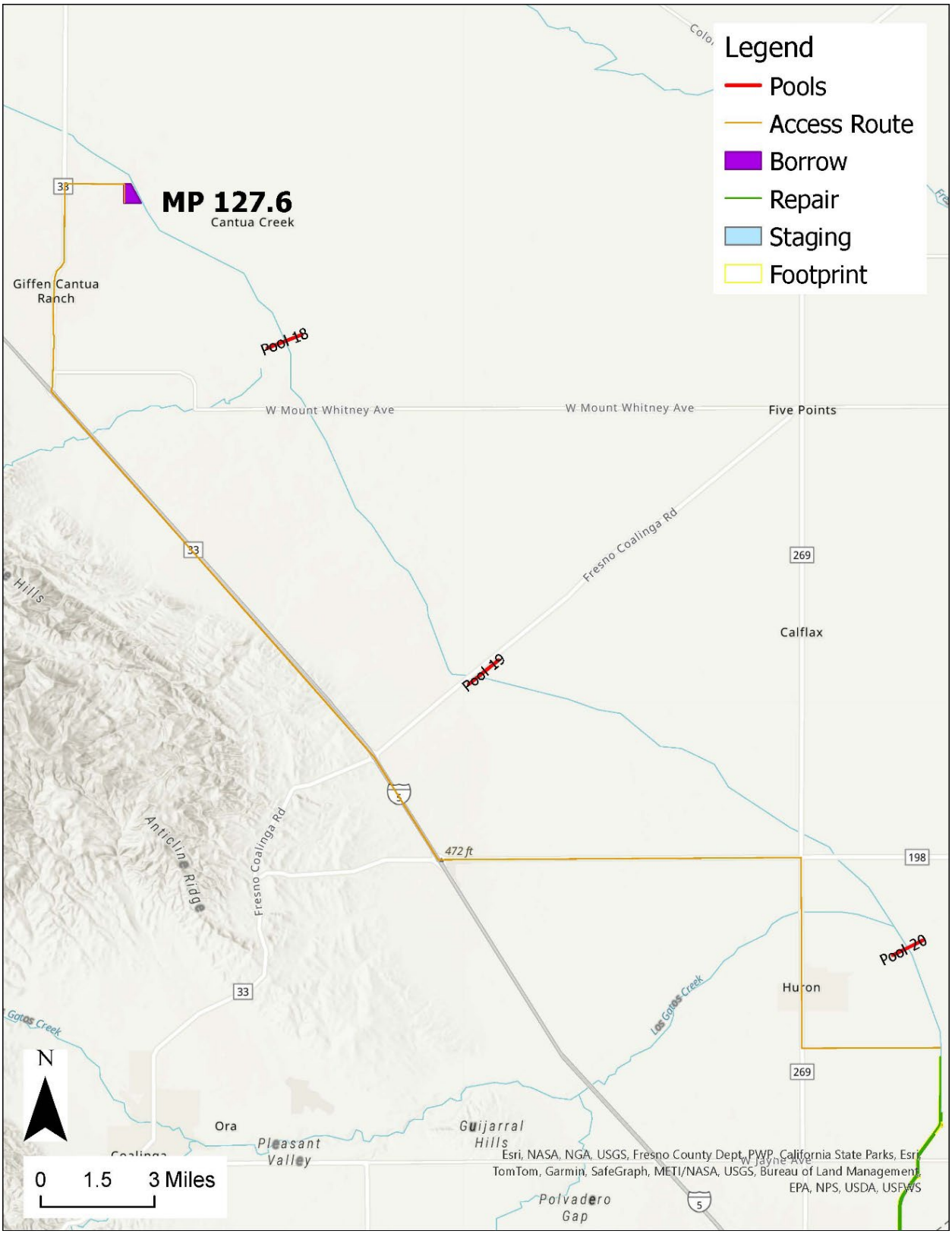


Figure 2 MP 127.6 Borrow Site in Pool 17 Location

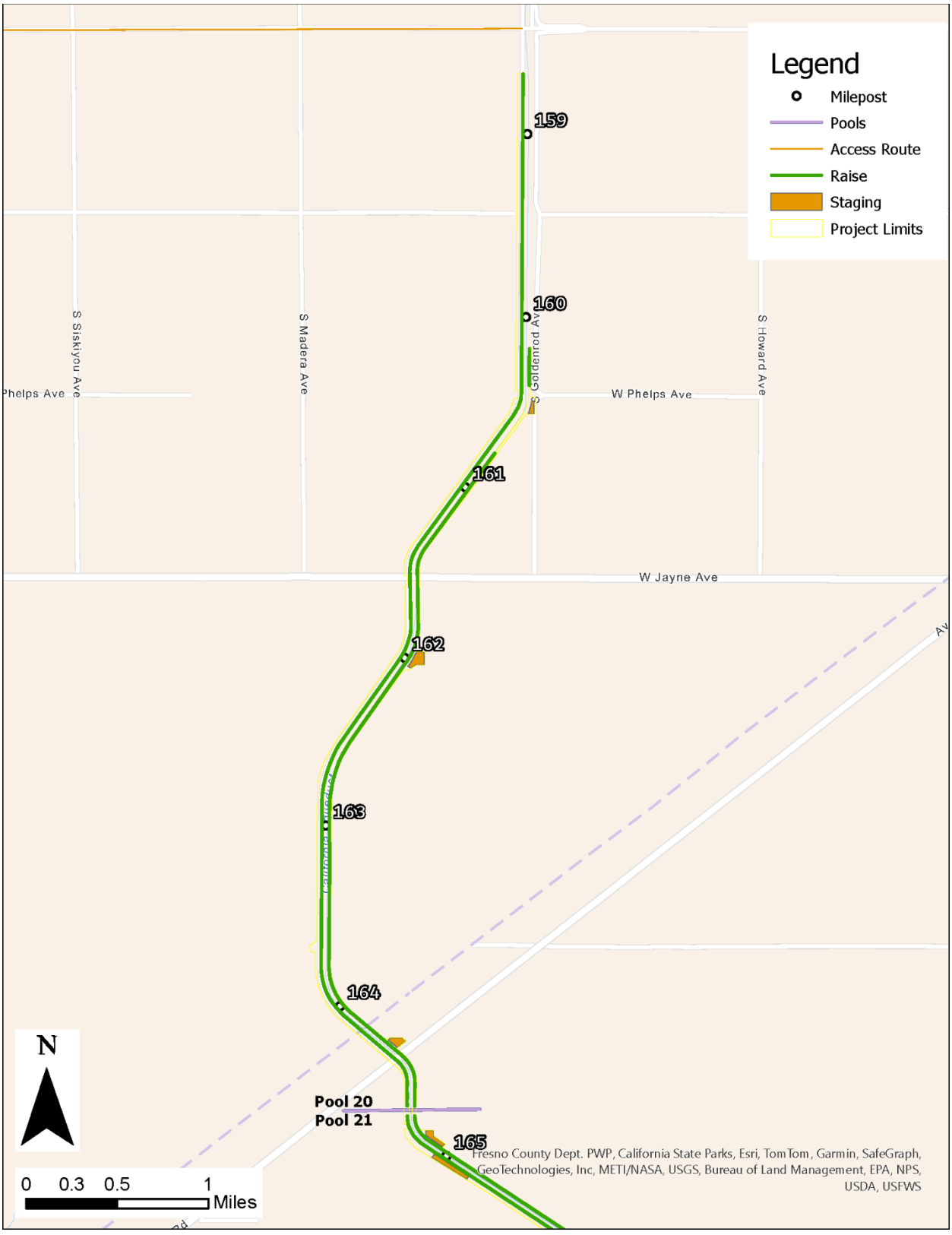


Figure 3 Pool 20 Site

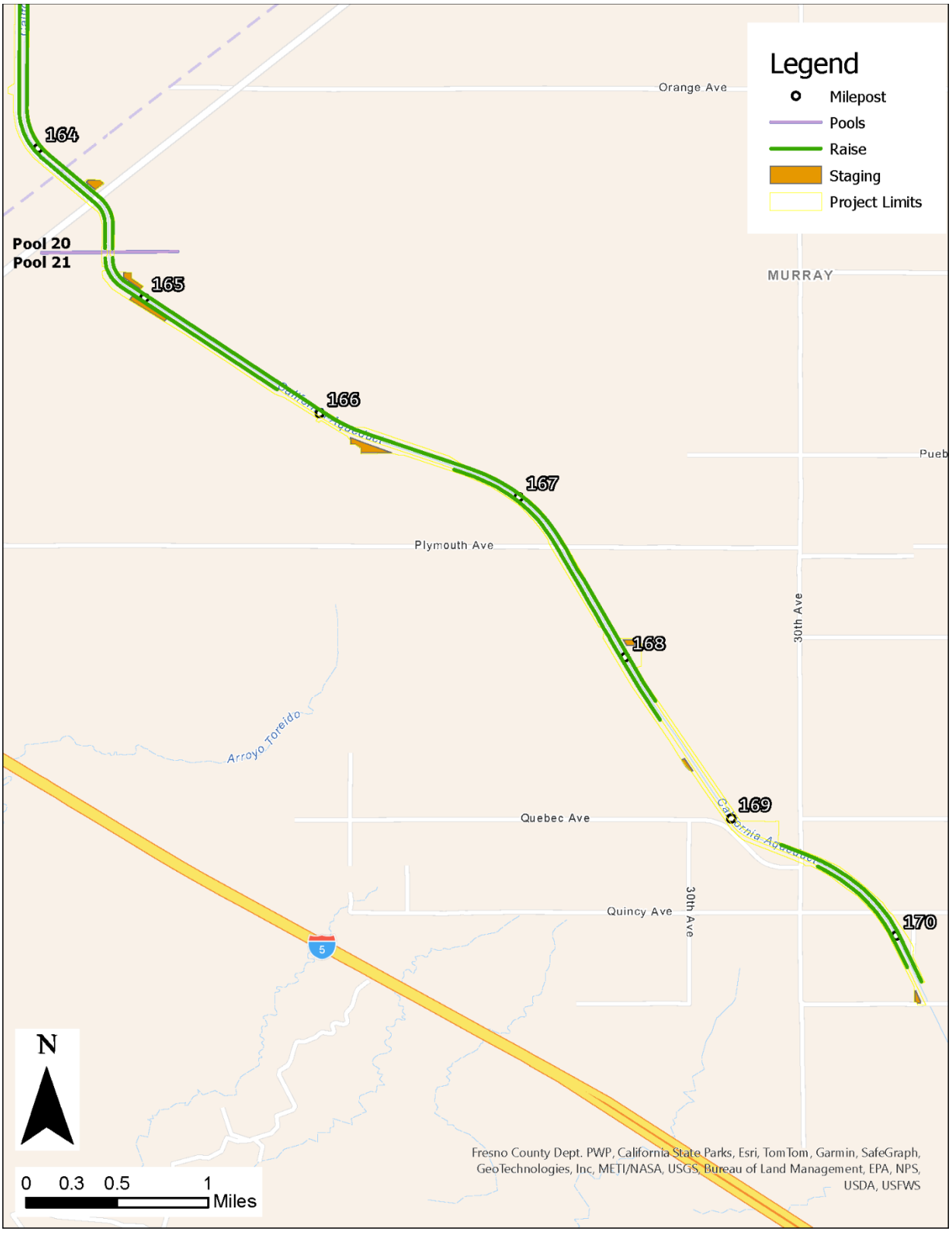


Figure 4 Pool 21 Site

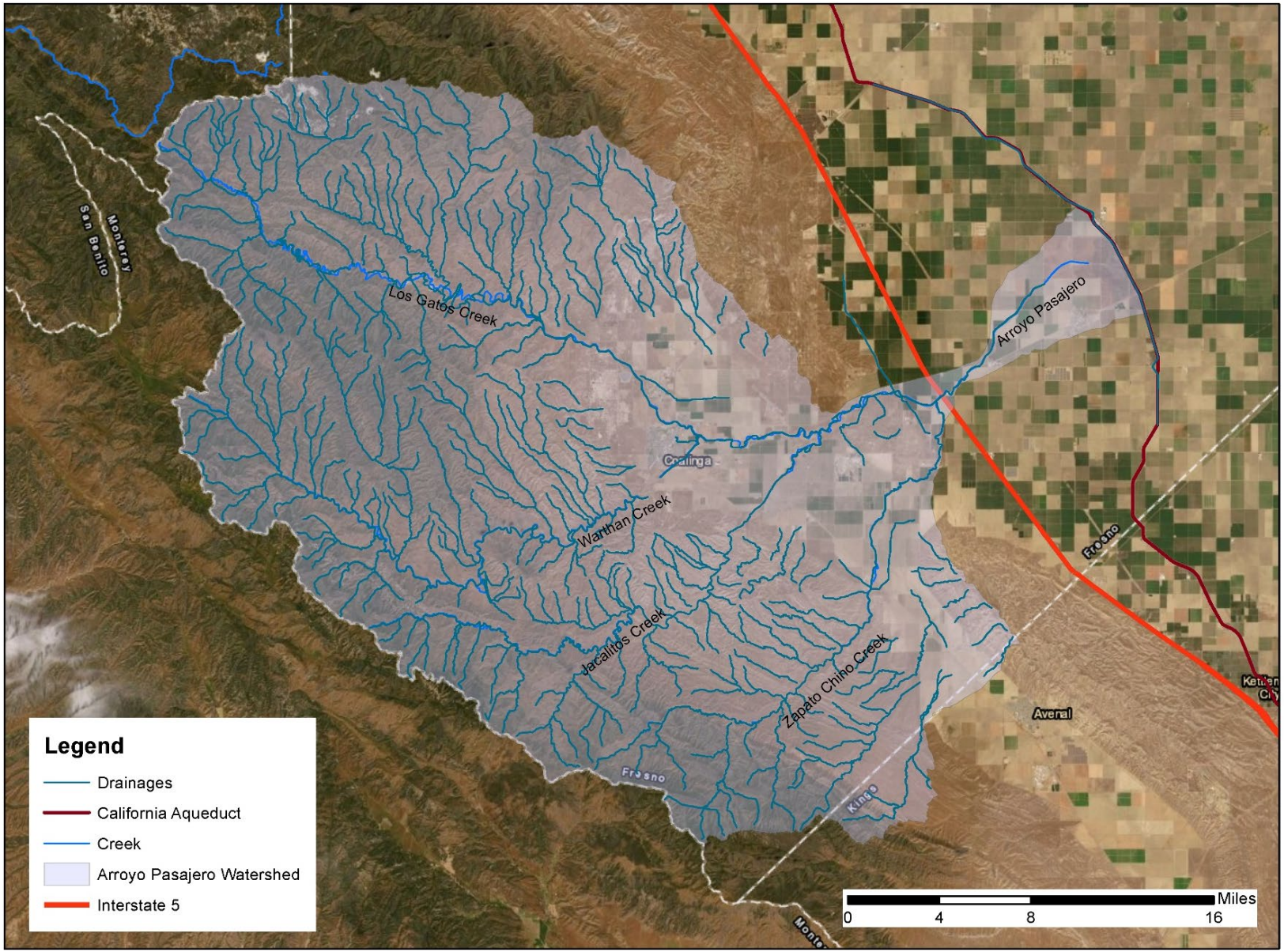


Figure 5 Arroyo Pasajero Stream Group Watershed Located in Pool 20

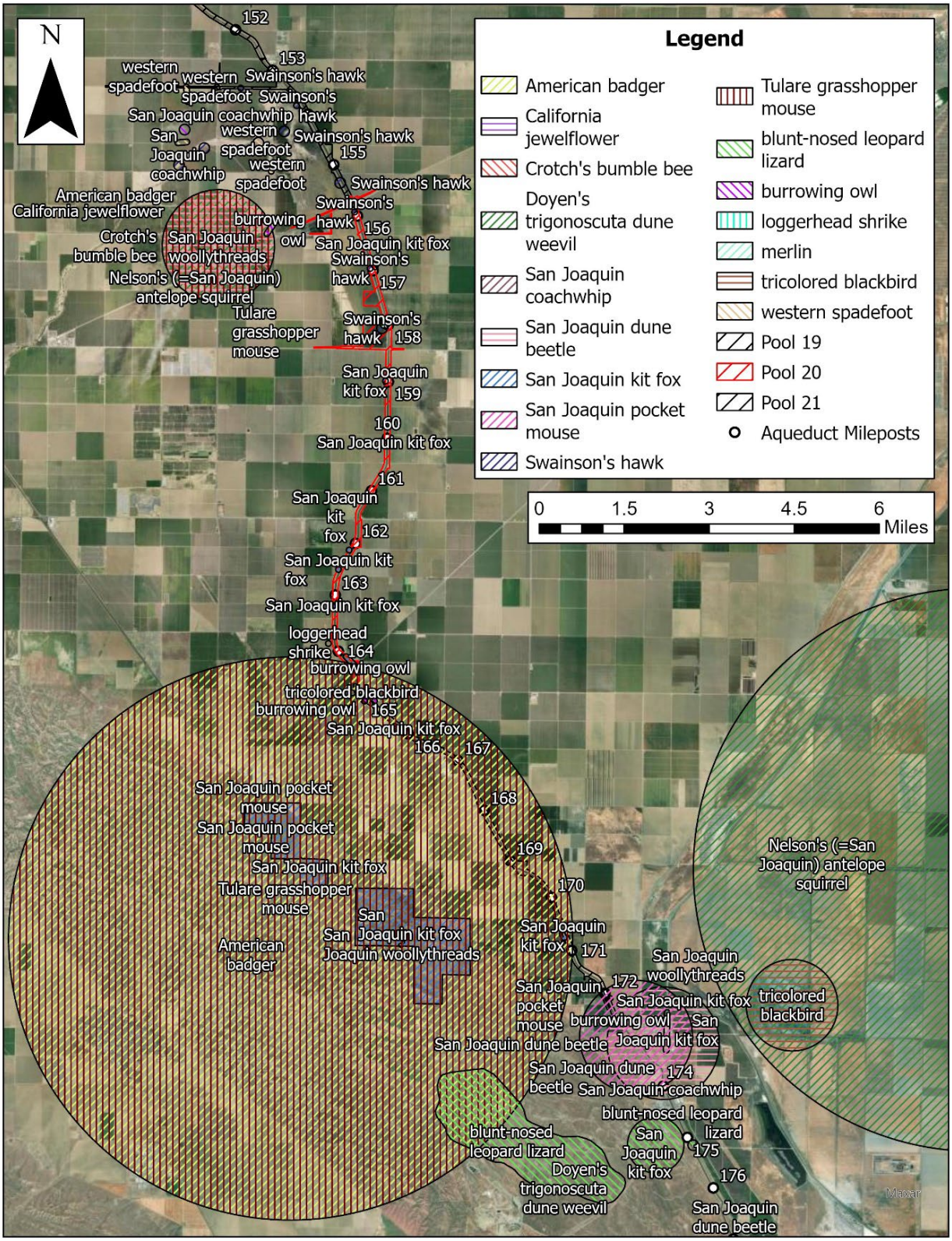


Figure 6 CNDDB Records within 3 Miles of the Project Site

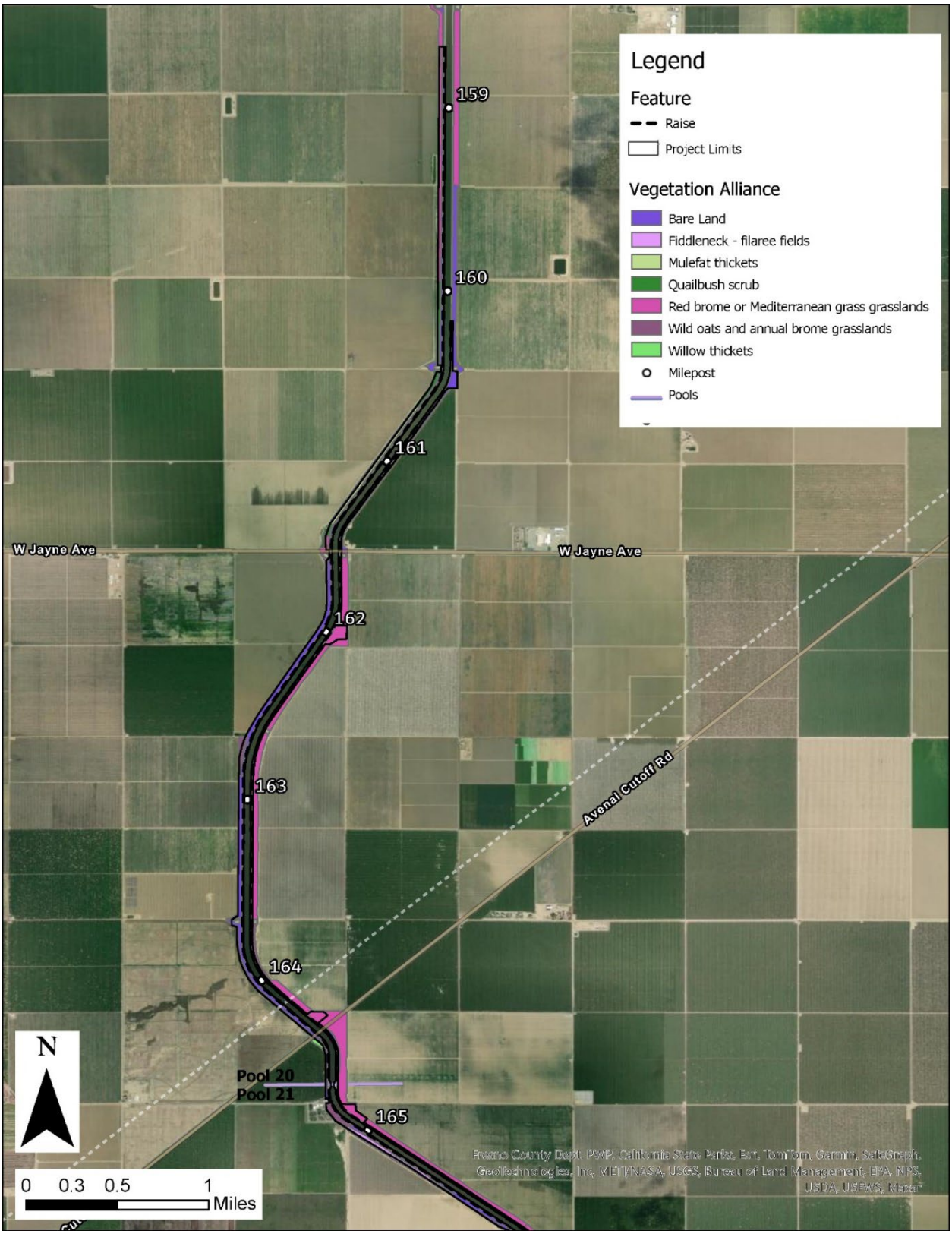


Figure 7 Vegetation Alliance Mapping Pool 20

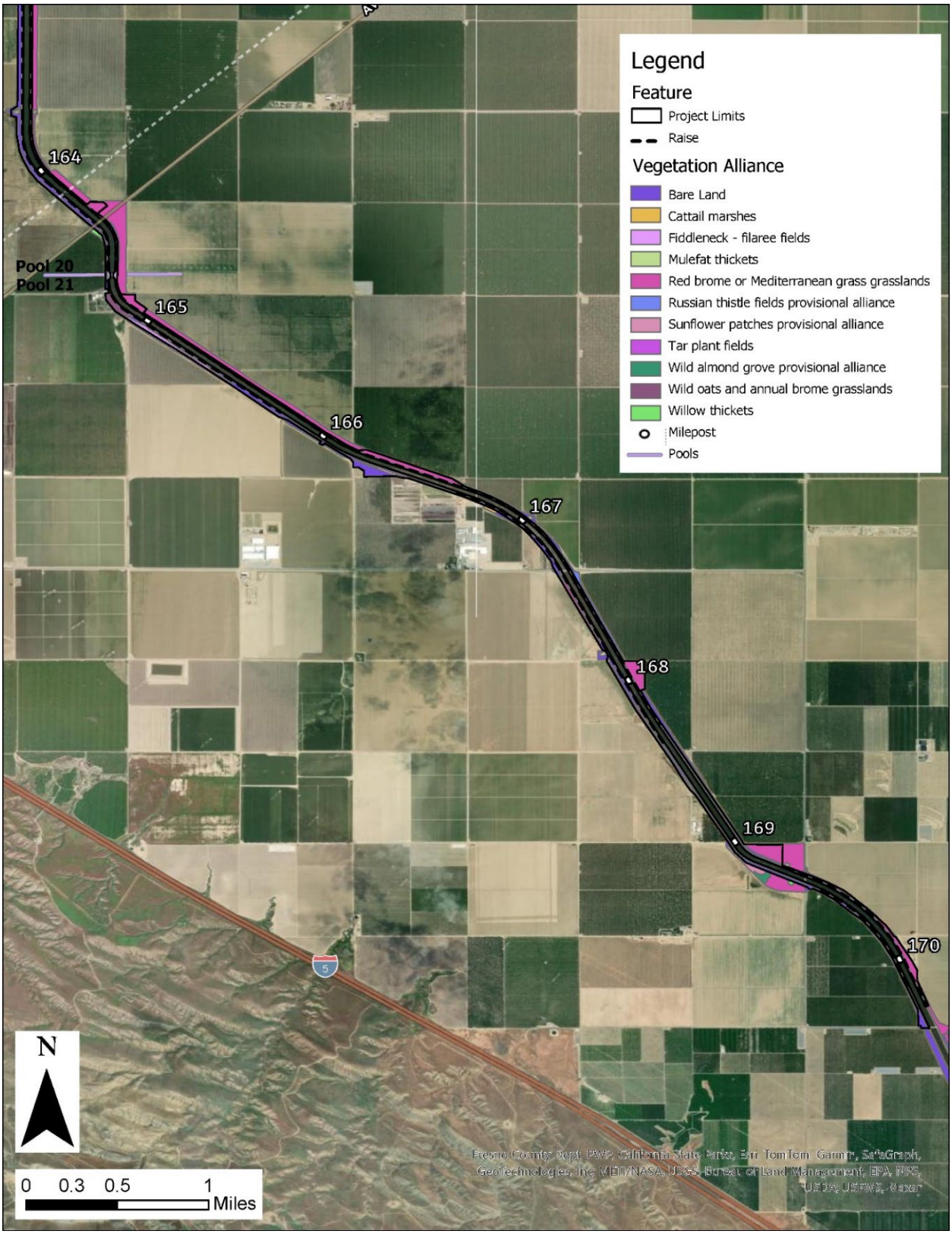


Figure 8 Vegetation Alliance Mapping Pool 21

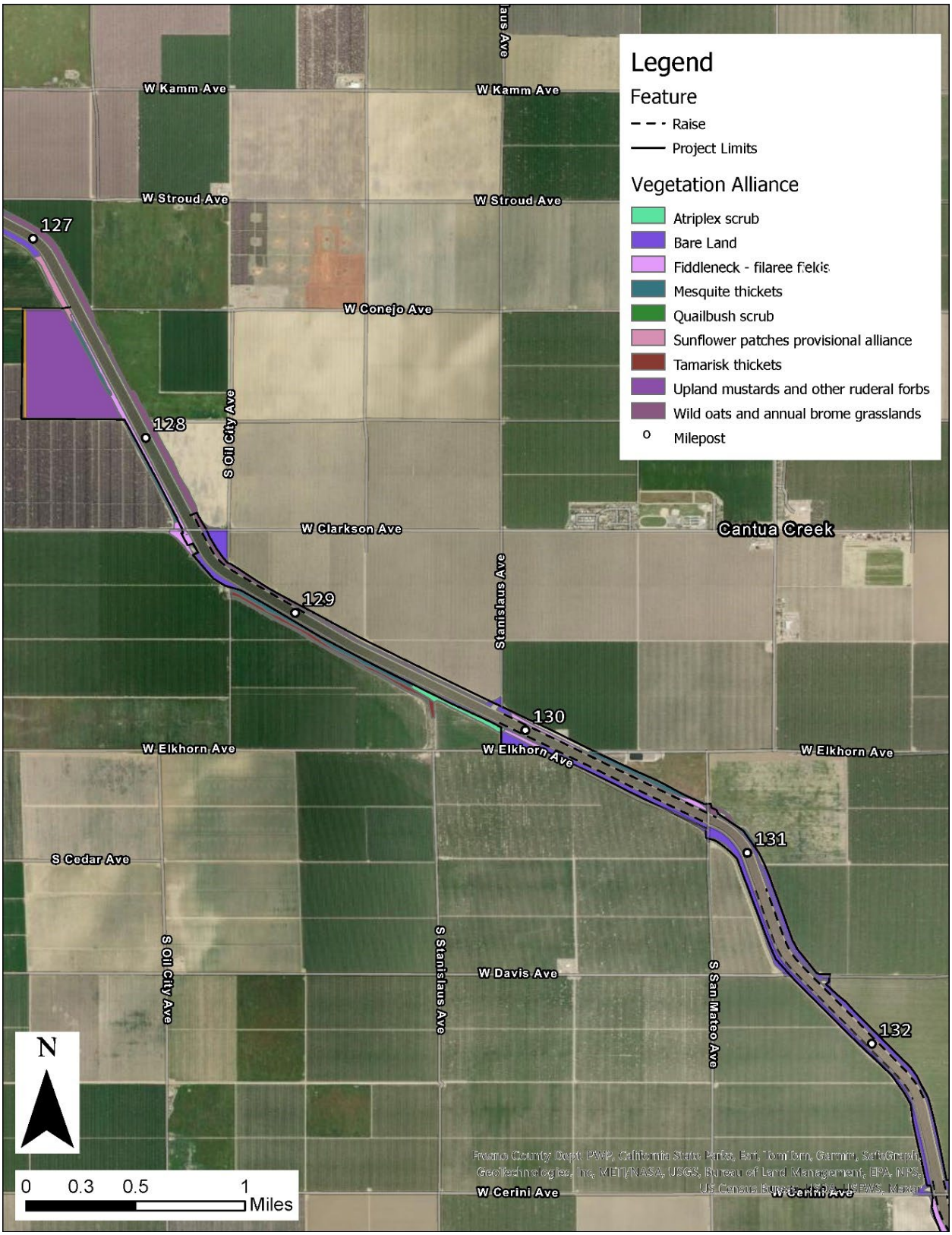


Figure 9 Vegetation Alliance Mapping Pool 17: MP 127.6 Borrow Site

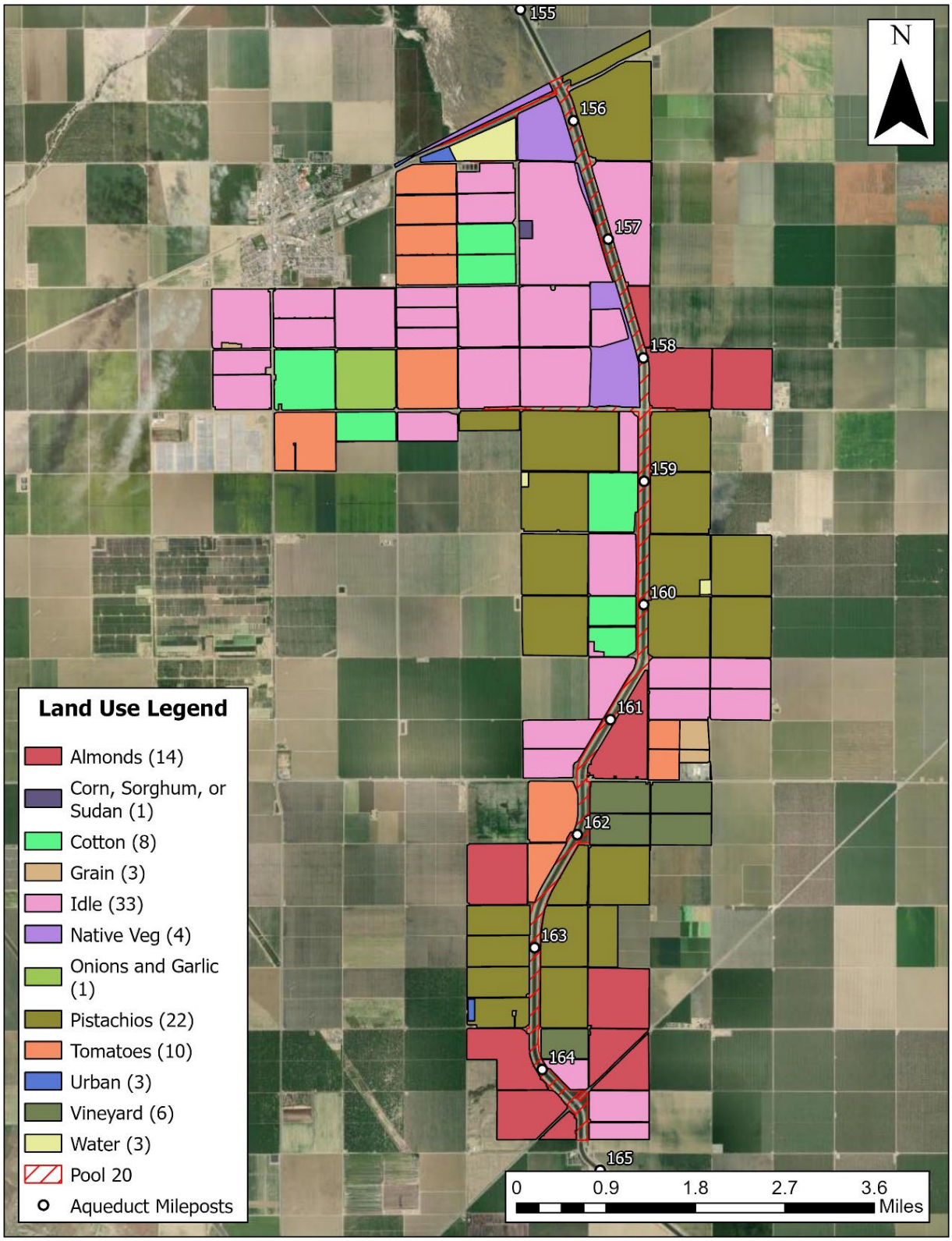


Figure 10 Adjacent Land Use within Pool 20

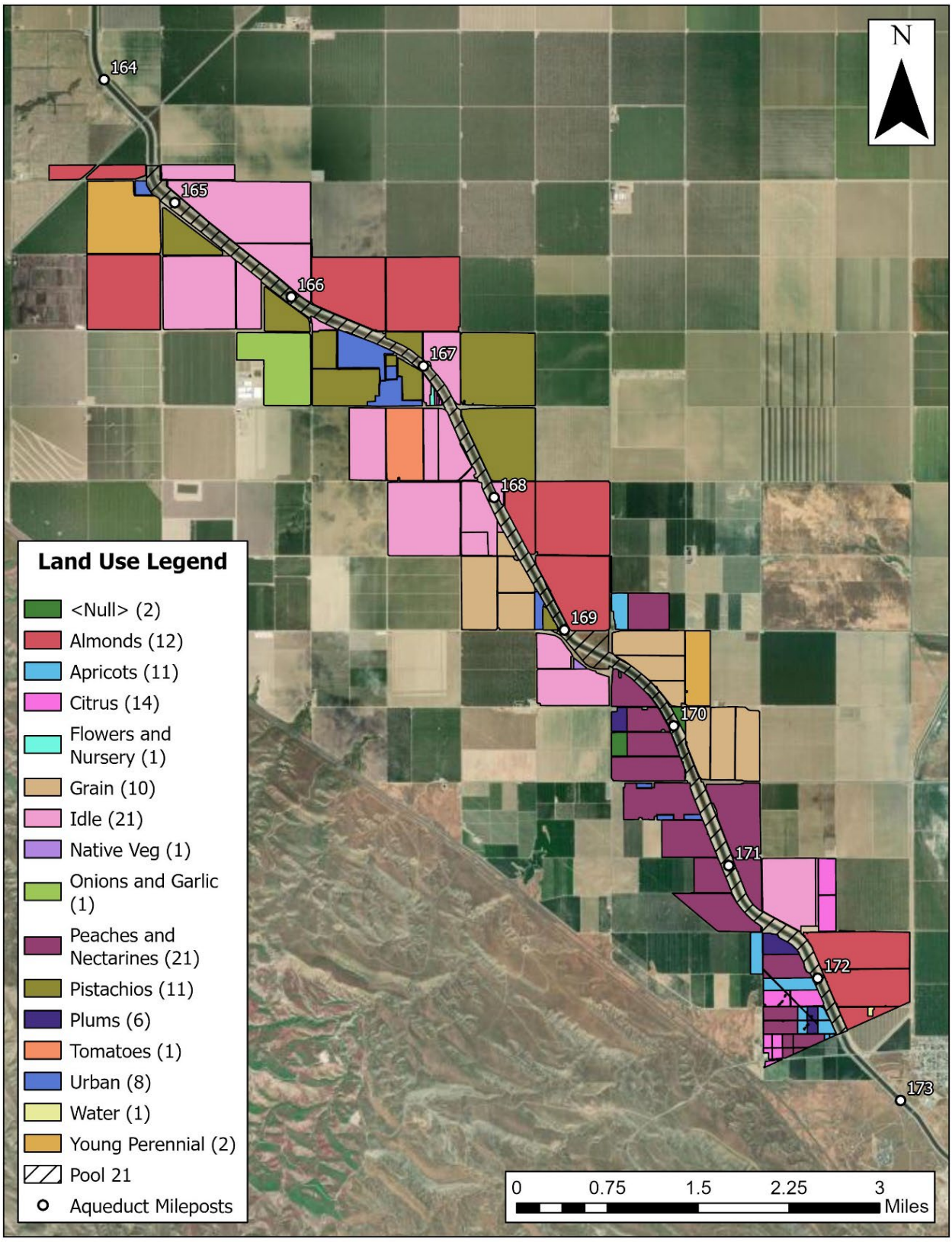


Figure 11 Adjacent Land Use within Pool 21



Figure 12 Species Observations in Pool 20



Figure 13 Species Observations in Pool 21

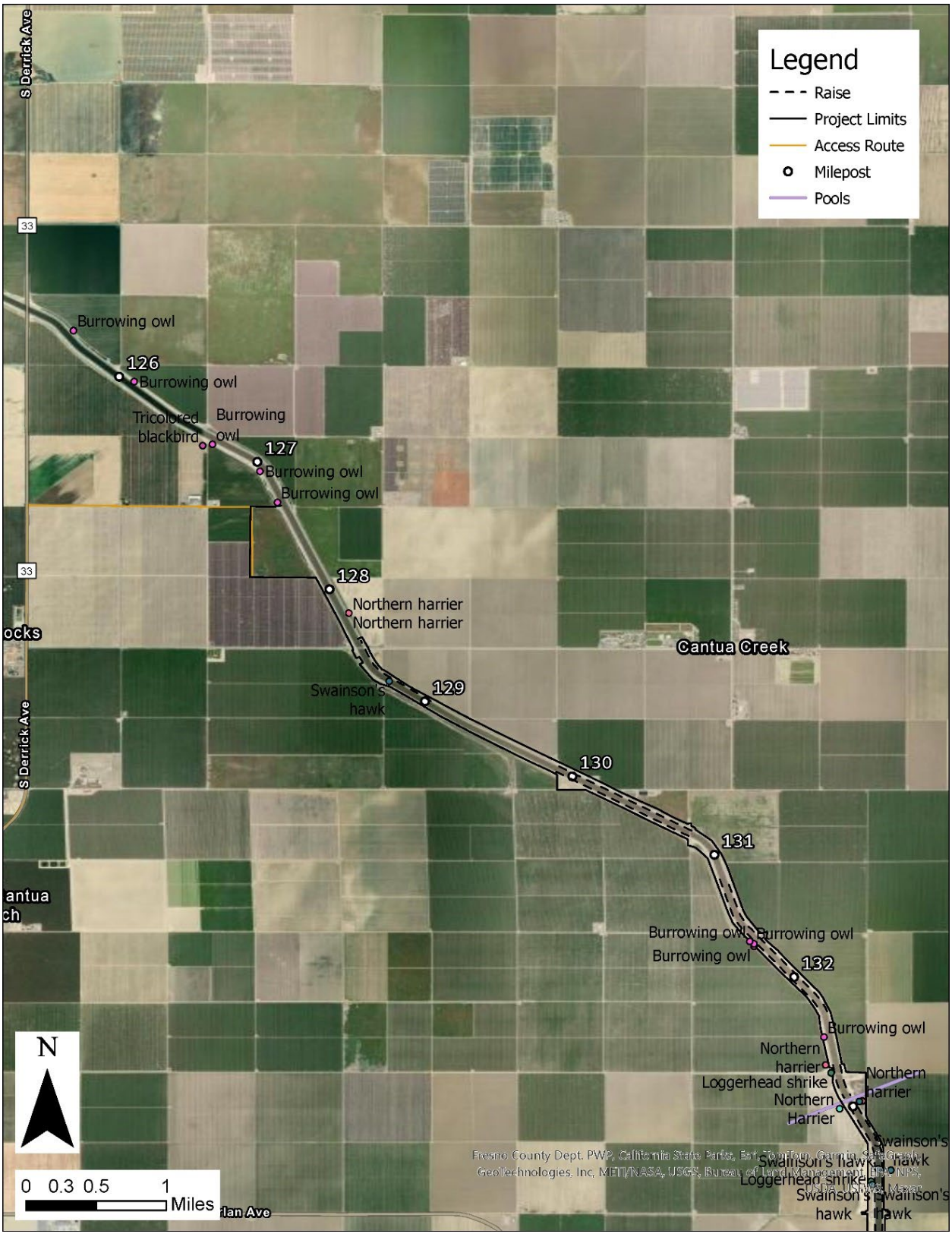


Figure 14 Species Observations in Pool 17: MP 127.6 Borrow Site

Appendix B
Database Search Results

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Fresno and Kings counties, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

NOT FOR CONSULTATION

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

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2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. 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.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Buena Vista Lake Ornate Shrew Sorex ornatus relictus Wherever found **There is final critical habitat for this species. Your location does not overlap the critical habitat.** https://ecos.fws.gov/ecp/species/1610	**Endangered**
Giant Kangaroo Rat Dipodomys ingens Wherever found **No critical habitat has been designated for this species.** https://ecos.fws.gov/ecp/species/6051	**Endangered**
San Joaquin Kit Fox Vulpes macrotis mutica Wherever found **No critical habitat has been designated for this species.** https://ecos.fws.gov/ecp/species/2873	**Endangered**

NOT FOR CONSULTATION

Tipton Kangaroo Rat Dipodomys nitratoides nitratoides — **Endangered**
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/7247

Birds

NAME	STATUS
California Condor Gymnogyps californianus **There is final critical habitat for this species. Your location does not overlap the critical habitat.** https://ecos.fws.gov/ecp/species/8193	**Endangered**

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard Gambelia silus Wherever found **No critical habitat has been designated for this species.** https://ecos.fws.gov/ecp/species/625	**Endangered**
Northwestern Pond Turtle Actinemys marmorata Wherever found **No critical habitat has been designated for this species.** https://ecos.fws.gov/ecp/species/1111	**Proposed Threatened**

Amphibians

NAME	STATUS
California Tiger Salamander Ambystoma californiense **There is final critical habitat for this species. Your location does not overlap the critical habitat.** https://ecos.fws.gov/ecp/species/2076	**Threatened**
Western Spadefoot Spea hammondii Wherever found **No critical habitat has been designated for this species.** https://ecos.fws.gov/ecp/species/5425	**Proposed Threatened**

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found **No critical habitat has been designated for this species.** https://ecos.fws.gov/ecp/species/9743	**Candidate**

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found **There is final critical habitat for this species. Your location does not overlap the critical habitat.** https://ecos.fws.gov/ecp/species/498	**Threatened**

Flowering Plants

NOT FOR CONSULTATION

NAME	STATUS
California Jewelflower Caulanthus californicus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4599	Endangered
San Joaquin Wooly-threads Monolopia (=Lembertia) congdonii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3746	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

NOT FOR CONSULTATION

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Belding's Savannah Sparrow *Passerculus sandwichensis beldingi* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole *Icterus bullockii* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull *Larus californicus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Lawrence's Goldfinch *Spinus lawrencei* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Northern Harrier *Circus hudsonius* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8350	Breeds Apr 1 to Sep 15

NOT FOR CONSTRUCTION

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

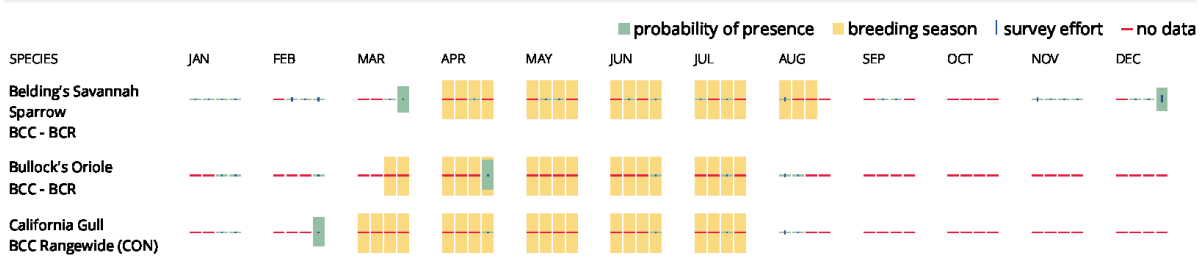
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

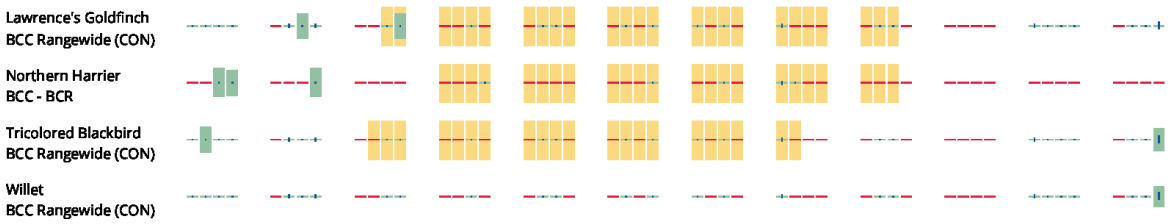
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



NOT FOR CONSULTATION



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

NOT FOR CONSULTATION

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND
- PEM1Cx
- PEM1Fx

FRESHWATER FORESTED/SHRUB WETLAND
- PSSAx

FRESHWATER POND
- PUBFx

NOT FOR CONSULTATION

PUSAx
PUSCx

RIVERINE
R2UBHx
R5UBF

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Rare Plant Inventory Nine Quad Search								
Scientific Name	**Common Name**	**Family**	**Lifeform**	**CRPR**	**GRank**	**SRank**	**CESA**	**FESA**
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	4.2	G4T3	S3	None	None
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	1B.2	G2	S2	None	None
Caulanthus californicus	California jewelflower	Brassicaceae	annual herb	1B.1	G1	S1	CE	FE
Caulanthus lemmonii	Lemmon's jewelflower	Brassicaceae	annual herb	1B.2	G3	S3	None	None
Eremalche parryi ssp. kernensis	Kern mallow	Malvaceae	annual herb	1B.2	G3G4T3	S3	None	FE
Eriastrum hooveri	Hoover's eriastrum	Polemoniaceae	annual herb	4.2	G3	S3	None	FD
Eriogonum gossypinum	cottony buckwheat	Polygonaceae	annual herb	4.2	G3G4	S3S4	None	None
Lasthenia chrysantha	alkali-sink goldfields	Asteraceae	annual herb	1B.1	G2	S2	None	None
Monolopia congdonii	San Joaquin woollythreads	Asteraceae	annual herb	1B.2	G2	S2	None	FE
Trichostema ovatum	San Joaquin bluecurls	Lamiaceae	annual herb	4.2	G3	S3	None	None

Intentionally Blank

APPENDIX C

Cultural Resources Inventory Report (Confidential)

APPENDIX D

Tribal Cultural Consultation

Tribal Consultation Log
CASP SLFD Pools 20 and 21 Liner Raise Project

Date	Tribe	AB52?	From	From Agency	To	To Agency	Type	Subject
7/19/2024	n/a	n/a	Melissa Grijalva-Foreman	DWR	NAHC	NAHC	email with attachments	SLF and Tribal contact list request.
7/19/2024	n/a	n/a	NAHC	NAHC	Melissa Grijalva-Foreman (ESA)	DWR	email with attachments	SLF and Tribal contact list request receipt confirmation.
7/22/2024	n/a	n/a	Cameron Vela (NAHC)	NAHC	Robin Hoffman (ESA)	DWR	email with attachments	SLF negative results and Tribal contact list.
10/10/2024	Amah Mutsun Tribal Band	No	Jesse Dillon	DWR	Valentin Lopez, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Big Sandy Rancheria of Western Mono Indians	No	Jesse Dillon	DWR	Elizabeth Kipp, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Cold Springs Rancheria of Mono Indians	No	Jesse Dillon	DWR	Carol Bill, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Dumna Wo-Wah Tribal Government	No	Jesse Dillon	DWR	Robert Ledger, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Dunlap Band of Mono Indians	No	Jesse Dillon	DWR	Benjamin Charley, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Kitanemuk & Yowlumne Tejon Indians	No	Jesse Dillon	DWR	Delia Dominguez, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Northern Valley Yokut / Ohlone Tribe	No	Jesse Dillon	DWR	Timothy Perez, Tribal Compliance	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Salinan Tribe of Monterey, San Luis Obispo Counties	No	Jesse Dillon	DWR	Patti Dunton, Tribal Administrator	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Santa Rosa Rancheria Tachi Yokut Tribe	Yes	Jesse Dillon	DWR	Leo Sisco, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Sierra Foothill Wuksachi Yokuts Tribe	No	Jesse Dillon	DWR	Marie Dominguez, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Table Mountain Rancheria	No	Jesse Dillon	DWR	Michelle Heredia-Cordova,	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Traditional Choinumni Tribe	No	Jesse Dillon	DWR	David Alvarez, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Tule River Indian Tribe	No	Jesse Dillon	DWR	Neil Peyron, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Wuksachi Indian Tribe/Eshom Valley Band	No	Jesse Dillon	DWR	Kenneth Woodrow, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/10/2024	Xolon-Salinan Tribe	No	Jesse Dillon	DWR	Karen White, Chairperson	Tribe	certified mail	Notification and invitation to consult.
10/11/2024	Amah Mutsun Tribal Band	No	Jesse Dillon	DWR	Valentin Lopez, Chairperson	Tribe	email with formal request	Notification and invitation to consult.
10/11/2024	Big Sandy Rancheria of Western Mono Indians	No	Jesse Dillon	DWR	Elizabeth Kipp, Chairperson	Tribe	email with formal request	Notification and invitation to consult.
10/11/2024	Cold Springs Rancheria of Mono Indians	No	Jesse Dillon	DWR	Carol Bill, Chairperson	Tribe	email with formal request	Notification and invitation to consult.
10/11/2024	Dumna Wo-Wah Tribal Government	No	Jesse Dillon	DWR	Robert Ledger, Chairperson	Tribe	email with formal request	Notification and invitation to consult.
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10/11/2024	Kitanemuk & Yowlumne Tejon Indians	No	Jesse Dillon	DWR	Delia Dominguez, Chairperson	Tribe	email with formal request	Notification and invitation to consult.
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10/11/2024	Santa Rosa Rancheria Tachi Yokut Tribe	Yes	Jesse Dillon	DWR	Leo Sisco, Chairperson	Tribe	email with formal request	Notification and invitation to consult.
10/11/2024	Table Mountain Rancheria	No	Jesse Dillon	DWR	Michelle Heredia-Cordova,	Tribe	email with formal request	Notification and invitation to consult.
10/11/2024	Traditional Choinumni Tribe	No	Jesse Dillon	DWR	David Alvarez, Chairperson	Tribe	email with formal request	Notification and invitation to consult.
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10/11/2024	Wuksachi Indian Tribe/Eshom Valley Band	No	Jesse Dillon	DWR	Kenneth Woodrow, Chairperson	Tribe	email with formal request	Notification and invitation to consult.
10/11/2024	Xolon-Salinan Tribe	No	Jesse Dillon	DWR	Karen White, Chairperson	Tribe	email with formal request	Notification and invitation to consult.
10/14/2024	Xolon-Salinan Tribe	No	Karen White, Chairperson	Xolon-Salinan Tribe	Jesse Dillon	DWR	email	Response to consultation request and informed DWR that the Tribe does not wish to consult.
10/15/2024	Xolon-Salinan Tribe	No	Marea Bell	DWR	Karen White, Chairperson	Tribe	email	Acknowledged receipt of previous day's email and offering to consult at any time if the Tribe wants further information about CASP.
10/16/2024	Traditional Choinumni Tribe	No	David Alvarez, Chair	Traditional Choinumni Tribe	Marea Bell	DWR	phone call	Chairperson Alvarez informed DWR that the liner raise projects are outside of the traditional Tribal area, but would like to be kept in the loop of the larger program happenings. Informed of new email: dave@davealvarez.com
11/06/2024	Tule River Indian Tribe	No	Jesse Dillon	DWR	Charmaine McDarment, Chairperson	Tribe	certified mail	Notification and invitation to consult.
11/13/2024	Santa Rosa Rancheria Tachi Yokut Tribe	Yes	Jesse Dillon	DWR	Leo Sisco, Chairperson	Tribe	email	Notification and invitation to consult; reply on top of email from Oct 11, 2024.
11/13/2024	Amah Mutsun Tribal Band	No	Jesse Dillon	DWR	Valentin Lopez, Chairperson	Tribe	email	Notification and invitation to consult; reply on top of email from Oct 11, 2024.

Robin Hoffman

From: NAHC@NAHC <NAHC@nahc.ca.gov>
Sent: Friday, July 19, 2024 4:22 PM
To: Melissa Grijalva-Foreman
Cc: Robin Hoffman; Vela, Cameron@NAHC
Subject: RE: SLF Search and Native American Contacts: D202101064.03 CASP SJFD Pools 20 and 21 Liner Raise Project
Attachments: D202101064.03_CASP_Pool_20_21_NAHC_Request_20240719.pdf; Fig 1 Project Vicinity (Pools 20 21) Tribal.pdf; Fig 2 Project Location (Pool 20 21) Tribal.pdf

Hello,

Thank you for your message. We're in receipt of your project. Our turn-around time is approximately 4 weeks, and we don't anticipate responding sooner than that timeframe. Our response will be delivered by email. Please let us know if you have any questions.

Kind Regards,

Native American Heritage Commission
1550 Harbor Blvd Suite 100
West Sacramento, CA 95691
Phone: 916-373-3710

From: Melissa Grijalva-Foreman <MGrijalva-Foreman@esassoc.com>
Sent: Friday, July 19, 2024 3:59 PM
To: NAHC@NAHC <NAHC@nahc.ca.gov>
Cc: Robin Hoffman <rhoffman@esassoc.com>
Subject: SLF Search and Native American Contacts: D202101064.03 CASP SJFD Pools 20 and 21 Liner Raise Project

Good afternoon,

I would like to request a Sacred Lands File search and list of Native American contacts for the *D202101064.03 CASP SJFD Pools 20 and 21 Liner Raise Project* in *Fresno and Kings Counties*. The formal request form, project location, and vicinity maps are attached. Please let me know if you have any questions.

Thank you,

Melissa Grijalva-Foreman, MA
Cultural Resource Specialist

ESA | **Environmental Science Associates**
Oakland, CA

1-925-408-6032 **cell**
1-510-463-6766 **direct**
MGrijalva-Foreman@esassoc.com |

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Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: D202101064.03 - CASP SLFD Pools 20 & 21 Liner Raise Project

County: Fresno and Kings Counties

USGS Quadrangle Name: Huron, La Cima, and Kettleman City

Township: 22S **Range:** 18E **Section(s):** 2, 3
Township: 20S **Range:** 18E **Section(s):** 19, 30, 31
Township: 21S **Range:** 18E **Section(s):** 6, 7, 18, 19, 20, 21, 27, 28, 34

Company/Firm/Agency: Environmental Science Associates

Street Address: 775 Baywood Dr Suite 100

City: Petaluma **Zip:** 94954-6531

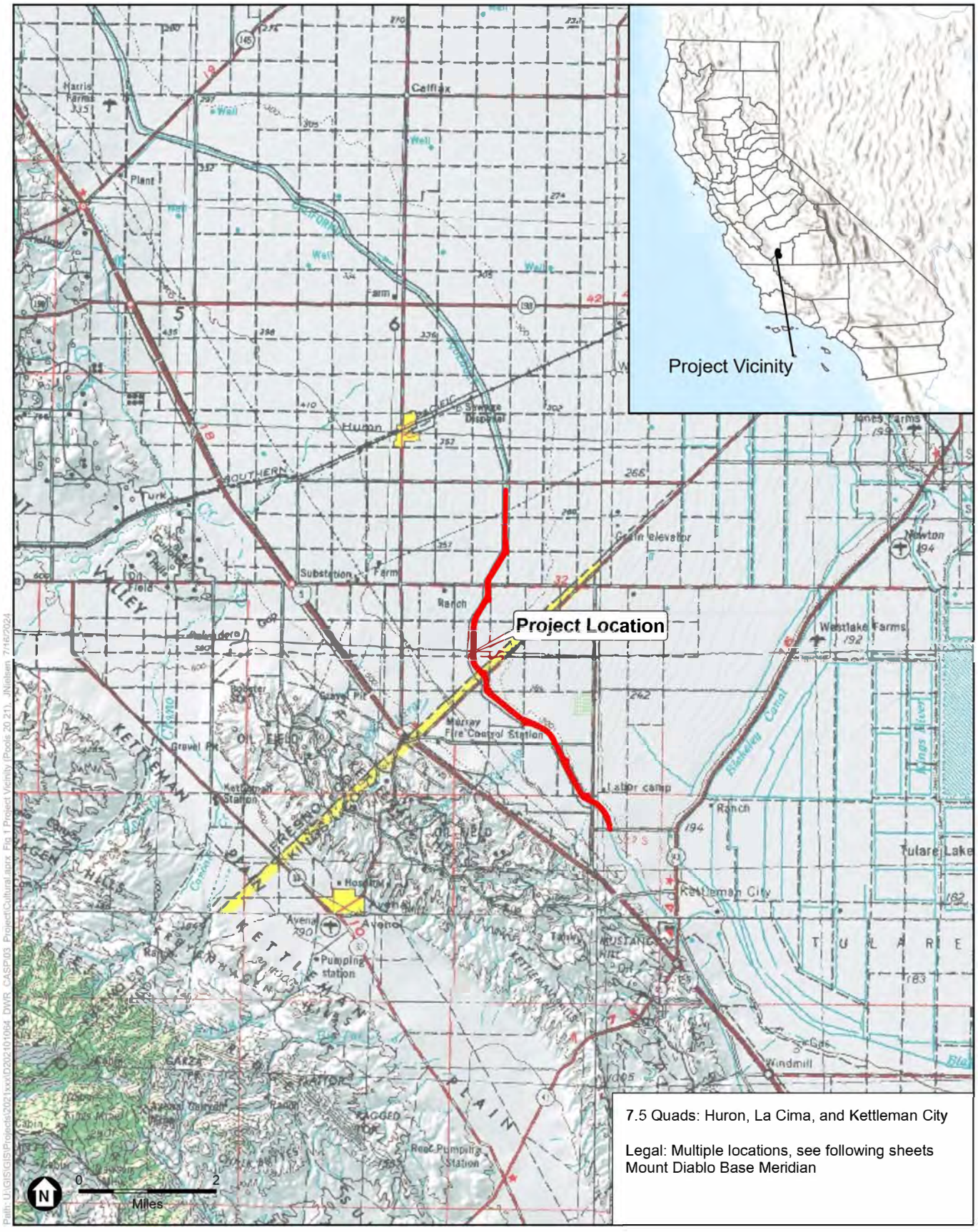
Phone: 707-494-3349

Fax:

Email: rhoffman@esassoc.com

Project Description:

Per the CASP Executive Charter, to address subsidence along the California Aqueduct corrective actions are needed. While long-term corrective planning is underway, near-term "interim actions" are needed to continue existing operations through the San Luis Field Division. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.



SOURCE: ESRI; DWR, 2024.

CASP SLFD Pools 20 and 21 Liner Raise Project

Figure 1
Project Vicinity

ESA



SOURCE: USGS; DWR, 2024.

CASP SLFD Pools 20 and 21 Liner Raise Project

Figure 2
Project Location

ESA

Robin Hoffman

From: Vela, Cameron@NAHC <Cameron.Vela@nahc.ca.gov>
Sent: Monday, July 22, 2024 12:25 PM
To: Robin Hoffman
Subject: D202101064.03 - CASP SLFD Pools 20 & 21 Liner Raise Project
Attachments: SLF No D202101064.03 - CASP SLFD Pools 20 & 21 Liner Raise Project 7.22.2024.pdf; D202101064.03 - CASP SLFD Pools 20 & 21 Liner Raise Project List 7.22.2024.xlsx

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Good Afternoon,

Attached is the response to the project referenced above. If you have any additional questions, please feel free to contact our office email at nahc@nahc.ca.gov.

Thank You,

Cameron Vela
Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Cameron.vela@nahc.ca.gov
Direct Line: (916) 573-0168
Office: (916) 373-3710

NATIVE AMERICAN HERITAGE COMMISSION

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NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710

July 22, 2024

Robin Hoffman
ESA

Via Email to: rhoffman@esassoc.com

Re: D202101064.03 - CASP SLFD Pools 20 & 21 Liner Raise Project, Fresno and Kings County

Dear Mr. Hoffman:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Kings, Fresno Counties
7/22/2024

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Fresno	Kitanemuk & Yowlumne Tejon Indians	N	Delia Dominguez, Chairperson	115 Radio Street Bakersfield, CA, 93305	(626) 339-6785		2deedominguez@gmail.com	Kitanemuk Southern Valley Yokut	Fresno,Kern,Kings,Los Angeles,Madera,Monterey,San Benito,San Luis Obispo,Tulare	
	Salinan Tribe of Monterey, San Luis Obispo Counties	N	Robert Piatti, Cultural Protection Lead	8270 Morro Rd. Atascadero, CA, 93422	(805) 464-2650		quiggyllynn@gmail.com	Salinan	Fresno,Kern,Kings,Monterey,San Benito,San Luis Obispo	8/4/2023
	Salinan Tribe of Monterey, San Luis Obispo Counties	N	Patti Dunton, Tribal Administrator	8270 Morro Rd. Atascadero, CA, 93422	(805) 464-2650		info@salinantribe.com	Salinan	Fresno,Kern,Kings,Monterey,San Benito,San Luis Obispo	6/6/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Samantha McCarty, Cultural Specialist II	P.O. Box 8 Lemoore, CA, 93245	(559) 633-3440		smccarty@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Shana Powers, THPO	P.O. Box 8 Lemoore, CA, 93245	(559) 423-3900		spowers@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Nichole Escalon, Cultural Specialist I	P.O. Box 8 Lemoore, CA, 93245	(559) 924-1278		nescalone@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Table Mountain Rancheria	F	Bob Pennell, Cultural Resource Director	P.O. Box 410 Friant, CA, 93626	(559) 325-0351	(559) 325-0394	rpennell@tmr.org	Yokut	Fresno,Kern,Kings,Madera,Monterey,San Benito,San Luis Obispo,Tulare	
	Table Mountain Rancheria	F	Michelle Heredia-Cordova, Chairperson	P.O. Box 410 Friant, CA, 93626	(559) 822-2587	(559) 822-2693	mhcordova@tmr.org	Yokut	Fresno,Kern,Kings,Madera,Monterey,San Benito,San Luis Obispo,Tulare	12/21/2023
	Tule River Indian Tribe	F	Joey Garfield, Tribal Archaeologist	P. O. Box 589 Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	joey.garfield@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	7/22/2016
	Tule River Indian Tribe	F	Kerri Vera, Environmental Department	P. O. Box 589 Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	kerri.vera@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	7/22/2016
	Tule River Indian Tribe	F	Neil Peyron, Chairperson	P.O. Box 589 Porterville, CA, 93258	(559) 781-4271	(559) 781-4610	neil.peyron@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	
	Wuksachi Indian Tribe/Eshom Valley Band	N	Kenneth Woodrow, Chairperson	1179 Rock Haven Ct. Salinas, CA, 93906	(831) 443-9702		kwood8934@aol.com	Foothill Yokut Mono	Alameda,Calaveras,Contra Costa,Fresno,Inyo,Kings,Madera,Marin,Mariposa,Merced,Mono,Monterey,San Benito,San	6/19/2023
	Xolon-Salinan Tribe	N	Karen White, Chairperson	P.O. Box 7045 Spreckels, CA, 93962	(831) 455-1012		xolon.salinan.heritage@gmail.com	Salinan	Fresno,Kern,Kings,Monterey,San Benito,San Luis Obispo,Santa Barbara	4/3/2023
	Xolon-Salinan Tribe	N	Penny Hurt, Cultural Preservation Administrator	P.O. Box 7045 Spreckels, CA, 93962	(805) 453-3675		phurt6700@gmail.com	Salinan	Fresno,Kern,Kings,Monterey,San Benito,San Luis Obispo,Santa Barbara	4/3/2023
Kings	Kitanemuk & Yowlumne Tejon Indians	N	Delia Dominguez, Chairperson	115 Radio Street Bakersfield, CA, 93305	(626) 339-6785		2deedominguez@gmail.com	Kitanemuk Southern Valley Yokut	Fresno,Kern,Kings,Los Angeles,Madera,Monterey,San Benito,San Luis Obispo,Tulare	

Native American Heritage Commission
Native American Contact List
Kings, Fresno Counties
7/22/2024

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	Salinan Tribe of Monterey, San Luis Obispo Counties	N	Patti Dunton, Tribal Administrator	8270 Morro Rd. Atascadero, CA, 93422	(805) 464-2650		info@salinantribe.com	Salinan	Fresno,Kern,Kings,Monterey,San Benito,San Luis Obispo	6/6/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Nichole Escalon, Cultural Specialist I	P.O. Box 8 Lemoore, CA, 93245	(559) 924-1278		nescalone@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
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	Santa Rosa Rancheria Tachi Yokut Tribe	F	Shana Powers, THPO	P.O. Box 8 Lemoore, CA, 93245	(559) 423-3900		spowers@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Table Mountain Rancheria	F	Bob Pennell, Cultural Resource Director	P.O. Box 410 Friant, CA, 93626	(559) 325-0351	(559) 325-0394	rpennell@tmr.org	Yokut	Fresno,Kern,Kings,Madera,Monterey,San Benito,San Luis Obispo,Tulare	
	Table Mountain Rancheria	F	Michelle Heredia-Cordova, Chairperson	P.O. Box 410 Friant, CA, 93626	(559) 822-2587	(559) 822-2693	mhcordova@tmr.org	Yokut	Fresno,Kern,Kings,Madera,Monterey,San Benito,San Luis Obispo,Tulare	12/21/2023
	Tule River Indian Tribe	F	Neil Peyron, Chairperson	P.O. Box 589 Porterville, CA, 93258	(559) 781-4271	(559) 781-4610	neil.peyron@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	
	Tule River Indian Tribe	F	Joey Garfield, Tribal Archaeologist	P. O. Box 589 Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	joey.garfield@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	7/22/2016
	Tule River Indian Tribe	F	Kerri Vera, Environmental Department	P. O. Box 589 Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	kerri.vera@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	7/22/2016
	Wuksachi Indian Tribe/Eshom Valley Band	N	Kenneth Woodrow, Chairperson	1179 Rock Haven Ct. Salinas, CA, 93906	(831) 443-9702		kwood8934@aol.com	Foothill Yokut Mono	Alameda,Calaveras,Contra Costa,Fresno,Inyo,Kings,Madera,Marin,Mariposa,Merced,Mono,Monterey,San Benito,San	6/19/2023
	Xolon-Salinan Tribe	N	Karen White, Chairperson	P.O. Box 7045 Spreckels, CA, 93962	(831) 455-1012		xolon.salinan.heritage@gmail.com	Salinan	Fresno,Kern,Kings,Monterey,San Benito,San Luis Obispo,Santa Barbara	4/3/2023
	Xolon-Salinan Tribe	N	Penny Hurt, Cultural Preservation Administrator	P.O. Box 7045 Spreckels, CA, 93962	(805) 453-3675		phurt6700@gmail.com	Salinan	Fresno,Kern,Kings,Monterey,San Benito,San Luis Obispo,Santa Barbara	4/3/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed D202101064.03 - CASP SLFD Pools 20 & 21 Liner Raise Project, Kings, Fresno Counties.

Record: PROJ-2024-003679
Report Type: List of Tribes
Counties: Fresno,Kings
NAHC Group: All

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024 Sent via certified mail

The Honorable Valentin Lopez
Chairperson
Amah Mutsun Tribal Band
P.O. Box 5272
Galt, CA, 95632
vjltestingcenter@aol.com

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson Lopez,

I hope this letter finds you well. I am writing on behalf of the Department of Water Resources (DWR), Division of Engineering (DOE). DOE works on design and construction projects through the State to maintain various elements of the State Water Project.

The Environmental Coordination Section (ECS) in DOE supports various aspects of environmental compliance of our division's work, including compliance with AB 52, and the DWR *Tribal Engagement Policy*. Currently, DOE's environmental team is supporting multiple projects of which the Amah Mutsun Tribal Band (Tribe) has been identified as possible partner, consulting Tribe, or otherwise interested. For ease of review, and in furtherance of DWR goals of collaboration and transparency, we have consolidated consultation letters different projects into one envelope. My intention is to acknowledge the multiple consultation letters and provide consolidated communication where possible.

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Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

For ease of reference, helpful contacts are in the list below.

Marea Bell	*Main Point of Contact* Enviro. Planning Lead: • Pools 17&18 • Pools 20&21	Marea.Bell@water.ca.gov (916) 882-2945
Sarah Cannon	ECS Manager	Sarah.Cannon@water.ca.gov (916) 882-2829
Jesse Dillon	CASP Program Manager	Jesse.Dillon@water.ca.gov (916) 699-8403
Anecita Augustinez	DWR Office of Tribal Affairs	Anecita.Augustinez@water.ca.gov (916) 216-8637

Should you have any questions, comments, or concerns at any point, please do not hesitate to contact me directly, reach out to the designated project contact(s), or contact the DWR Tribal Office. We remain committed to partnering with you in a clear and cooperative manner, to properly account for and manage resources important to the Tribe, consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

Respectfully,

Sarah Cannon

Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024

Sent via certified mail and email

The Honorable Valentin Lopez
Chairperson
Amah Mutsun Tribal Band
P.O. Box 5272
Galt, CA, 95632
vjltestingcenter@aol.com

Subject: Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

Dear Chairperson Lopez,

This letter serves as a formal invitation to the Amah Mutsun Tribal Band (Tribe) to consult with the California Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, as depicted in the *Huron*, *California*, *Kettleman City*, *California*, and *La Cima*, *California* U.S. Geological Survey 7.5-minute topographic maps (see Attachments 1 and 2). DWR and the U.S. Bureau of Reclamation (Reclamation) are proposing to implement the Project jointly. DWR is the lead agency under the California Environmental Quality Act (CEQA) and is committed to working with the Tribe under DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy* to properly account for resources important to the Tribe. To-date, DWR has not received an AB 52 request from the Tribe.

If the Tribe would like to consult under Assembly Bill (AB) 52, this is also notice DWR has not received an AB 52 request for notification from the Tribe and is an opportunity to ensure current and future engagement to consult under AB 52.

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The San Luis Canal was constructed as a series of interconnected pools that are operated in coordination to convey water primarily by gravity from one pool to the next through check structures and pumping plants. The San Luis Canal traverses portions of

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This project is part of a larger CASP program, comprised of short-term (or interim actions) and long-term corrective actions aimed to repair the San Luis Canal and the California Aqueduct. Additional information about the program and projects can be found here: https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence

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It should be noted that because the Project is being jointly proposed by DWR and Reclamation, it is subject to federal environmental regulations, including the National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966 (NHPA). Reclamation is the lead federal agency for NEPA/NHPA purposes.

Conclusion

DWR is committed to working collaboratively with the Tribe to properly account for and manage resources important to the Tribe consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*. We welcome any recommendations regarding appropriate management or treatment of resources, including Tribal cultural resources, that occur within or near the Project Area. This notification does not limit the Tribe's ability to submit information regarding the identification or significance of Tribal cultural resources, the significance of the Project's

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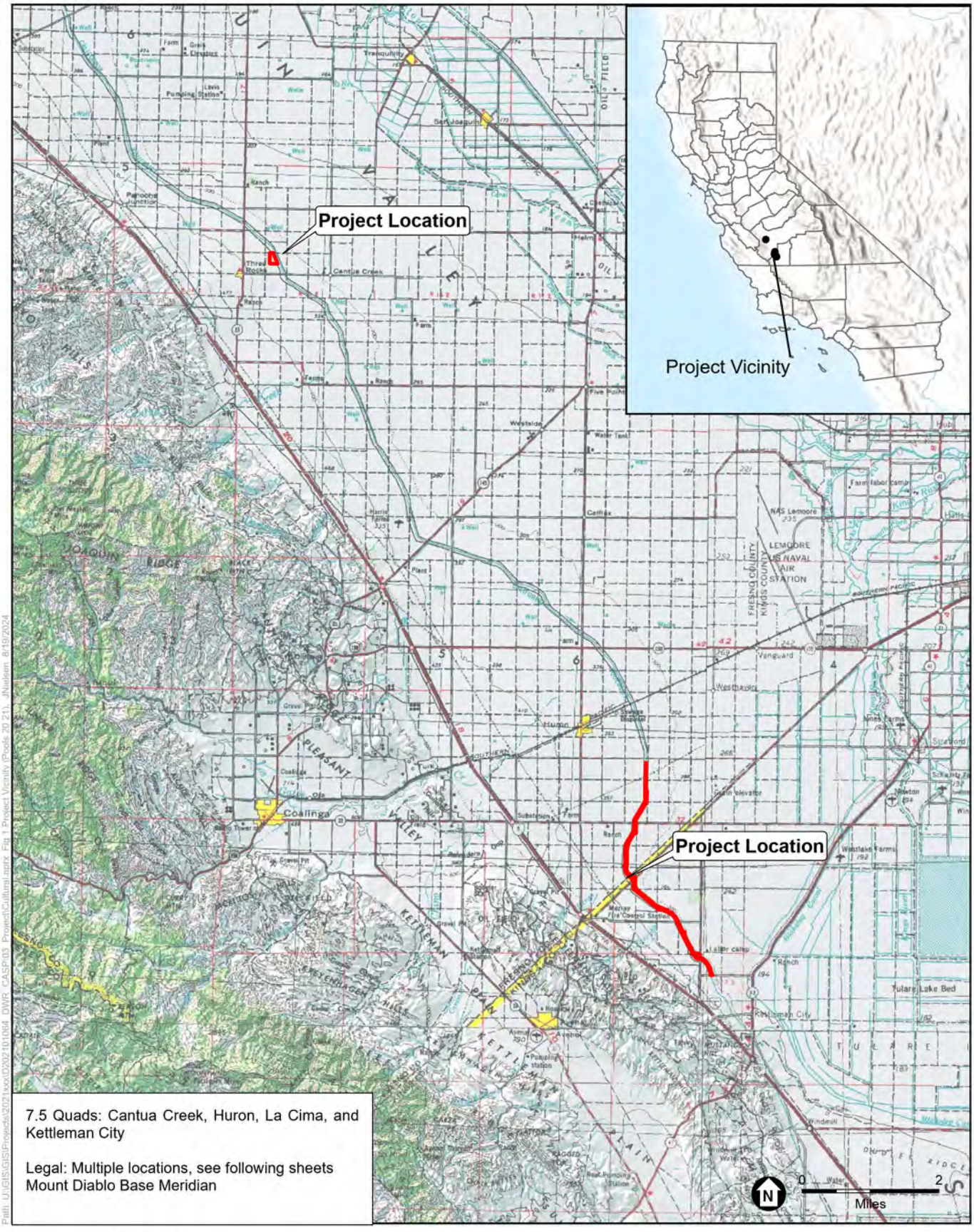
Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Ed Ketchum, Vice-Chairperson, Amah Mutsun Tribal Band
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
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Attachment 1. Project Vicinity Map
Attachment 2. Project Location Map

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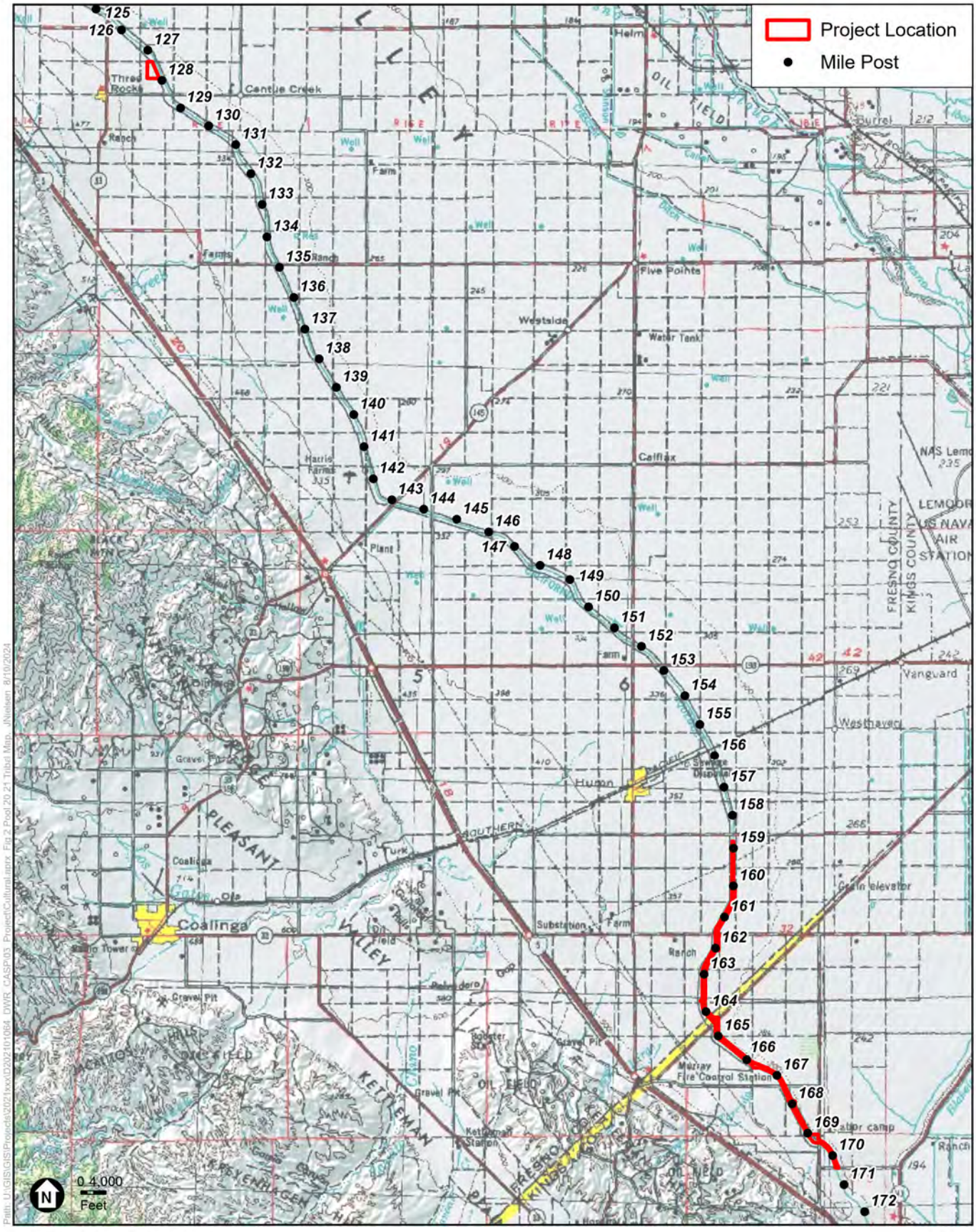
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024 Sent via certified mail

The Honorable Elizabeth Kipp
Chairperson
Big Sandy Rancheria of Western Mono Indians
P.O. Box 337
Auberry, CA 93602
lkipp@bsrnation.com

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson Kipp,

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Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

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715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024 Sent via certified mail and email

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Chairperson
Big Sandy Rancheria of Western Mono Indians
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Auberry, CA 93602
lkipp@bsrnation.com

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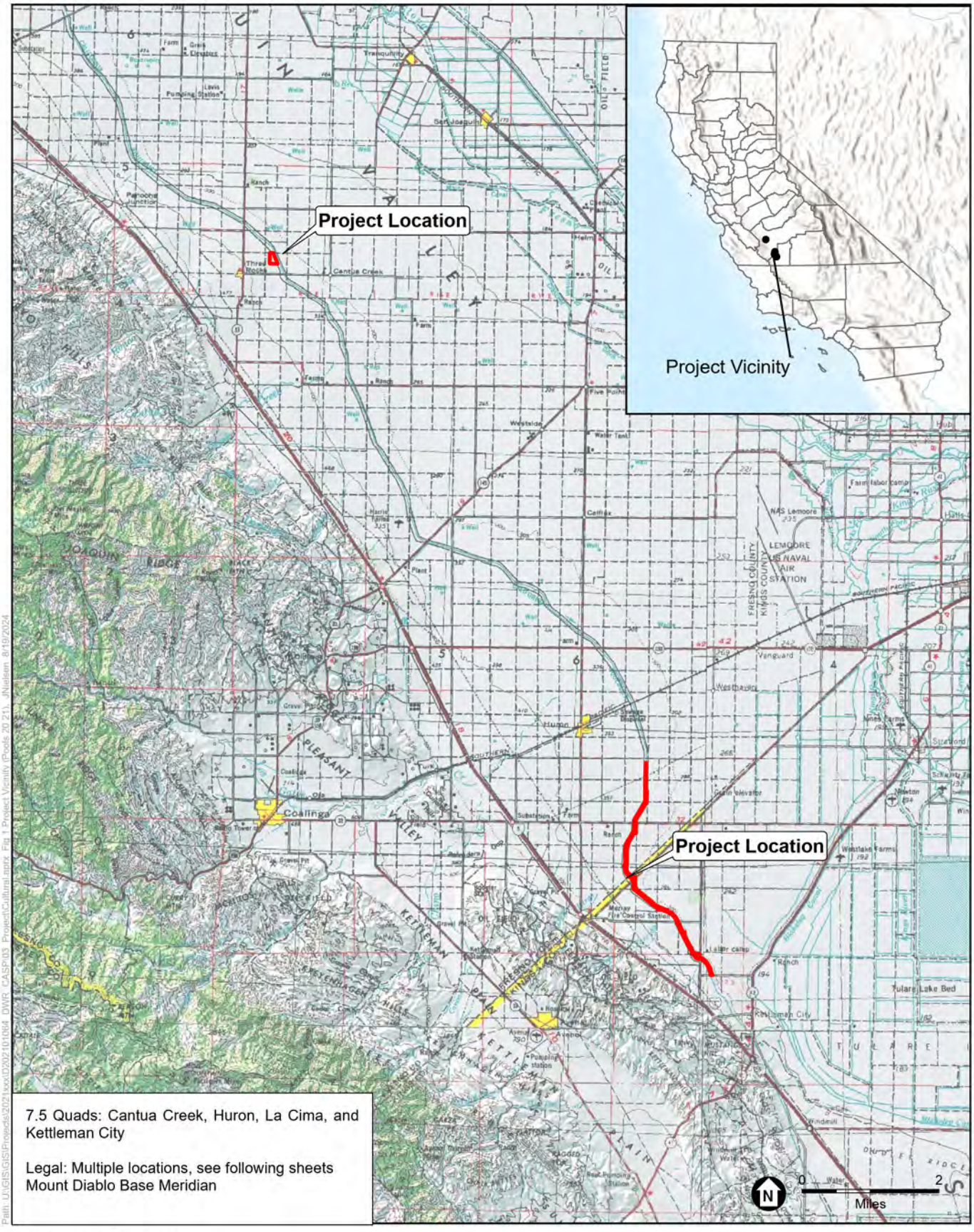
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CASP Program Manager, DWR – State Water Project: Division of Engineering

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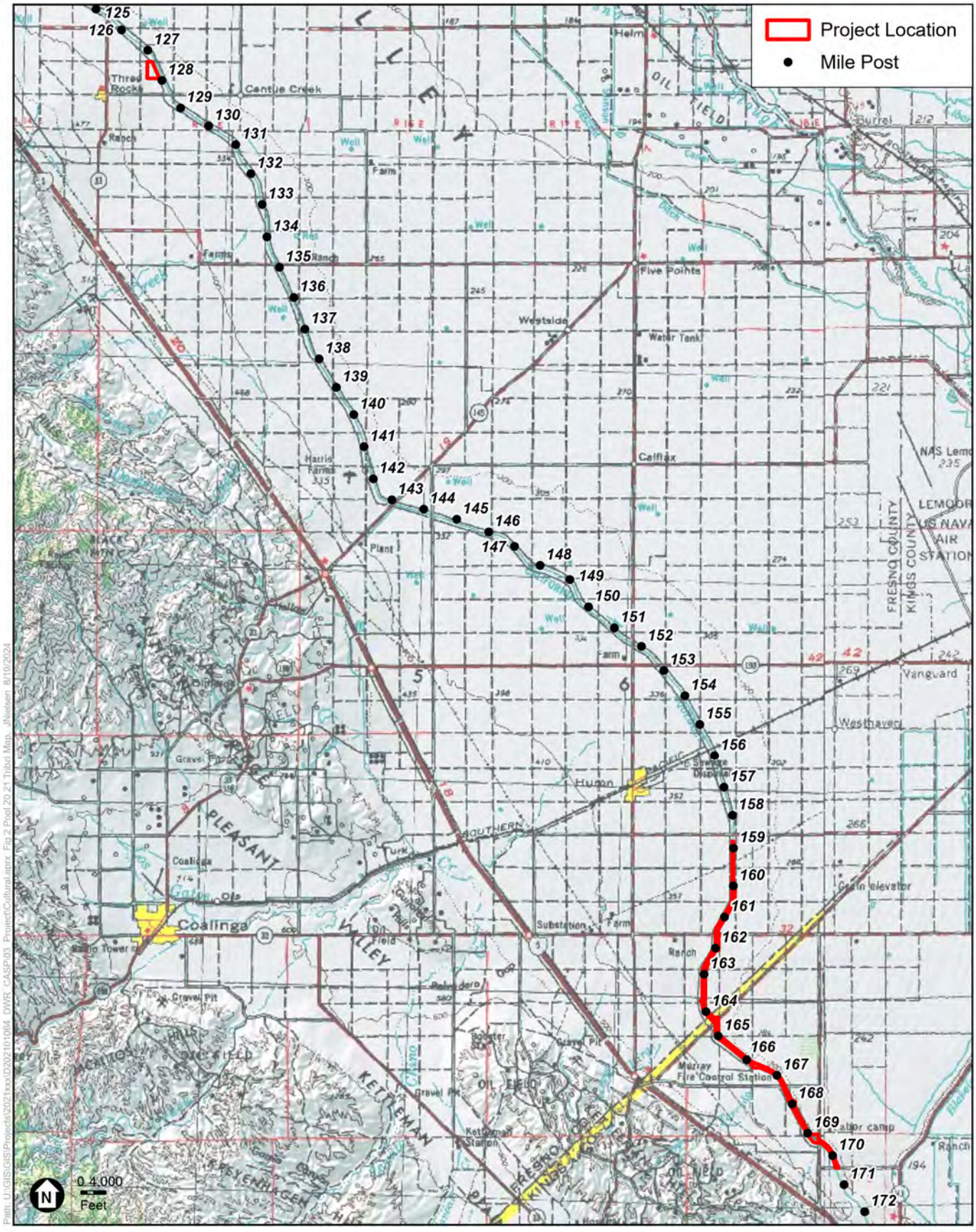
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CASP

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Project Vicinity

ESA

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CASP

Figure 2
Project Location

ESA

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DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024 Sent via certified mail

The Honorable Carol Bill
Chairperson
Cold Springs Rancheria of Mono Indians
P.O. Box 209, Tollhouse, CA 93667
csrchair@netptc.net;
coldsprgstribe@netptc.net

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
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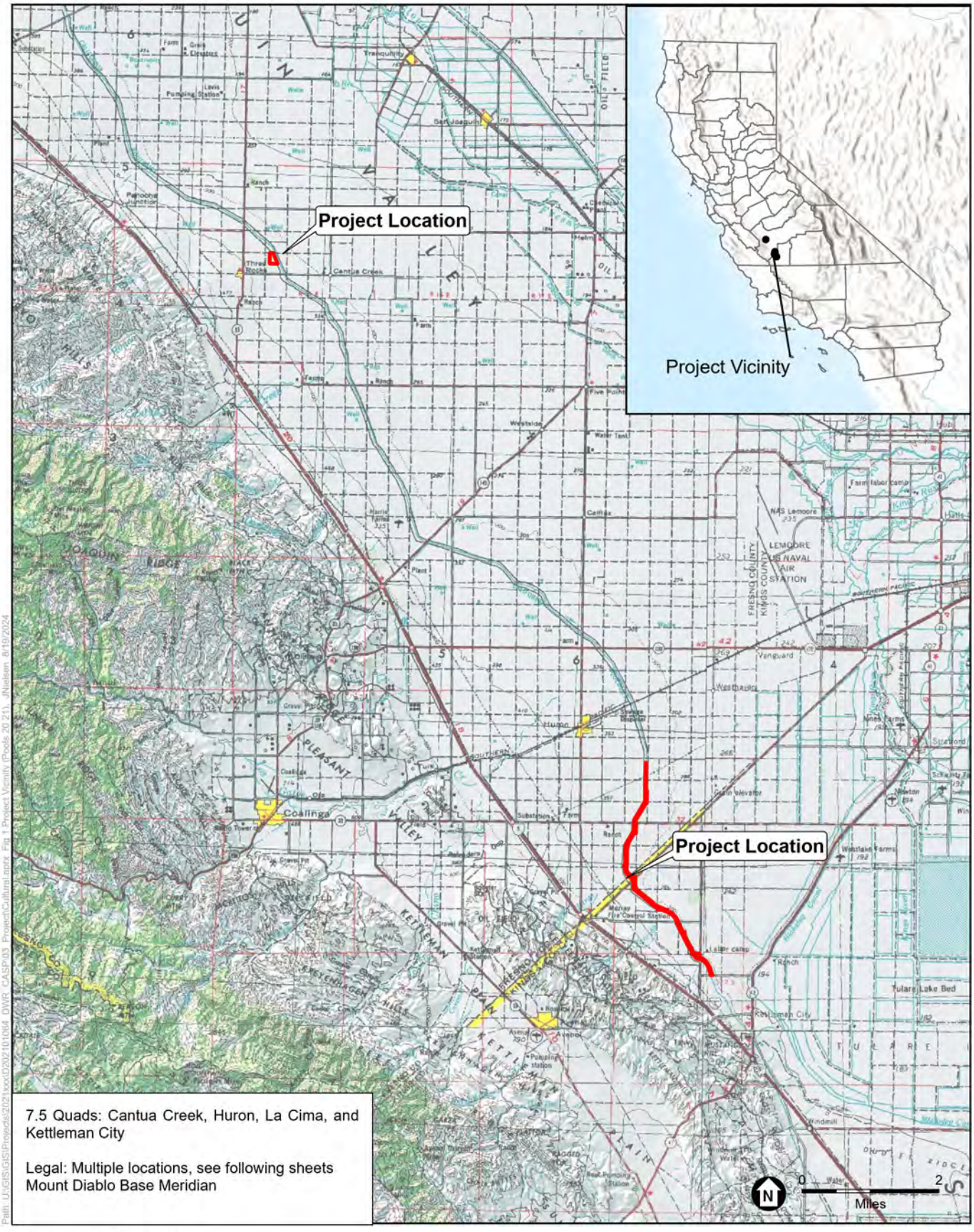
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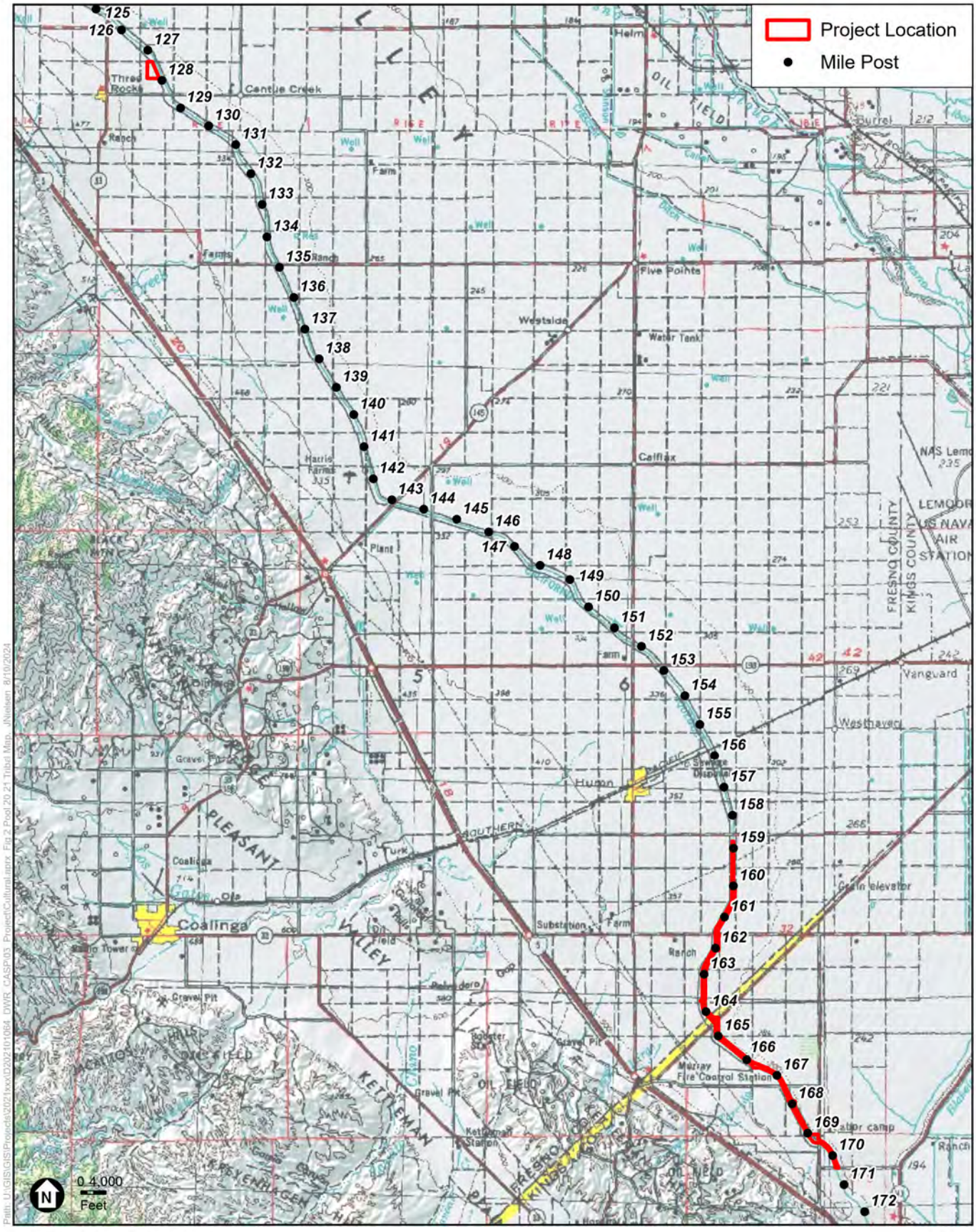
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024

Sent via certified mail

The Honorable Robert Ledger
Chairperson
Dumna Wo-Wah Tribal Government
2191 West Pico Ave.
Fresno, CA 93705
ledgerrobert@ymail.com

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson Ledger,

I hope this letter finds you well. I am writing on behalf of the Department of Water Resources (DWR), Division of Engineering (DOE). DOE works on design and construction projects through the State to maintain various elements of the State Water Project.

The Environmental Coordination Section (ECS) in DOE supports various aspects of environmental compliance of our division's work, including compliance with AB 52, and the DWR *Tribal Engagement Policy*. Currently, DOE's environmental team is supporting multiple projects of which the Dumna Wo-Wah Tribal Government (Tribe) has been identified as possible partner, consulting Tribe, or otherwise interested. For ease of review, and in furtherance of DWR goals of collaboration and transparency, we have consolidated consultation letters different projects into one envelope. My intention is to acknowledge the multiple consultation letters and provide consolidated communication where possible.

The consultation letters enclosed are related to the following projects.

- The Pools 17 and 18 Liner Raise Project is located approximately 12 miles west of Helm, California, within Fresno County, on the San Luis Canal. DWR and Reclamation are proposing to jointly implement this project.

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For ease of reference, helpful contacts are in the list below.

Marea Bell	*Main Point of Contact* Enviro. Planning Lead: • Pools 17&18 • Pools 20&21	Marea.Bell@water.ca.gov (916) 882-2945
Sarah Cannon	ECS Manager	Sarah.Cannon@water.ca.gov (916) 882-2829
Jesse Dillon	CASP Program Manager	Jesse.Dillon@water.ca.gov (916) 699-8403
Anecita Augustinez	DWR Office of Tribal Affairs	Anecita.Augustinez@water.ca.gov (916) 216-8637

Should you have any questions, comments, or concerns at any point, please do not hesitate to contact me directly, reach out to the designated project contact(s), or contact the DWR Tribal Office. We remain committed to partnering with you in a clear and cooperative manner, to properly account for and manage resources important to the Tribe, consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

Respectfully,

Sarah Cannon

Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024

Sent via certified mail and email

The Honorable Robert Ledger
Chairperson
Dumna Wo-Wah Tribal Government
2191 West Pico Ave.
Fresno, CA 93705
ledgerrobert@ymail.com

Subject: Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

Dear Chairperson Ledger,

This letter serves as a formal invitation to the Dumna Wo-Wah Tribal Government (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, as depicted in the *Huron*, *California*, *Kettleman City*, *California*, and *La Cima*, *California* U.S. Geological Survey 7.5-minute topographic maps (see Attachments 1 and 2). DWR and the U.S. Bureau of Reclamation (Reclamation) are proposing to implement the Project jointly. DWR is the lead agency under the California Environmental Quality Act (CEQA) and is committed to working with the Tribe under DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

If the Tribe would like to consult under Assembly Bill (AB) 52, this is also notice DWR has not received an AB 52 request for notification from the Tribe and is an opportunity to ensure current and future engagement to consult under AB 52.

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Brief Program Background

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The San Luis Canal was constructed as a series of interconnected pools that are operated in coordination to convey water primarily by gravity from one pool to the next through check structures and pumping plants. The San Luis Canal traverses portions of the Central Valley that have experienced subsidence, which is defined as a local or regional drop in ground surface elevation. This subsidence has reduced the San Luis Canal's delivery capability and reliability, as well as increased maintenance, repair, and energy costs.

This project is part of a larger CASP program, comprised of short term (or interim actions) and long-term corrective actions aimed to repair the San Luis Canal and the California Aqueduct. Additional information about the program and projects can be found here: https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence

Cultural Resources Investigations To-Date

Cultural resources investigations completed to date for the Project include the activities listed below. An *Archaeological and Architectural Resources Inventory Report* is currently being prepared for the project.

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It should be noted that because the Project is being jointly proposed by DWR and Reclamation, it is subject to federal environmental regulations, including the National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966 (NHPA). Reclamation is the lead federal agency for NEPA/NHPA purposes.

Conclusion

DWR is committed to working collaboratively with the Tribe to properly account for and manage resources important to the Tribe consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*. We welcome any recommendations regarding appropriate management or treatment of

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resources, including Tribal cultural resources, that occur within or near the Project Area. This notification does not limit the Tribe's ability to submit information regarding the identification or significance of Tribal cultural resources, the significance of the Project's potential impact on tribal cultural resources, or any appropriate mitigation measures (PRC §21080.3.2(c)(1)).

If the Tribe has any questions or needs additional information, please contact DWR Environmental Planning Lead Marea Bell at (916) 882-2945 or marea.bell@water.ca.gov, or DWR Office of Tribal Affairs Executive Manager Anecita Agustinez at (916) 216-8637 or tribalpolicyadvisor@water.ca.gov.

Information on the CASP Tribal Engagement activities can also be found here https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence/TribalEngagement.

Respectfully,

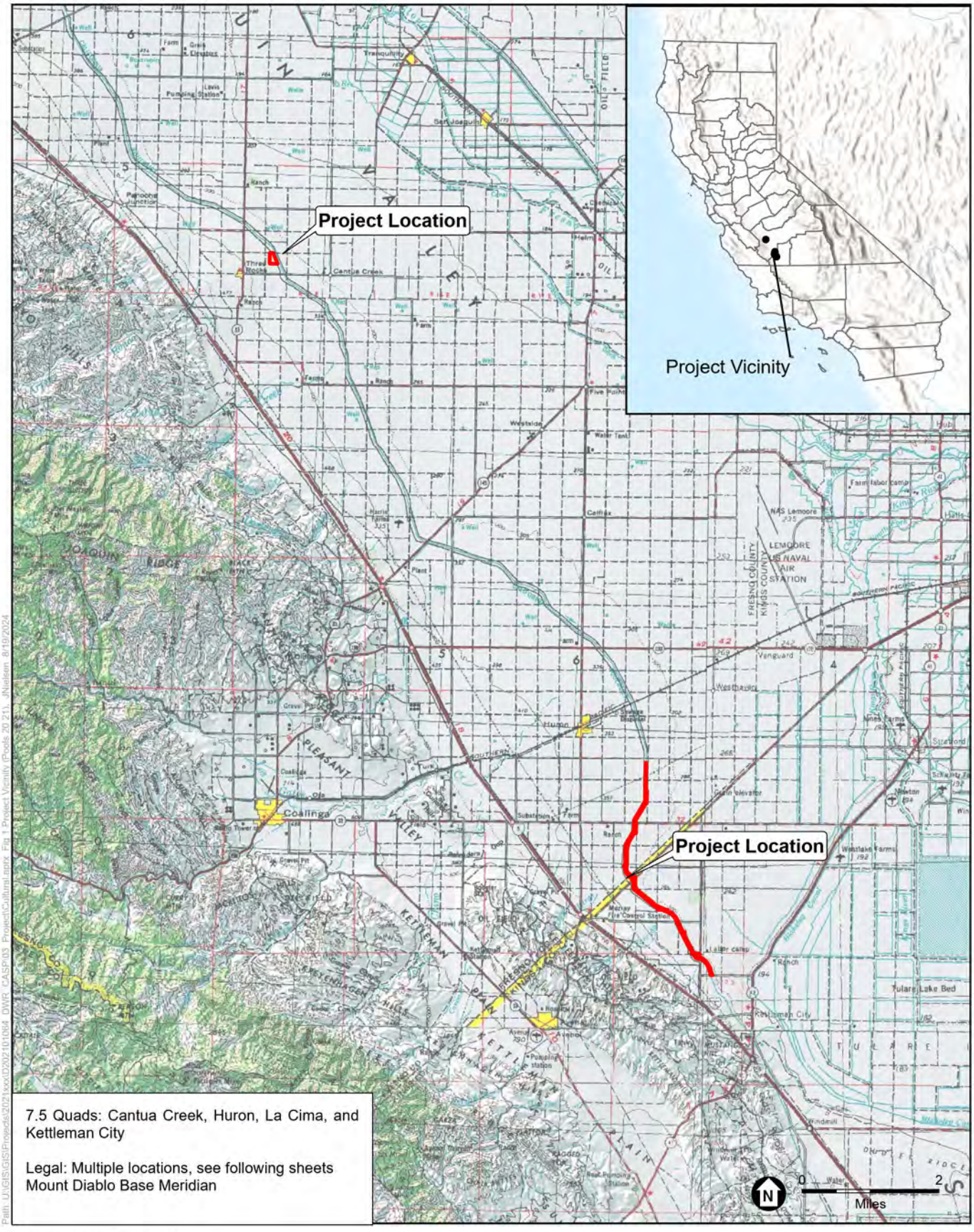


Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
Marea Bell, DWR Environmental Planning Lead

Attachment 1. Project Vicinity Map
Attachment 2. Project Location Map

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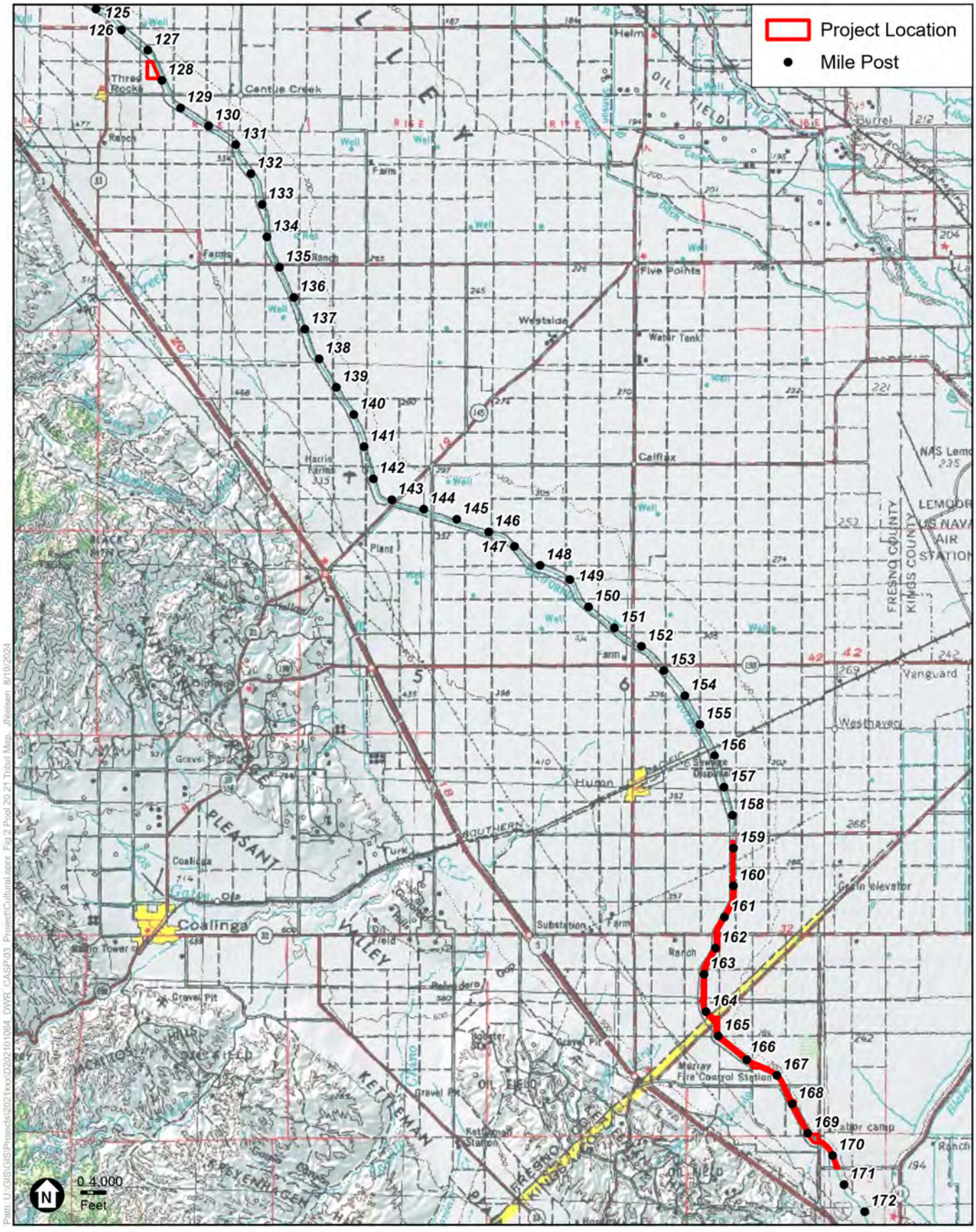
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

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SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

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DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024

Sent via certified mail

Honorable Benjamin Charley
Chairperson
Dunlap Band of Mono Indians
P.O. Box 14
Dunlap, CA 93621
ben.charley@yahoo.com

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson Charley,

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Respectfully,

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Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

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715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024

Sent via certified mail and email

The Honorable Benjamin Charley
Chairperson
Dunlap Band of Mono Indians
P.O. Box 14
Dunlap, CA 93621
ben.charley@yahoo.com

Subject: Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

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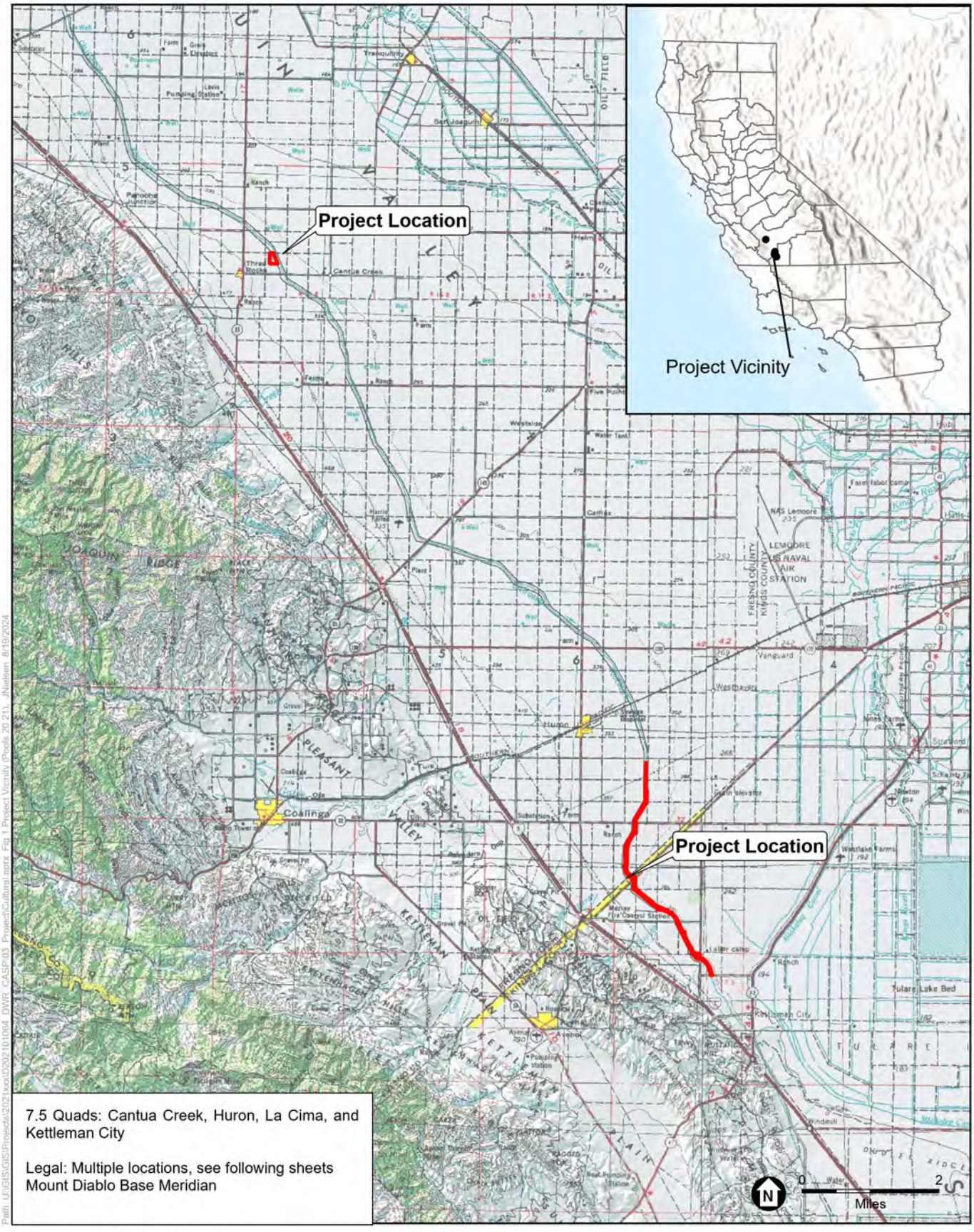
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Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Dirk Charley, Tribal Secretary, Dunlap Band of Mono Indians
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
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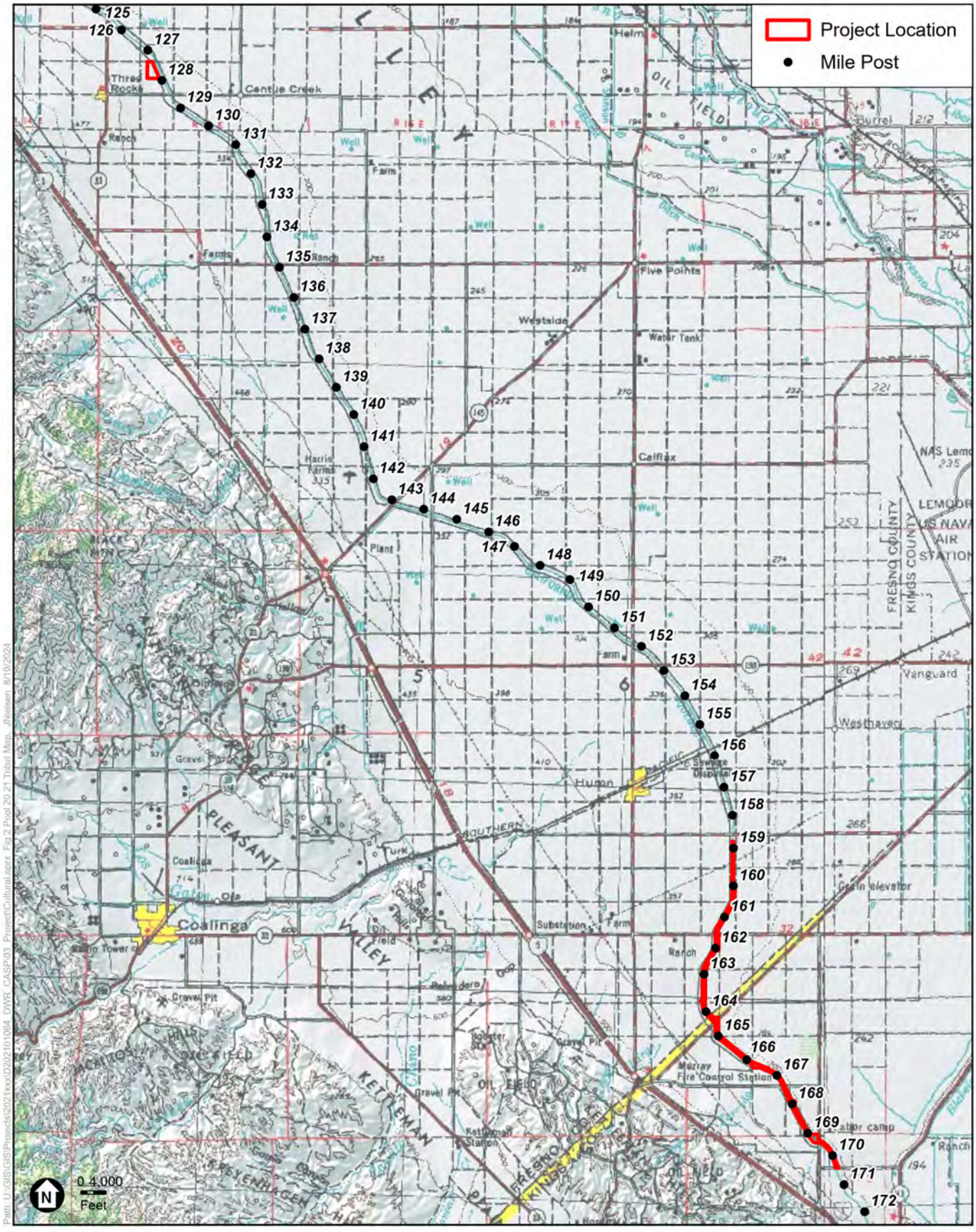
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

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DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024

Sent via certified mail

The Honorable Delia Dominguez,
Chairperson
Kitanemuk & Yowlumne Tejon Indians
115 Radio Street
Bakersfield, CA, 93305
2deedominguez@gmail.com

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

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DWR – State Water Project: Division of Engineering
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2deedominguez@gmail.com

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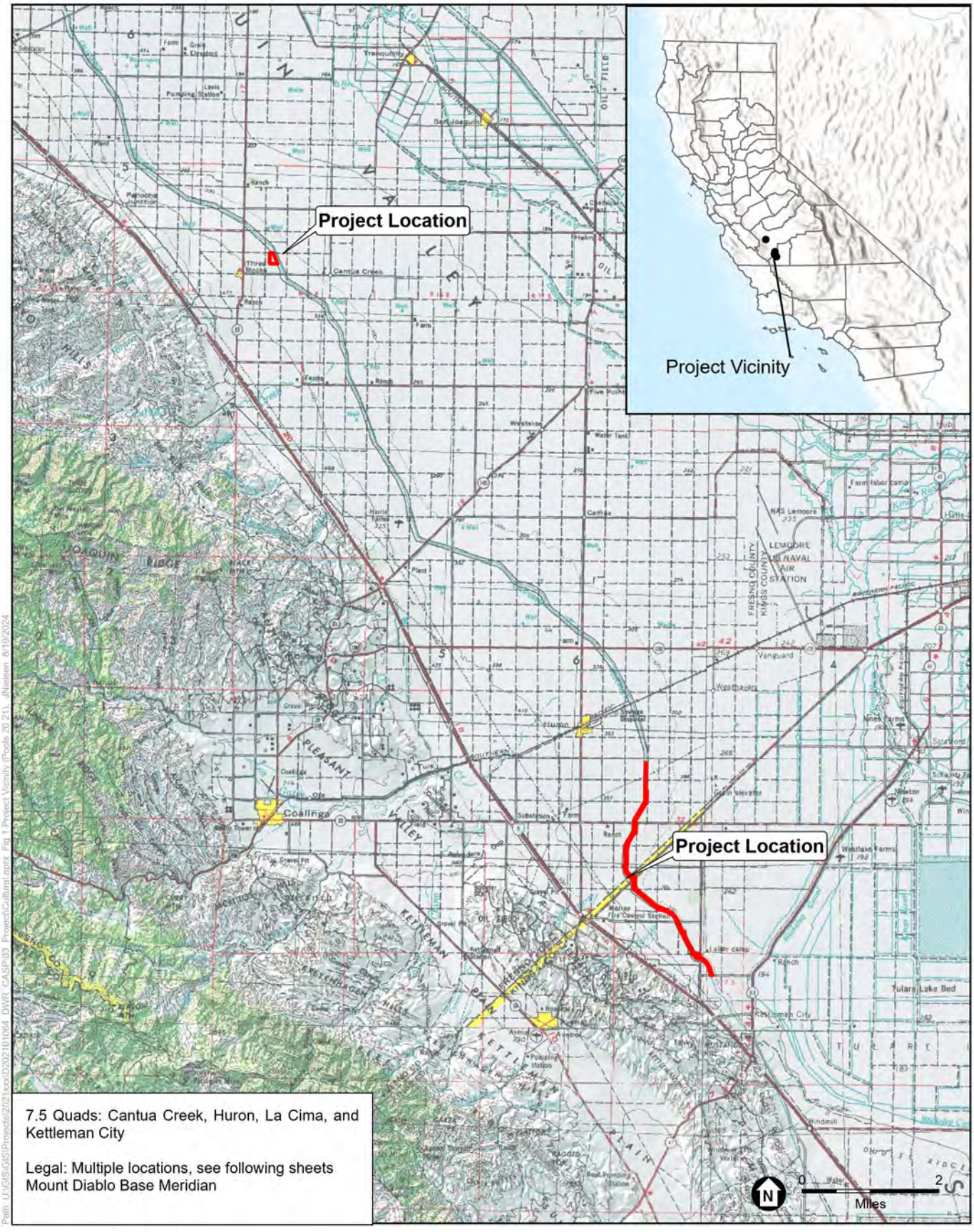
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cc.
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Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
Marea Bell, DWR Environmental Planning Lead

Attachment 1. Project Vicinity Map
Attachment 2. Project Location Map

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



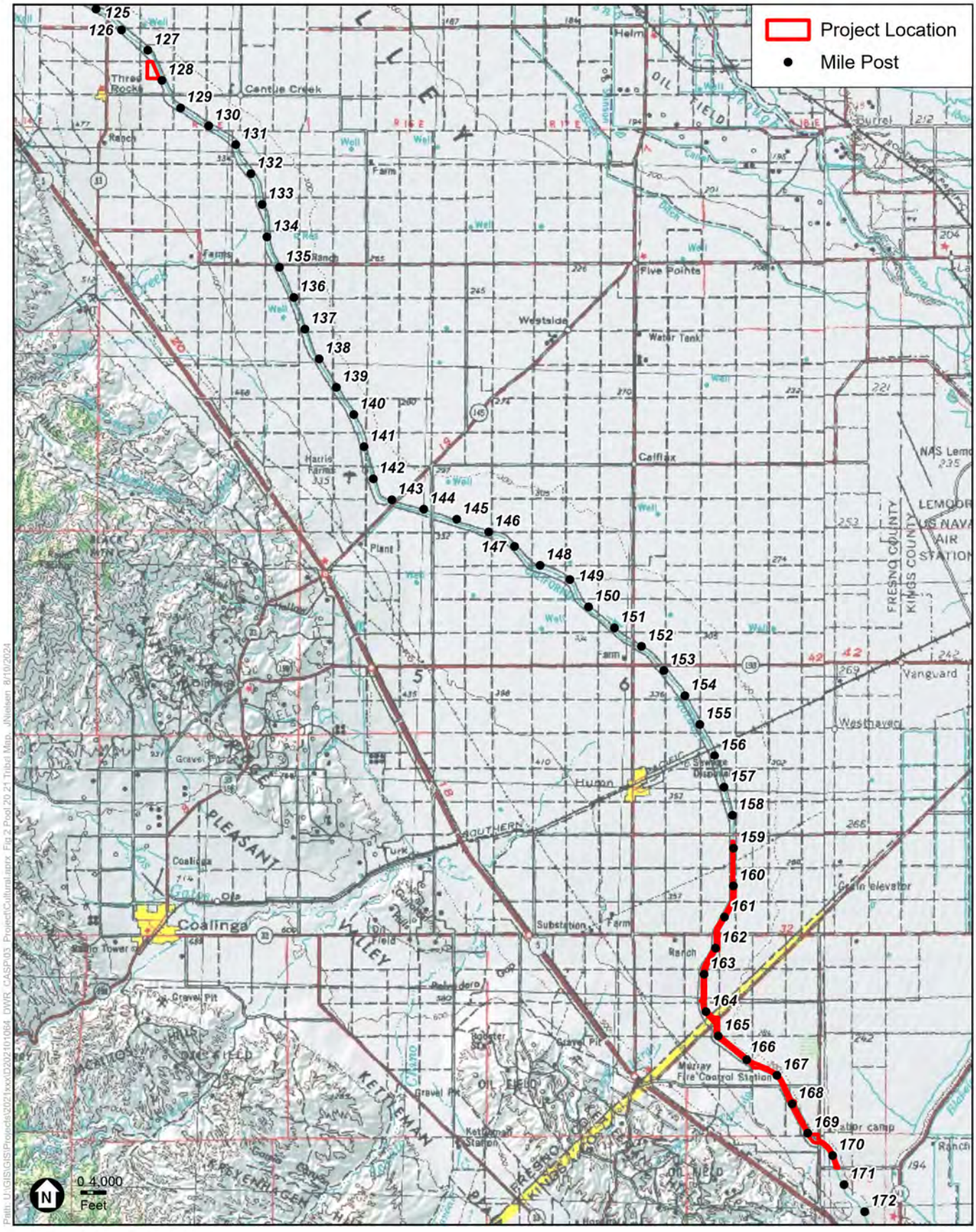
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024 Sent via certified mail

Mr. Timothy Perez
Tribal Compliance Officer
Northern Valley Yokut / Ohlone Tribe
P.O. Box 717
Linden, CA, 95236
huskanam@gmail.com

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Mr. Perez,

I hope this letter finds you well. I am writing on behalf of the Department of Water Resources (DWR), Division of Engineering (DOE). DOE works on design and construction projects through the State to maintain various elements of the State Water Project.

The Environmental Coordination Section (ECS) in DOE supports various aspects of environmental compliance of our division's work, including compliance with AB 52, and the DWR *Tribal Engagement Policy*. Currently, DOE's environmental team is supporting multiple projects of which the Northern Valley Yokut / Ohlone Tribe (Tribe) has been identified as possible partner, consulting Tribe, or otherwise interested. For ease of review, and in furtherance of DWR goals of collaboration and transparency, we have consolidated consultation letters different projects into one envelope. My intention is to acknowledge the multiple consultation letters and provide consolidated communication where possible.

The consultation letters enclosed are related to the following projects.

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Sarah Cannon	ECS Manager	Sarah.Cannon@water.ca.gov (916) 882-2829
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Anecita Augustinez	DWR Office of Tribal Affairs	Anecita.Augustinez@water.ca.gov (916) 216-8637

Should you have any questions, comments, or concerns at any point, please do not hesitate to contact me directly, reach out to the designated project contact(s), or contact the DWR Tribal Office. We remain committed to partnering with you in a clear and cooperative manner, to properly account for and manage resources important to the Tribe, consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

Respectfully,

Sarah Cannon

Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

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DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024 Sent via certified mail and email

Mr. Timothy Perez
Tribal Compliance Officer
Northern Valley Yokut / Ohlone Tribe
P.O. Box 717
Linden, CA, 95236
huskanam@gmail.com

Subject: Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

Dear Mr. Perez,

This letter serves as a formal invitation to the Northern Valley Yokut / Ohlone Tribe (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, as depicted in the *Huron*, *California*, *Kettleman City*, *California*, and *La Cima*, *California* U.S. Geological Survey 7.5-minute topographic maps (see Attachments 1 and 2). DWR and the U.S. Bureau of Reclamation (Reclamation) are proposing to implement the Project jointly. DWR is the lead agency under the California Environmental Quality Act (CEQA) and is committed to working with the Tribe under DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

If the Tribe would like to consult under Assembly Bill (AB) 52, this is also notice DWR has not received an AB 52 request for notification from the Tribe and is an opportunity to ensure current and future engagement to consult under AB 52.

Brief Overview of Project Description
The Project consists of raising, or extending, the existing concrete liner to the top of the unlined embankment of the San Luis Canal located in portions of Pools 20 and 21 (see Attachments 1 and 2), which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing the capacity and operational flexibility that has become limited due to subsidence while improving safety and reliability.

Brief Program Background
The San Luis Canal was constructed as a series of interconnected pools that are operated in coordination to convey water primarily by gravity from one pool to the next through check structures and pumping plants. The San Luis Canal traverses portions of

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the Central Valley that have experienced subsidence, which is defined as a local or regional drop in ground surface elevation. This subsidence has reduced the San Luis Canal's delivery capability and reliability, as well as increased maintenance, repair, and energy costs.

This project is part of a larger CASP program, comprised of short term (or interim actions) and long-term corrective actions aimed to repair the San Luis Canal and the California Aqueduct. Additional information about the program and projects can be found here: https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence

Cultural Resources Investigations To-Date

Cultural resources investigations completed to date for the Project include the activities listed below. An *Archaeological and Architectural Resources Inventory Report* is currently being prepared for the project.

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CEQA Implementation

DWR is the lead agency under the CEQA and is proposing to prepare an Initial Study/Mitigated Negative Declaration for the Project. As part of the cultural resources review of the project under CEQA, we are writing to provide the Tribe an opportunity to submit any information the Tribe is willing to share about cultural resources or Tribal cultural resources as defined in California Public Resources Code (PRC) §21074, that may be near the proposed Project Area shown in Attachments 1 and 2. We understand that the locations of these resources are sensitive and resource locations will not be disclosed in public documents and will be kept confidential as provided for under California Government Code §6254.10.

It should be noted that because the Project is being jointly proposed by DWR and Reclamation, it is subject to federal environmental regulations, including the National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966 (NHPA). Reclamation is the lead federal agency for NEPA/NHPA purposes.

Conclusion

DWR is committed to working collaboratively with the Tribe to properly account for and manage resources important to the Tribe consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*. We welcome any recommendations regarding appropriate management or treatment of resources, including Tribal cultural resources, that occur within or near the Project Area. This notification does not limit the Tribe's ability to submit information regarding the identification or significance of Tribal cultural resources, the significance of the Project's

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

potential impact on tribal cultural resources, or any appropriate mitigation measures (PRC §21080.3.2(c)(1)).

If the Tribe has any questions or needs additional information, please contact DWR Environmental Planning Lead Marea Bell at (916) 882-2945 or marea.bell@water.ca.gov, or DWR Office of Tribal Affairs Executive Manager Anecita Agustinez at (916) 216-8637 or tribalpolicyadvisor@water.ca.gov.

Information on the CASP Tribal Engagement activities can also be found here https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence/TribalEngagement.

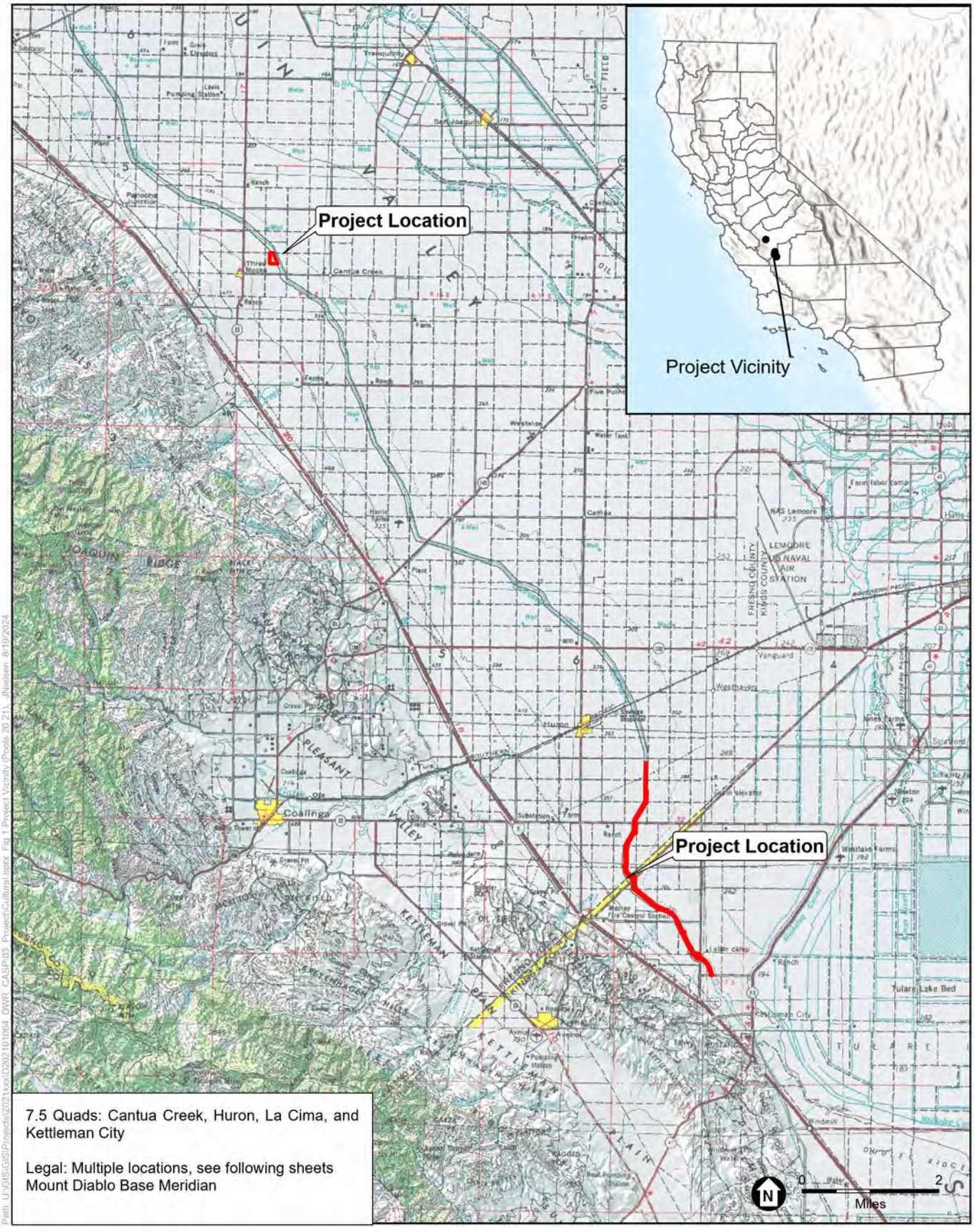
Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Katherine Perez, Chairperson, Northern Valley Yokut / Ohlone Tribe
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
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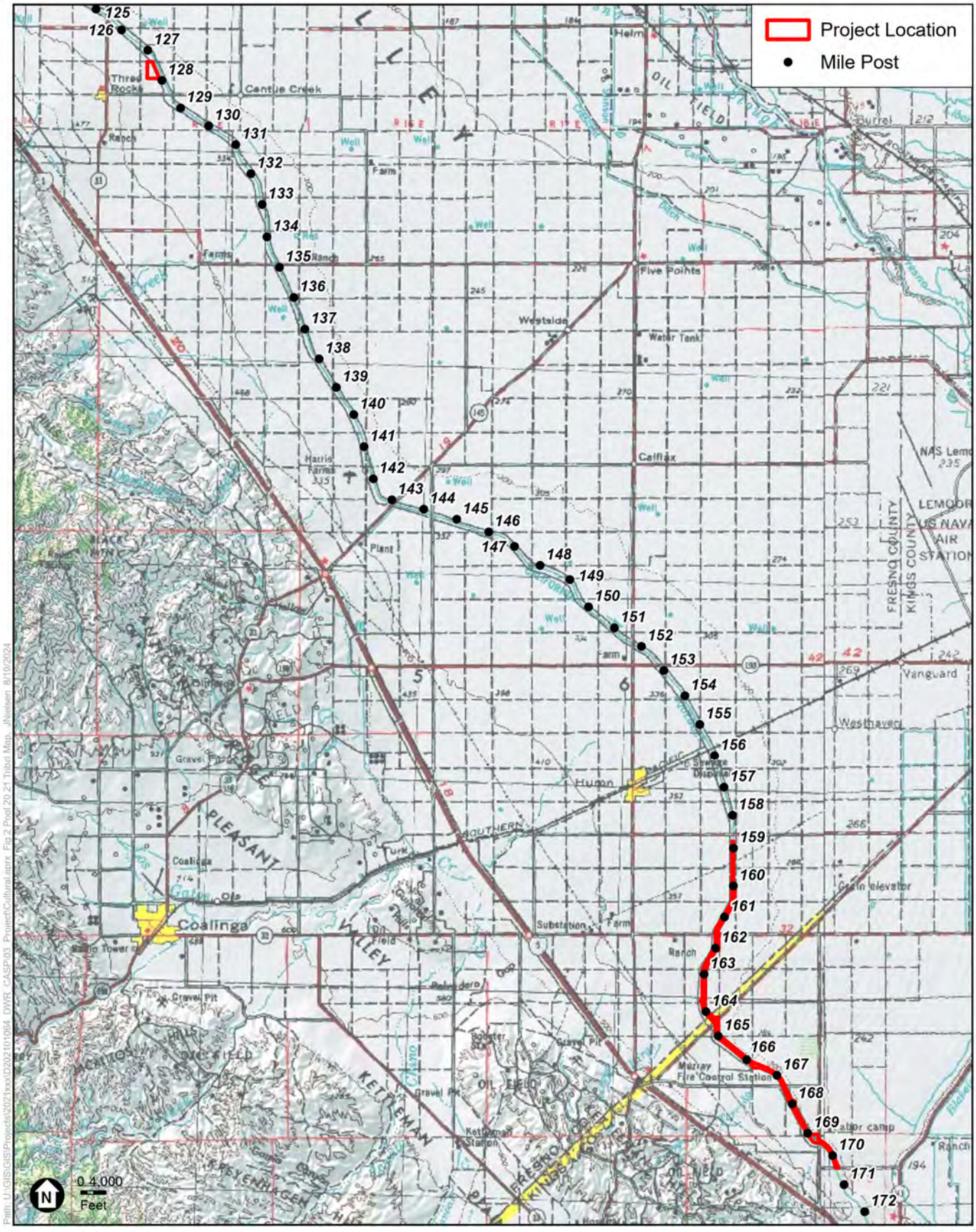
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

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SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

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DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024 Sent via certified mail

Ms. Patti Dunton
Tribal Administrator
Salinan Tribe of Monterey and San Luis Obispo Counties
8270 Morro Rd.
Atascadero, CA, 93422
info@salinantribe.com

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Ms. Dunton,

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The Environmental Coordination Section (ECS) in DOE supports various aspects of environmental compliance of our division's work, including compliance with AB 52, and the DWR *Tribal Engagement Policy*. Currently, DOE's environmental team is supporting multiple projects of which the Salinan Tribe of Monterey and San Luis Obispo Counties (Tribe) has been identified as possible partner, consulting Tribe, or otherwise interested. For ease of review, and in furtherance of DWR goals of collaboration and transparency, we have consolidated consultation letters different projects into one envelope. My intention is to acknowledge the multiple consultation letters and provide consolidated communication where possible.

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Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

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DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

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Ms. Patti Dunton
Tribal Administrator
Salinan Tribe of Monterey and San Luis Obispo Counties
8270 Morro Rd.
Atascadero, CA, 93422
info@salinantribe.com

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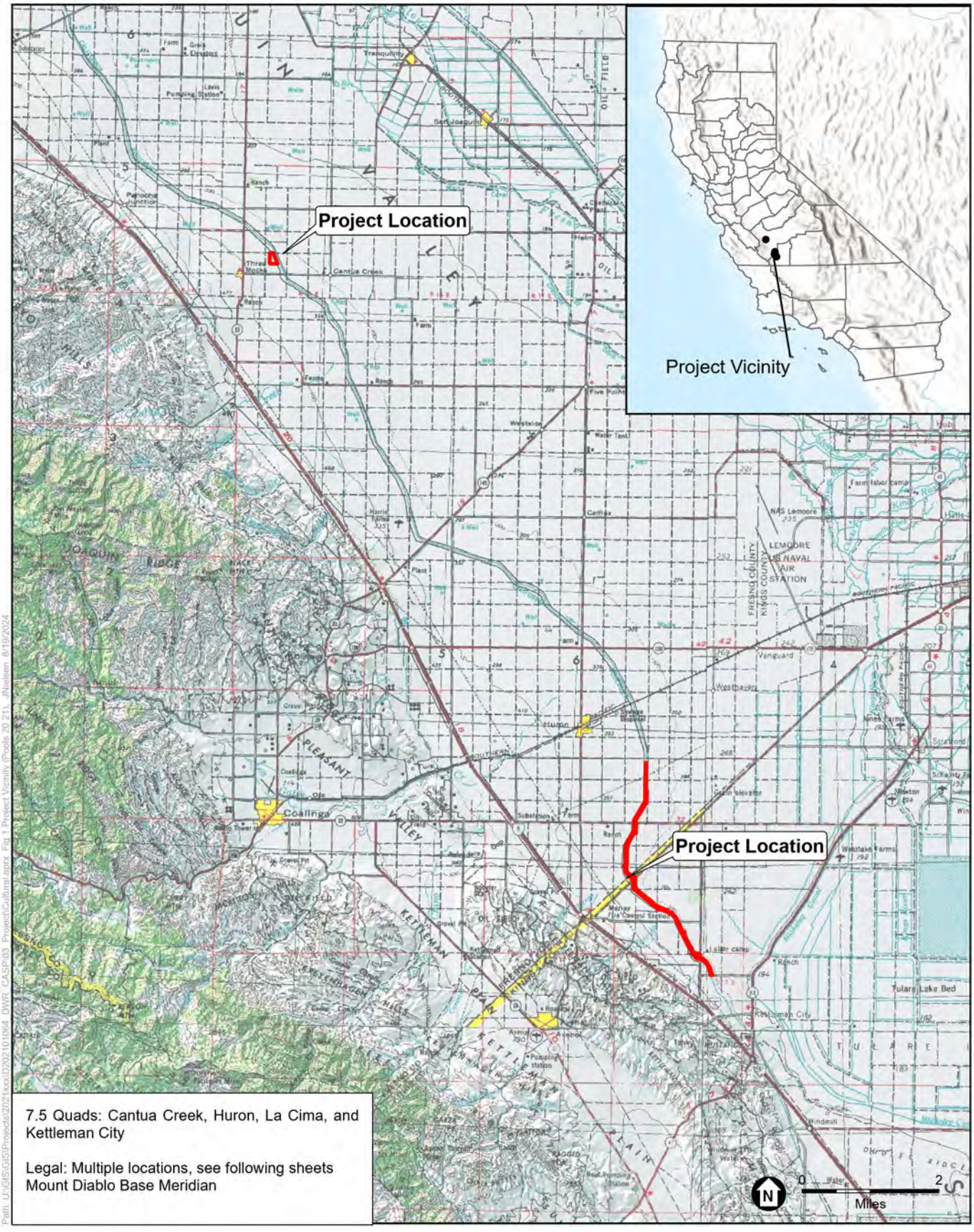
Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Robert Piatti, Cultural Protection Lead, Salina Tribe of Monterey and San Luis Obispo Counties
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
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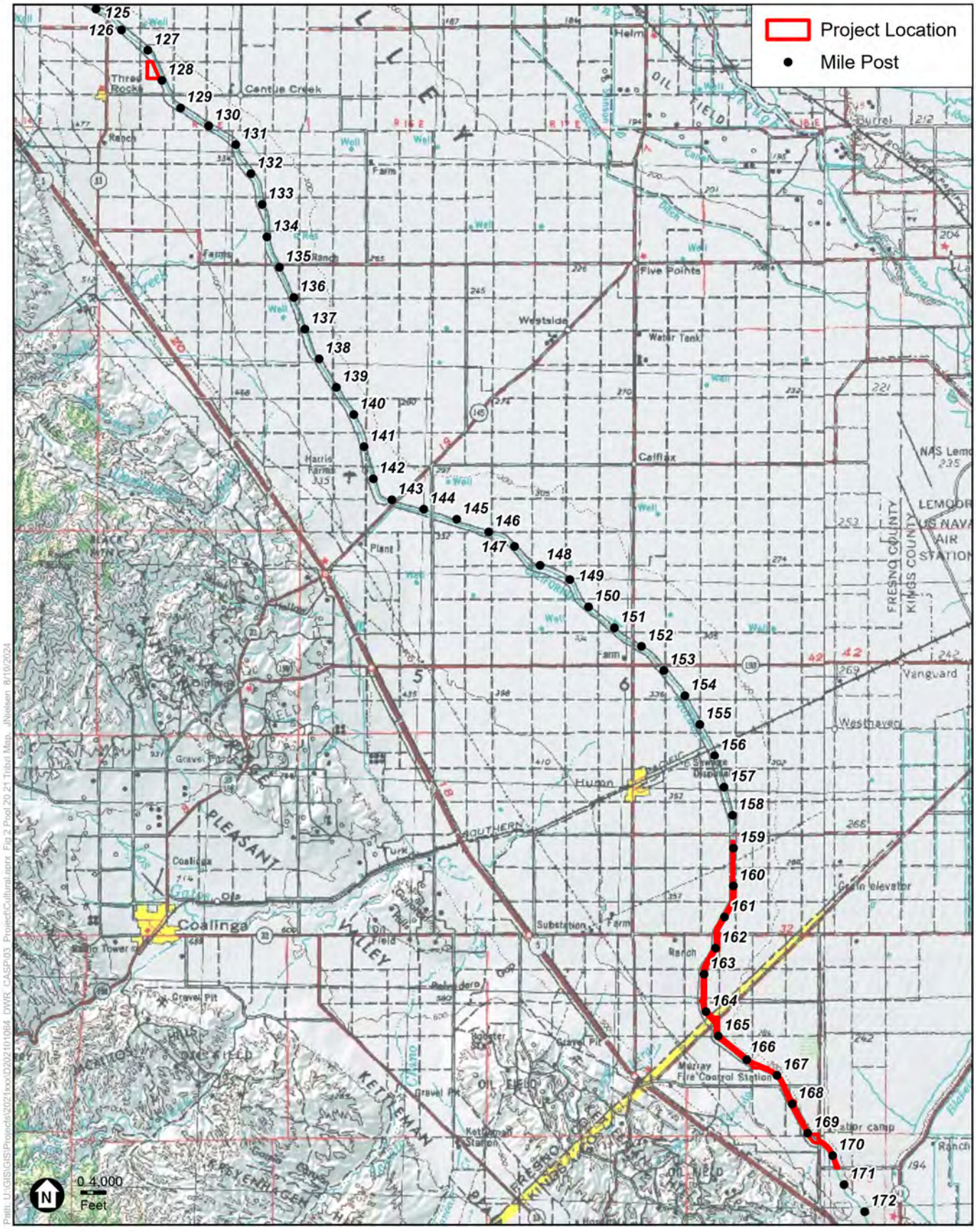
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CASP

Figure 1
Project Vicinity

ESA

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SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

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DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024 Sent via certified mail

The Honorable Leo Sisco
Chairperson
Santa Rosa Rancheria Tachi Yokut Tribe
P.O. Box 8
Lemoore, CA, 93245

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson Sisco,

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Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

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DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024 Sent via certified mail and email

The Honorable Leo Sisco
Chairperson
Santa Rosa Rancheria Tachi Yokut Tribe
P.O. Box 8
Lemoore, CA, 93245

Subject: AB 52 Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

Dear Chairperson Sisco,

This letter serves as a formal invitation to the Santa Rosa Rancheria Tachi Yokut Tribe (Tribe) to begin government-to-government consultation with the California Department of Water Resources (DWR) under Assembly Bill 52 (AB 52), pursuant to Public Resources Code (PRC) §21080.3.1, on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, as depicted in the *Huron*, *California*, *Kettleman City*, *California*, and *La Cima*, *California* U.S. Geological Survey 7.5-minute topographic maps (see Attachments 1 and 2). DWR and the U.S. Bureau of Reclamation (Reclamation) are proposing to implement the Project jointly. DWR is the lead agency under the California Environmental Quality Act (CEQA) and is committed to working collaboratively with the Tribe to properly account for resources important to the Tribe.

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Conclusion

DWR is committed to working collaboratively with the Tribe to properly account for and manage resources important to the Tribe. If the Tribe wishes to engage in formal government-to-government consultation with DWR for the proposed Project under AB 52 and PRC §21080.3.1, please respond within 30 calendar days of this notice in writing with the Tribe's designated Point of Contact(s) for consultation to DWR Office of Tribal Affairs Executive Manager Anecita Agustinez at tribalpolicyadvisor@water.ca.gov and DWR Environmental Planning Lead Marea Bell at marea.bell@water.ca.gov.

If a written request for consultation under AB 52 (PRC §21080.3.1) is not received by DWR within 30 calendar days, DWR will proceed with consultation under its *Tribal Engagement Policy* and the California Natural Resources Agency *Tribal Consultation*

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Policy to work collaboratively with the Tribe. This notification does not limit the ability of the Tribe to submit information to DWR. (PRC §21080.3.2.)

If the Tribe has any questions or needs additional information, please contact DWR Environmental Planning Lead Marea Bell at (916) 882-2945 or marea.bell@water.ca.gov, or DWR Office of Tribal Affairs Executive Manager Anecita Agustinez at (916) 216-8637 or tribalpolicyadvisor@water.ca.gov.

Information on the CASP Tribal Engagement activities can also be found here https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence/TribalEngagement.

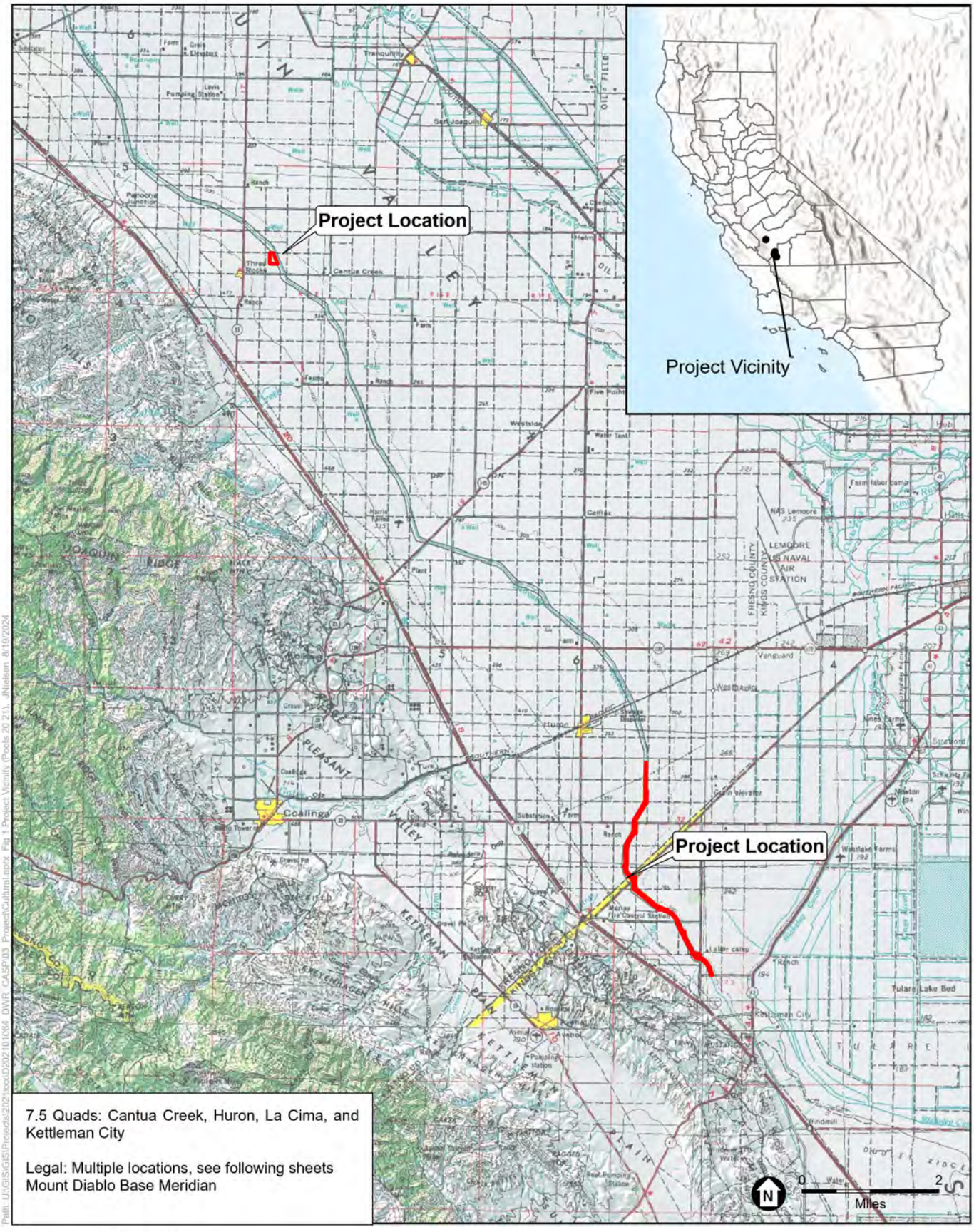
Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Samantha McCarty, Cultural Specialist II, Santa Rosa Rancheria Tachi Yokut Tribe
Nichole Escalon, Cultural Specialist I, Santa Rosa Rancheria Tachi Yokut Tribe
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
Marea Bell, DWR Environmental Planning Lead

Attachment 1. Project Vicinity Map
Attachment 2. Project Location Map

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



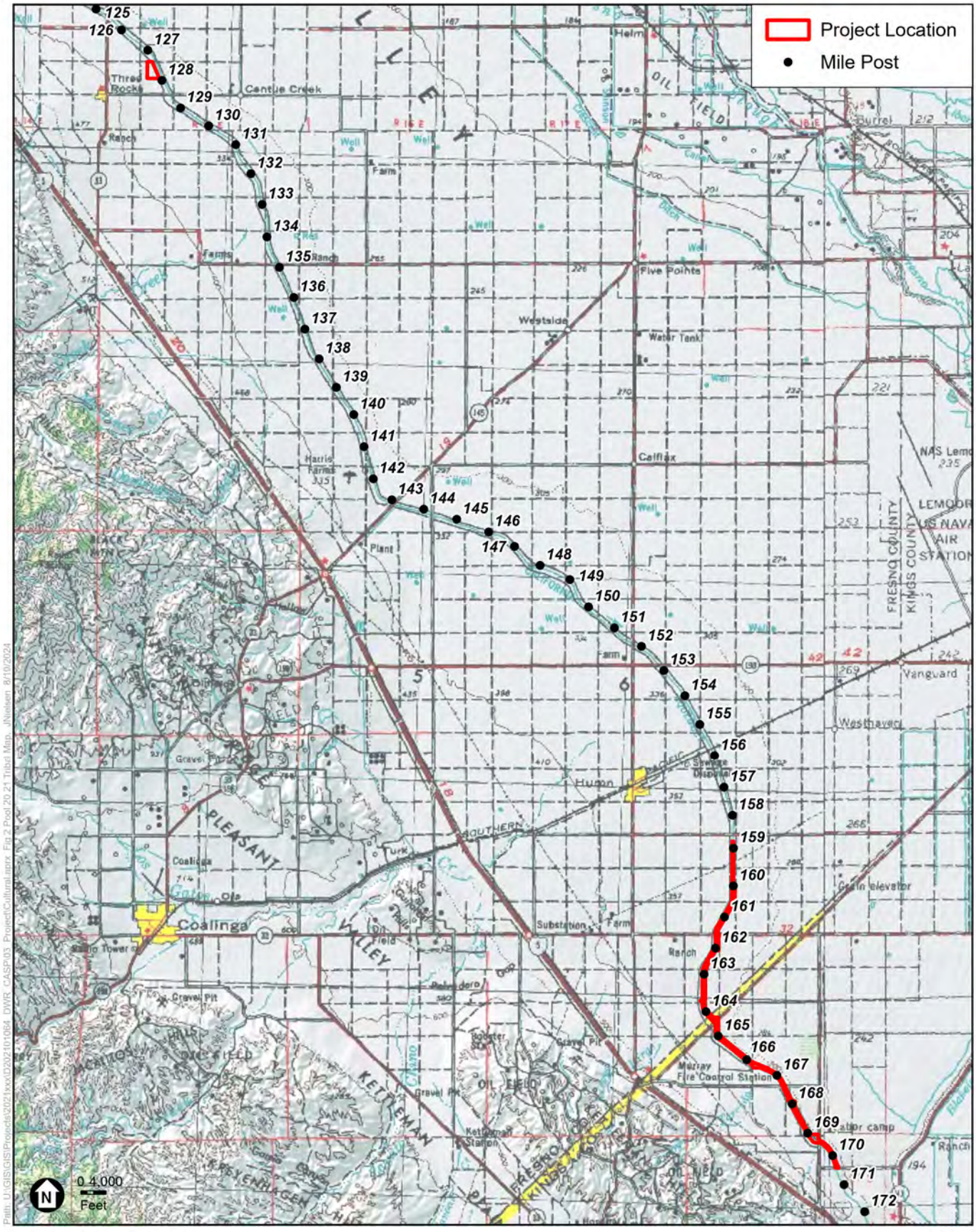
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

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SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY **GAVIN NEWSOM**, *Governor*

DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024 Sent via certified mail

The Honorable Marie Dominguez
Chairperson
Sierra Foothill Wuksachi Yokuts Tribe
35845 Maxon Road #108
Sanger, CA 93657

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson Dominguez,

I hope this letter finds you well. I am writing on behalf of the Department of Water Resources (DWR), Division of Engineering (DOE). DOE works on design and construction projects through the State to maintain various elements of the State Water Project.

The Environmental Coordination Section (ECS) in DOE supports various aspects of environmental compliance of our division's work, including compliance with AB 52, and the DWR *Tribal Engagement Policy*. Currently, DOE's environmental team is supporting multiple projects of which the Sierra Foothill Wuksachi Yokuts Tribe (Tribe) has been identified as possible partner, consulting Tribe, or otherwise interested. For ease of review, and in furtherance of DWR goals of collaboration and transparency, we have consolidated consultation letters different projects into one envelope. My intention is to acknowledge the multiple consultation letters and provide consolidated communication where possible.

The consultation letters enclosed are related to the following projects.

- The Pools 17 and 18 Liner Raise Project is located approximately 12 miles west of Helm, California, within Fresno County, on the San Luis Canal. DWR and Reclamation are proposing to jointly implement this project.

- The Pools 20 and 21 Liner Raise Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, on the San Luis Canal. DWR and Reclamation are proposing to jointly implement this project.

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For ease of reference, helpful contacts are in the list below.

Marea Bell	*Main Point of Contact* Enviro. Planning Lead: • Pools 17&18 • Pools 20&21	Marea.Bell@water.ca.gov (916) 882-2945
Sarah Cannon	ECS Manager	Sarah.Cannon@water.ca.gov (916) 882-2829
Jesse Dillon	CASP Program Manager	Jesse.Dillon@water.ca.gov (916) 699-8403
Anecita Augustinez	DWR Office of Tribal Affairs	Anecita.Augustinez@water.ca.gov (916) 216-8637

Should you have any questions, comments, or concerns at any point, please do not hesitate to contact me directly, reach out to the designated project contact(s), or contact the DWR Tribal Office. We remain committed to partnering with you in a clear and cooperative manner, to properly account for and manage resources important to the Tribe, consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

Respectfully,

Sarah Cannon

Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024 Sent via certified mail

Honorable Marie Dominguez
Chairperson
Sierra Foothill Wuksachi Yokuts Tribe
35845 Maxon Road #108
Sanger, CA 93657

Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project

Dear Honorable Chairperson Dominguez,

This letter serves as a formal invitation to the Sierra Foothill Wuksachi Yokuts Tribe (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, as depicted in the *Huron*, *California*, *Kettleman City*, *California*, and *La Cima*, *California* U.S. Geological Survey 7.5-minute topographic maps (see Attachments 1 and 2). DWR and the U.S. Bureau of Reclamation (Reclamation) are proposing to implement the Project jointly. DWR is the lead agency under the California Environmental Quality Act (CEQA) and is committed to working with the Tribe under DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

If the Tribe would like to consult under Assembly Bill (AB) 52, this is also notice DWR has not received an AB 52 request for notification from the Tribe and is an opportunity to ensure current and future engagement to consult under AB 52.

Brief Overview of Project Description
The Project consists of raising, or extending, the existing concrete liner to the top of the unlined embankment of the San Luis Canal located in portions of Pools 20 and 21 (see Attachments 1 and 2), which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing the capacity and operational flexibility that has become limited due to subsidence while improving safety and reliability.

Brief Program Background
The San Luis Canal was constructed as a series of interconnected pools that are operated in coordination to convey water primarily by gravity from one pool to the next through check structures and pumping plants. The San Luis Canal traverses portions of the Central Valley that have experienced subsidence, which is defined as a local or

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regional drop in ground surface elevation. This subsidence has reduced the San Luis Canal's delivery capability and reliability, as well as increased maintenance, repair, and energy costs.

This project is part of a larger CASP program, comprised of short term (or interim actions) and long-term corrective actions aimed to repair the San Luis Canal and the California Aqueduct. Additional information about the program and projects can be found here: https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence

Cultural Resources Investigations To-Date

Cultural resources investigations completed to date for the Project include the activities listed below. An *Archaeological and Architectural Resources Inventory Report* is currently being prepared for the project.

- California Native American Heritage Commission Sacred Lands File search request (no sacred sites identified)
- Records searches of the California Historical Resources Information System for the Project Area and vicinity (ten previously recorded cultural resources in the Project Area, eight of which are historic-era built environmental resources, and two of which are indigenous archaeological isolates)
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CEQA Implementation

DWR is the lead agency under the CEQA and is proposing to prepare an Initial Study/Mitigated Negative Declaration for the Project. As part of the cultural resources review of the project under CEQA, we are writing to provide the Tribe an opportunity to submit any information the Tribe is willing to share about cultural resources or Tribal cultural resources as defined in California Public Resources Code (PRC) §21074, that may be near the proposed Project Area shown in Attachments 1 and 2. We understand that the locations of these resources are sensitive and resource locations will not be disclosed in public documents and will be kept confidential as provided for under California Government Code §6254.10.

It should be noted that because the Project is being jointly proposed by DWR and Reclamation, it is subject to federal environmental regulations, including the National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966 (NHPA). Reclamation is the lead federal agency for NEPA/NHPA purposes.

Conclusion

DWR is committed to working collaboratively with the Tribe to properly account for and manage resources important to the Tribe consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*. We welcome any recommendations regarding appropriate management or treatment of resources, including Tribal cultural resources, that occur within or near the Project Area. This notification does not limit the Tribe's ability to submit information regarding the identification or significance of Tribal cultural resources, the significance of the Project's potential impact on tribal cultural resources, or any appropriate mitigation measures

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(PRC §21080.3.2(c)(1)).

If the Tribe has any questions or needs additional information, please contact DWR Environmental Planning Lead Marea Bell at (916) 882-2945 or marea.bell@water.ca.gov, or DWR Office of Tribal Affairs Executive Manager Anecita Agustinez at (916) 216-8637 or tribalpolicyadvisor@water.ca.gov.

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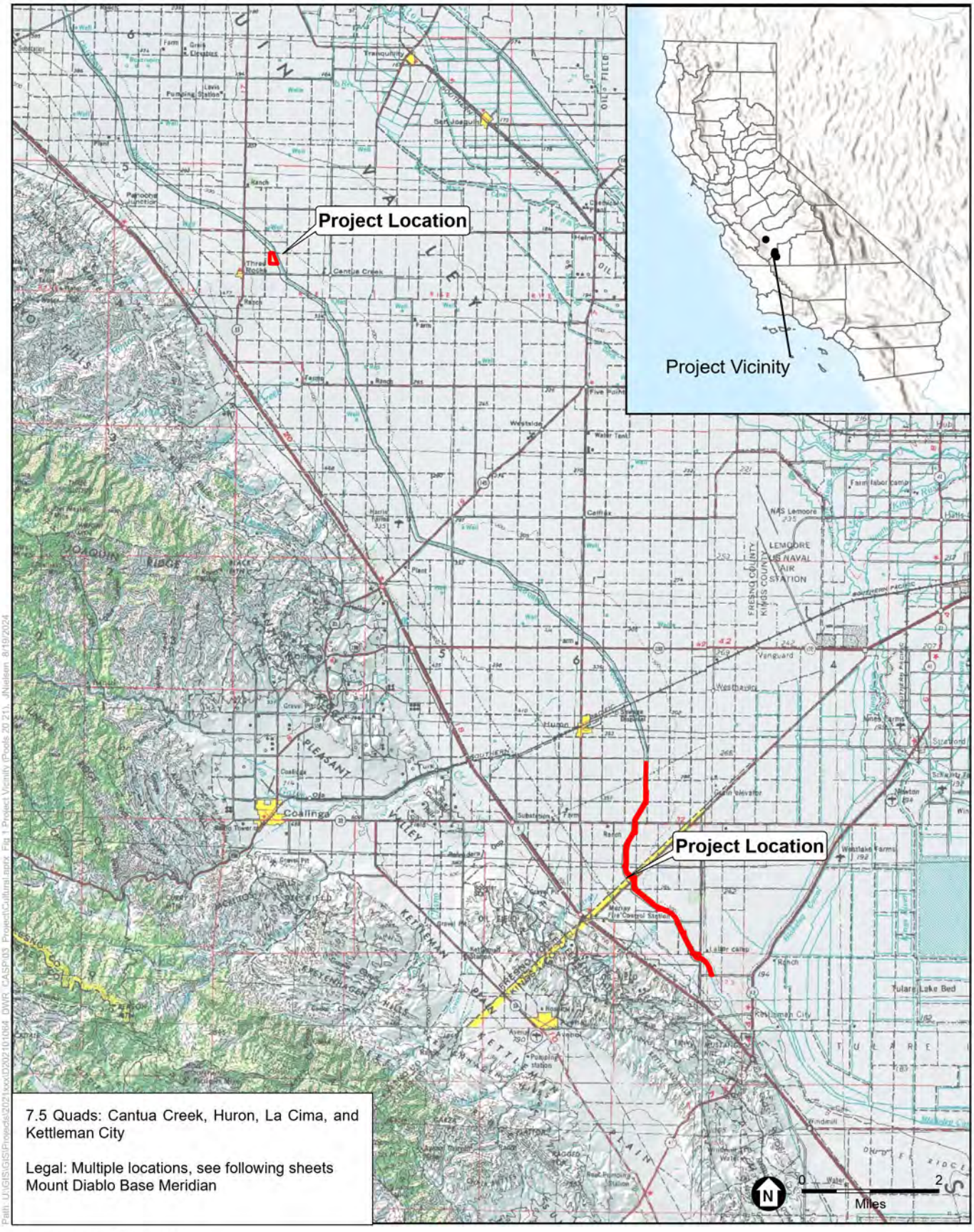
Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
Marea Bell, DWR Environmental Planning Lead

Attachment 1. Project Vicinity Map
Attachment 2. Project Location Map

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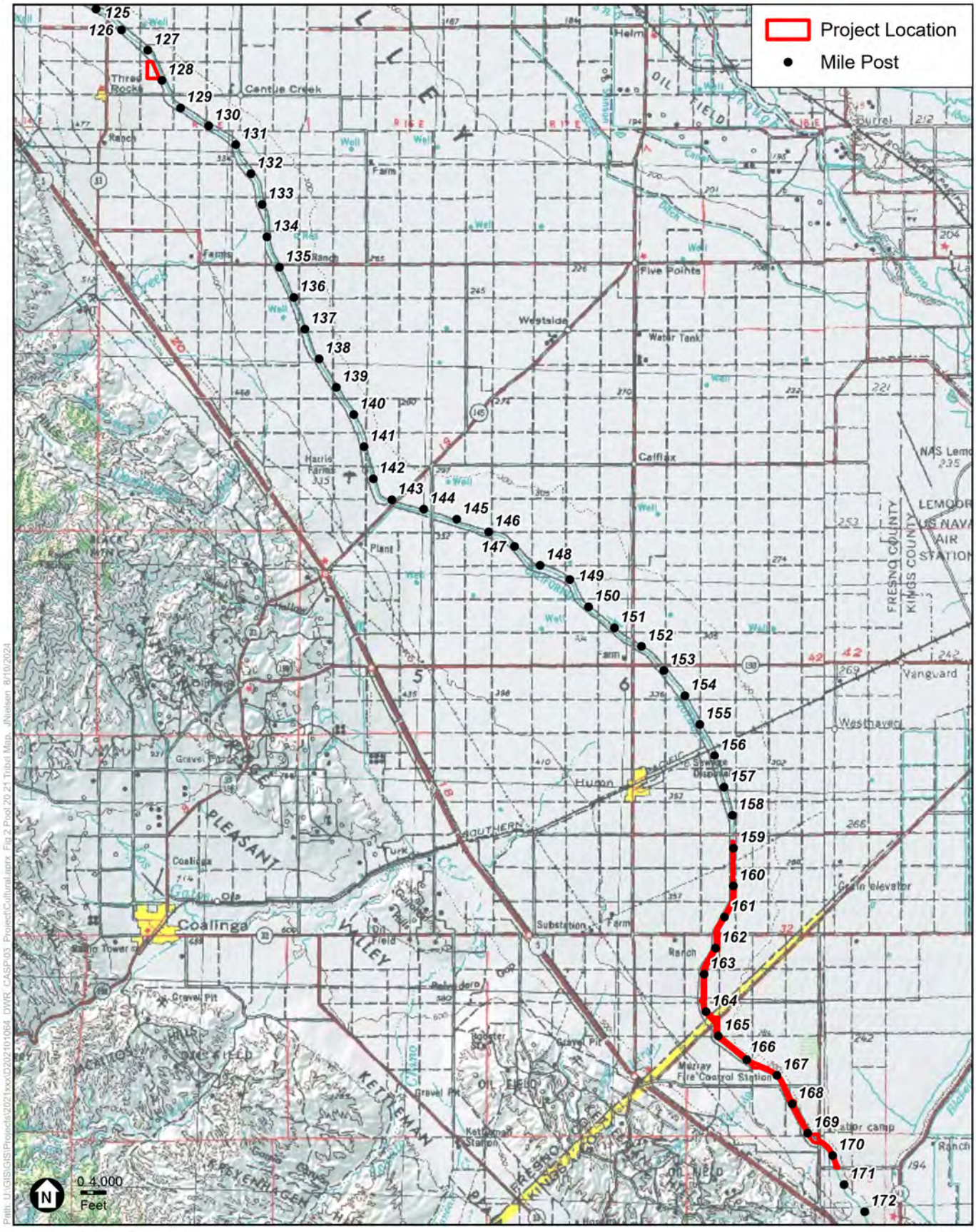
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024 Sent via certified mail

The Honorable Michelle Heredia-Cordova
Chairperson
Table Mountain Rancheria
P.O. Box 410
Friant, CA, 93626
mhcordova@tmr.org

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson Heredia-Cordova,

I hope this letter finds you well. I am writing on behalf of the Department of Water Resources (DWR), Division of Engineering (DOE). DOE works on design and construction projects through the State to maintain various elements of the State Water Project.

The Environmental Coordination Section (ECS) in DOE supports various aspects of environmental compliance of our division's work, including compliance with AB 52, and the DWR *Tribal Engagement Policy*. Currently, DOE's environmental team is supporting multiple projects of which the Table Mountain Rancheria (Tribe) has been identified as possible partner, consulting Tribe, or otherwise interested. For ease of review, and in furtherance of DWR goals of collaboration and transparency, we have consolidated consultation letters different projects into one envelope. My intention is to acknowledge the multiple consultation letters and provide consolidated communication where possible.

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- The Pool 24 Liner Raise Project is located adjacent to and to the north of Lost Hills, California, within Kern County, on the California Aqueduct.

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Marea Bell	*Main Point of Contact* Enviro. Planning Lead: • Pools 17&18 • Pools 20&21	Marea.Bell@water.ca.gov (916) 882-2945
Todd Wong	*Main Point of Contact* Enviro. Planning Lead: • Pool 24	Todd.Wong@water.ca.gov (916) 694-7811
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Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

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DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024

Sent via certified mail and email

The Honorable Michelle Heredia-Cordova
Chairperson
Table Mountain Rancheria
P.O. Box 410
Friant, CA, 93626
mhcordova@tmr.org

Subject: Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

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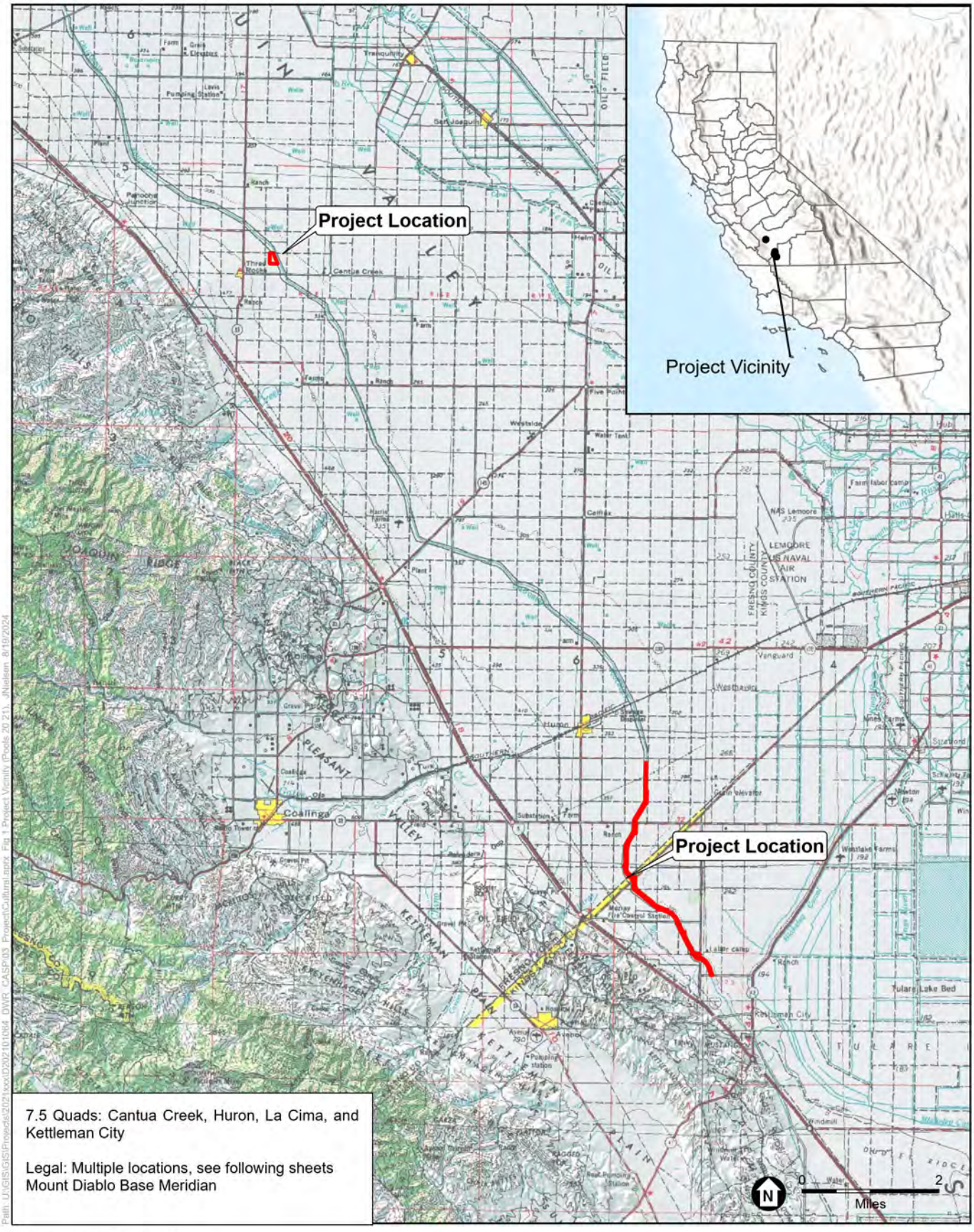


Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Bob Pennell, Cultural Resource Director, Table Mountain Rancheria
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
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Attachment 1. Project Vicinity Map
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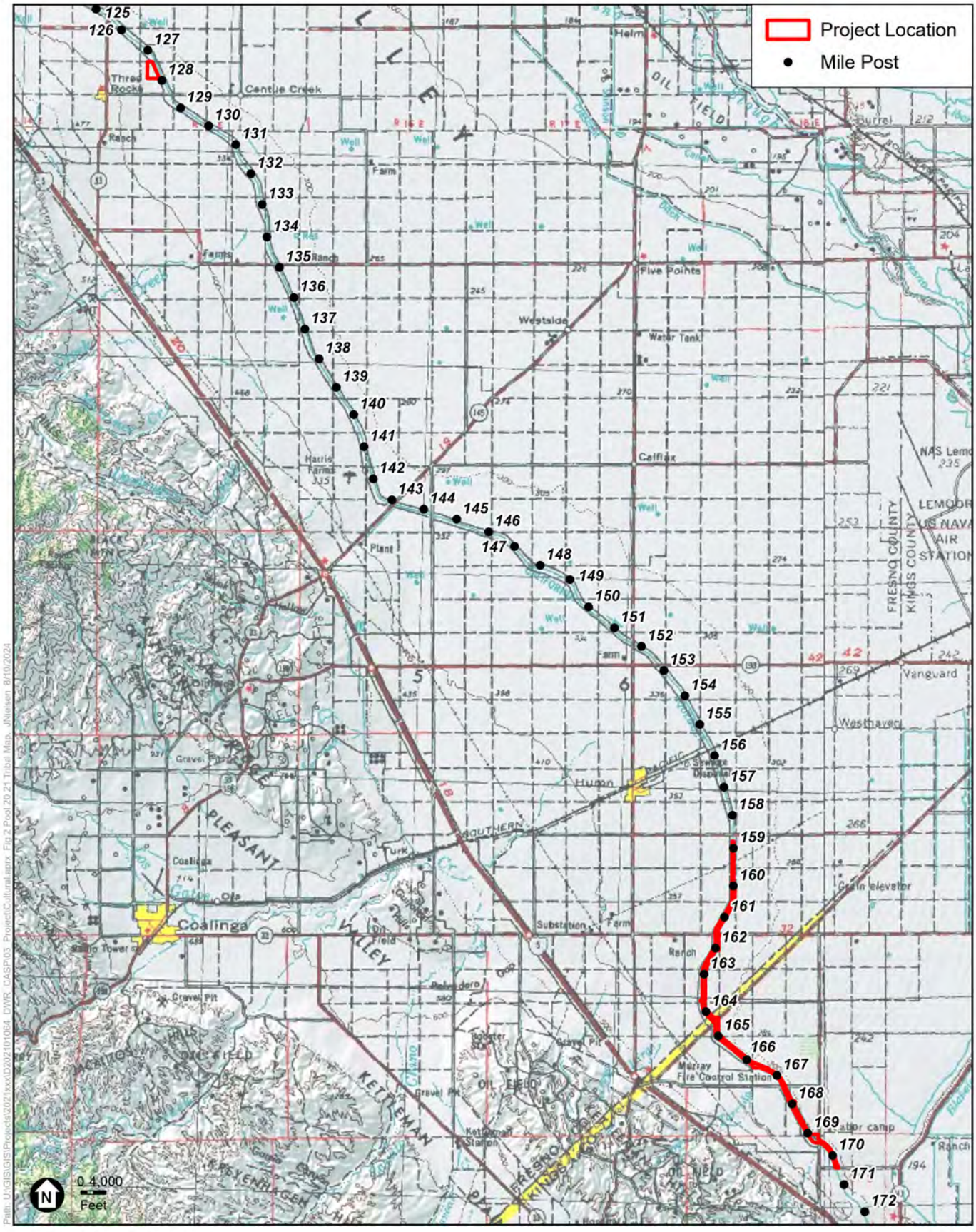
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024

Sent via certified mail

Honorable David Alvarez
Chairperson
Traditional Choinuymni Tribe
2415 E. Houston Ave.
Fresno, CA 93720
davealvarez@sbcglobal.net

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson Alvarez,

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Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

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DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024

Sent via certified mail and email

The Honorable David Alvarez,
Chairperson
Traditional Choinuymni Tribe
2415 E. Houston Ave.
Fresno, CA 93720
davealvarez@sbcglobal.net

Subject: Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

Dear Chairperson Alvarez,

This letter serves as a formal invitation to the Traditional Choinuymni Tribe (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, as depicted in the *Huron*, *California*, *Kettleman City*, *California*, and *La Cima*, *California* U.S. Geological Survey 7.5-minute topographic maps (see Attachments 1 and 2). DWR and the U.S. Bureau of Reclamation (Reclamation) are proposing to implement the Project jointly. DWR is the lead agency under the California Environmental Quality Act (CEQA) and is committed to working with the Tribe under DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

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It should be noted that because the Project is being jointly proposed by DWR and Reclamation, it is subject to federal environmental regulations, including the National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966 (NHPA). Reclamation is the lead federal agency for NEPA/NHPA purposes.

Conclusion

DWR is committed to working collaboratively with the Tribe to properly account for and manage resources important to the Tribe consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*. We welcome any recommendations regarding appropriate management or treatment of resources, including Tribal cultural resources, that occur within or near the Project Area. This notification does not limit the Tribe's ability to submit information regarding the identification or significance of Tribal cultural resources, the significance of the Project's potential impact on tribal cultural resources, or any appropriate mitigation measures

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(PRC §21080.3.2(c)(1)).

If the Tribe has any questions or needs additional information, please contact DWR Environmental Planning Lead Marea Bell at (916) 882-2945 or marea.bell@water.ca.gov, or DWR Office of Tribal Affairs Executive Manager Anecita Agustinez at (916) 216-8637 or tribalpolicyadvisor@water.ca.gov.

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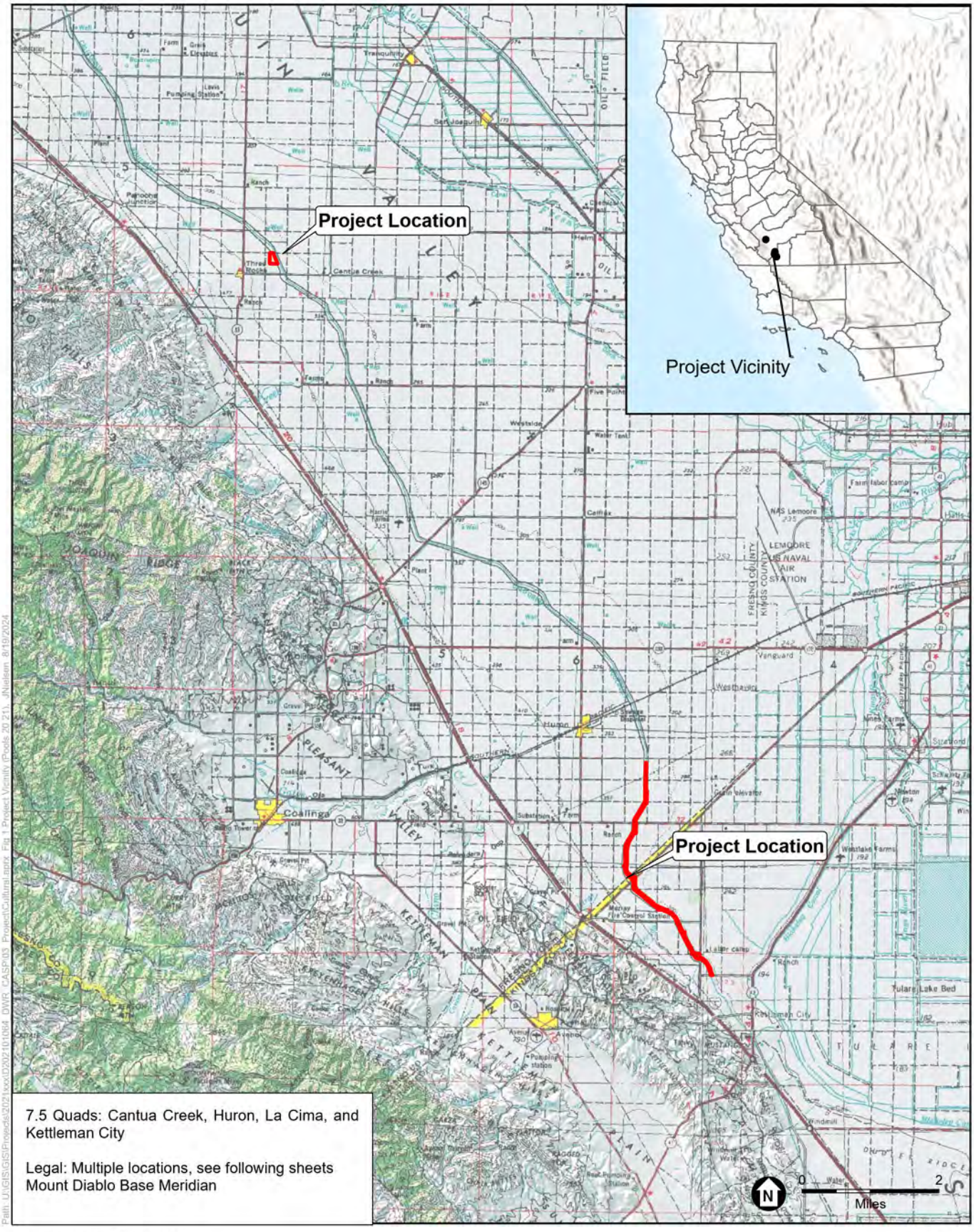
Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
Marea Bell, DWR Environmental Planning Lead

Attachment 1. Project Vicinity Map
Attachment 2. Project Location Map

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



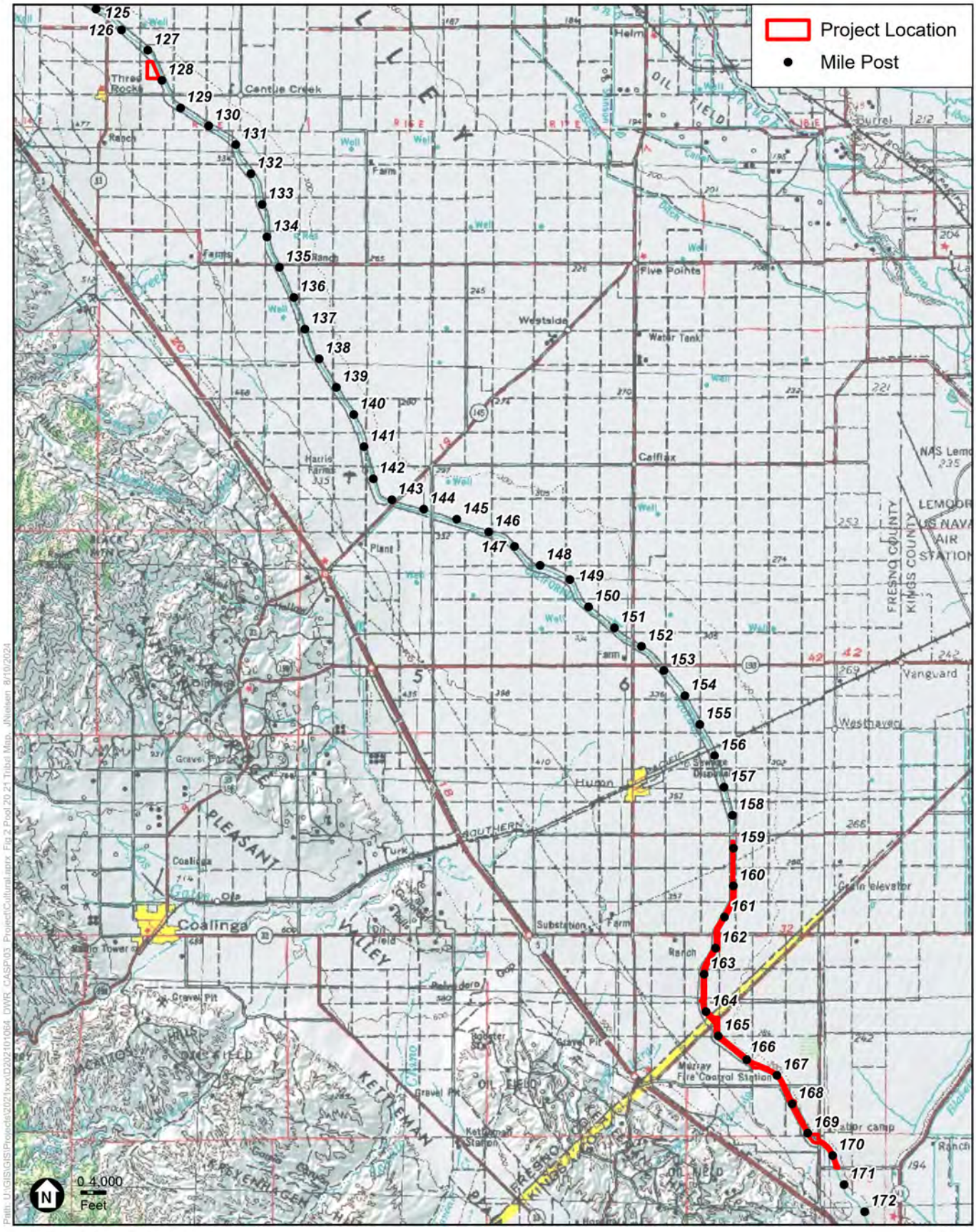
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

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SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024 Sent via certified mail

The Honorable Neil Peyron
Chairperson
Tule River Indian Tribe
P.O. Box 589
Porterville, CA, 93258
neil.peyron@tulerivertribe-nsn.gov

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson Peyron,

I hope this letter finds you well. I am writing on behalf of the Department of Water Resources (DWR), Division of Engineering (DOE). DOE works on design and construction projects through the State to maintain various elements of the State Water Project.

The Environmental Coordination Section (ECS) in DOE supports various aspects of environmental compliance of our division's work, including compliance with AB 52, and the DWR *Tribal Engagement Policy*. Currently, DOE's environmental team is supporting multiple projects of which the Tule River Indian Tribe (Tribe) has been identified as possible partner, consulting Tribe, or otherwise interested. For ease of review, and in furtherance of DWR goals of collaboration and transparency, we have consolidated consultation letters different projects into one envelope. My intention is to acknowledge the multiple consultation letters and provide consolidated communication where possible.

The consultation letters enclosed are related to the following projects.

- The Pools 17 and 18 Liner Raise Project is located approximately 12 miles west of Helm, California, within Fresno County, on the San Luis Canal. DWR and Reclamation are proposing to jointly implement this project.

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Sarah Cannon	ECS Manager	Sarah.Cannon@water.ca.gov (916) 882-2829
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Anecita Augustinez	DWR Office of Tribal Affairs	Anecita.Augustinez@water.ca.gov (916) 216-8637

Should you have any questions, comments, or concerns at any point, please do not hesitate to contact me directly, reach out to the designated project contact(s), or contact the DWR Tribal Office. We remain committed to partnering with you in a clear and cooperative manner, to properly account for and manage resources important to the Tribe, consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

Respectfully,

Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC

DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024

Sent via certified mail and email

The Honorable Neil Peyron
Chairperson
Tule River Indian Tribe
P.O. Box 589
Porterville, CA, 93258
neil.peyron@tulerivertribe-nsn.gov

Subject: Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

Dear Chairperson Peyron,

This letter serves as a formal invitation to the Tule River Indian Tribe (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, as depicted in the *Huron*, *California*, *Kettleman City*, *California*, and *La Cima*, *California* U.S. Geological Survey 7.5-minute topographic maps (see Attachments 1 and 2). DWR and the U.S. Bureau of Reclamation (Reclamation) are proposing to implement the Project jointly. DWR is the lead agency under the California Environmental Quality Act (CEQA) and is committed to working with the Tribe under DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

If the Tribe would like to consult under Assembly Bill (AB) 52, this is also notice DWR has not received an AB 52 request for notification from the Tribe and is an opportunity to ensure current and future engagement to consult under AB 52.

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The Project consists of raising, or extending, the existing concrete liner to the top of the unlined embankment of the San Luis Canal located in portions of Pools 20 and 21 (see Attachments 1 and 2), which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing the capacity and operational flexibility that has become limited due to subsidence while improving safety and reliability.

Brief Program Background
The San Luis Canal was constructed as a series of interconnected pools that are operated in coordination to convey water primarily by gravity from one pool to the next through check structures and pumping plants. The San Luis Canal traverses portions of the Central Valley that have experienced subsidence, which is defined as a local or

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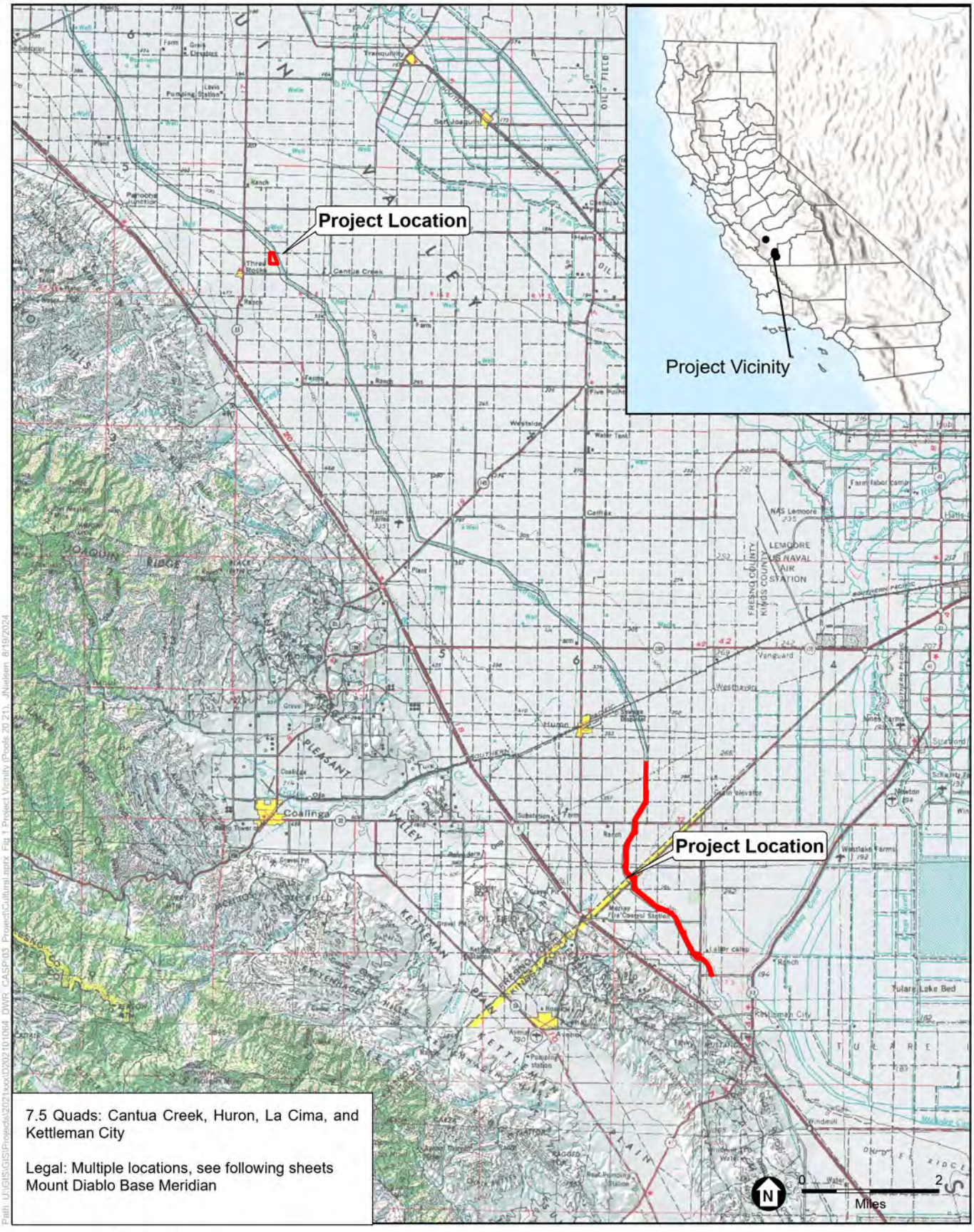
Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Kerri Vera, Environmental Department, Tule River Indian Tribe
Joey Garfield, Tribal Archaeologist, Tule River Indian Tribe
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
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Attachment 1. Project Vicinity Map
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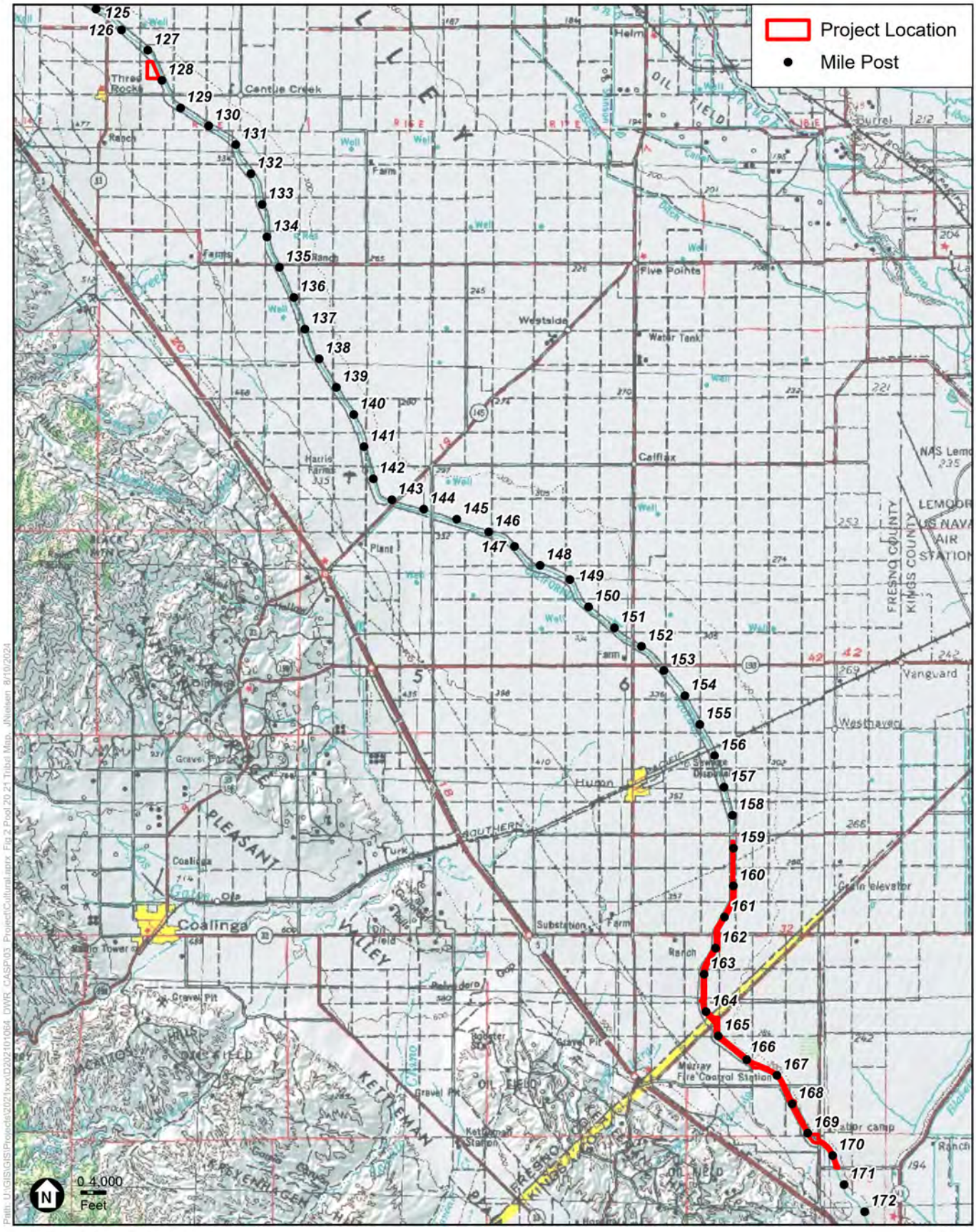
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

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CASP

Figure 2
Project Location

ESA

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DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024

Sent via certified mail

The Honorable Karen White
Chairperson
Xolon-Salinan Tribe
P.O. Box 7045
Spreckels, CA, 93962
xolon.salinan.heritage@gmail.com

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson White,

I hope this letter finds you well. I am writing on behalf of the Department of Water Resources (DWR), Division of Engineering (DOE). DOE works on design and construction projects through the State to maintain various elements of the State Water Project.

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Sarah Cannon
DWR – State Water Project: Division of Engineering
Environmental Coordination Section Manager

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DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024

Sent via certified mail and email

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Chairperson
Xolon-Salinan Tribe
P.O. Box 7045
Spreckels, CA, 93962
xolon.salinan.heritage@gmail.com

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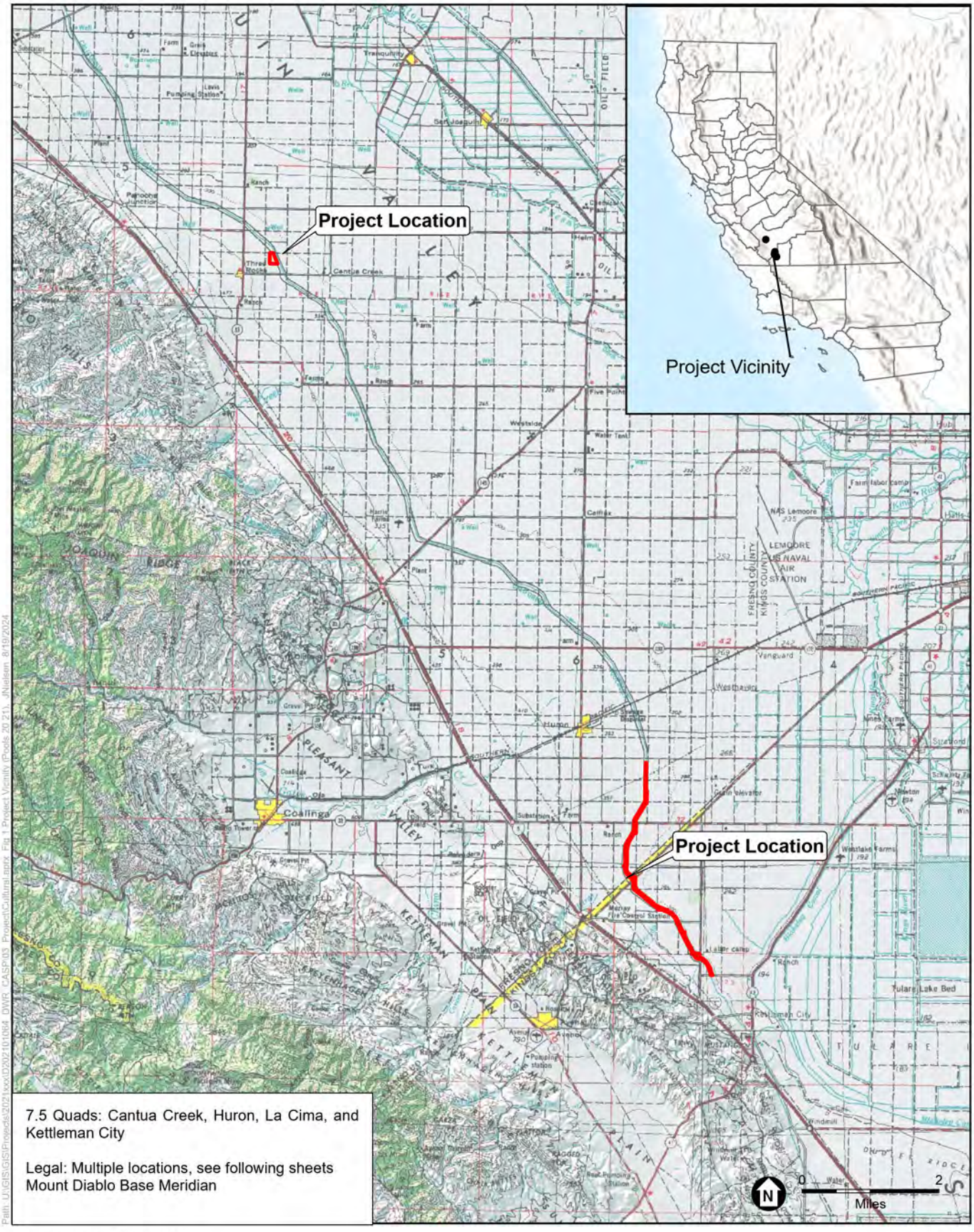
Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Penny Hurt, Cultural Preservation Administrator, Xolon-Salinan Tribe
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
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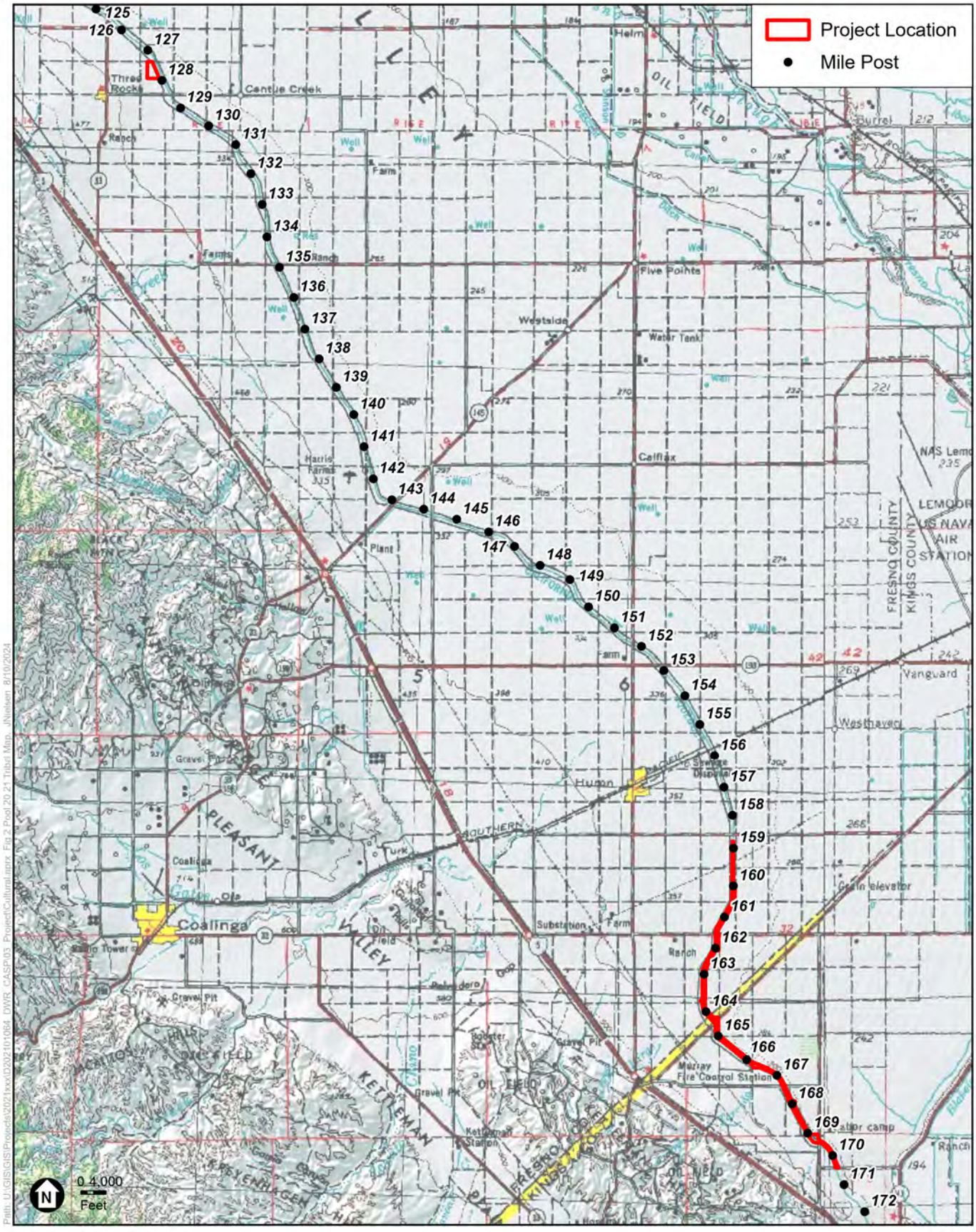
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

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SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

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DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Date: 10/10/2024 Sent via certified mail

The Honorable Kenneth Woodrow
Chairperson
Wuksachi Indian Tribe/Eshom Valley Band
1179 Rock Haven Ct.
Salinas, CA, 93906
kwood8934@aol.com

Subject: DWR Tribal Consultation Letters Enclosed

- **Pools 17 and 18 Liner Raise Project**
- **Pools 20 and 21 Liner Raise Project**
- **Pool 24 Liner Raise Project**

Dear Chairperson Woodrow,

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Sarah Cannon
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Environmental Coordination Section Manager

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DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

Date: 10/10/2024

Sent via certified mail and email

The Honorable Kenneth Woodrow
Chairperson
Wuksachi Indian Tribe/Eshom Valley Band
1179 Rock Haven Ct.
Salinas, CA, 93906
kwood8934@aol.com

Subject: Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

Dear Chairperson Woodrow,

This letter serves as a formal invitation to the Wuksachi Indian Tribe/Eshom Valley Band (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, as depicted in the *Huron*, *California*, *Kettleman City*, *California*, and *La Cima*, *California* U.S. Geological Survey 7.5-minute topographic maps (see Attachments 1 and 2). DWR and the U.S. Bureau of Reclamation (Reclamation) are proposing to implement the Project jointly. DWR is the lead agency under the California Environmental Quality Act (CEQA) and is committed to working with the Tribe under DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

If the Tribe would like to consult under Assembly Bill (AB) 52, this is also notice DWR has not received an AB 52 request for notification from the Tribe and is an opportunity to ensure current and future engagement to consult under AB 52.

T *Brief Overview of Project Description*
The Project consists of raising, or extending, the existing concrete liner to the top of the unlined embankment of the San Luis Canal located in portions of Pools 20 and 21 (see Attachments 1 and 2), which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing the capacity and operational flexibility that has become limited due to subsidence while improving safety and reliability.

Brief Program Background
The San Luis Canal was constructed as a series of interconnected pools that are operated in coordination to convey water primarily by gravity from one pool to the next through check structures and pumping plants. The San Luis Canal traverses portions of

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the Central Valley that have experienced subsidence, which is defined as a local or regional drop in ground surface elevation. This subsidence has reduced the San Luis Canal's delivery capability and reliability, as well as increased maintenance, repair, and energy costs.

This project is part of a larger CASP program, comprised of short term (or interim actions) and long-term corrective actions aimed to repair the San Luis Canal and the California Aqueduct. Additional information about the program and projects can be found here: https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence

Cultural Resources Investigations To-Date

Cultural resources investigations completed to date for the Project include the activities listed below. An *Archaeological and Architectural Resources Inventory Report* is currently being prepared for the project.

- California Native American Heritage Commission Sacred Lands File search request (no sacred sites identified)
- Records searches of the California Historical Resources Information System for the Project Area and vicinity (ten previously recorded cultural resources in the Project Area, eight of which are historic-era built environmental resources, and two of which are indigenous archaeological isolates)
- Intensive-level pedestrian survey of the Project Area (neither previously recorded archaeological resource relocated, but one newly recorded indigenous archaeological site and five newly recorded indigenous archaeological isolates identified)

CEQA Implementation

DWR is the lead agency under the CEQA and is proposing to prepare an Initial Study/Mitigated Negative Declaration for the Project. As part of the cultural resources review of the project under CEQA, we are writing to provide the Tribe an opportunity to submit any information the Tribe is willing to share about cultural resources or Tribal cultural resources as defined in California Public Resources Code (PRC) §21074, that may be near the proposed Project Area shown in Attachments 1 and 2. We understand that the locations of these resources are sensitive and resource locations will not be disclosed in public documents and will be kept confidential as provided for under California Government Code §6254.10.

It should be noted that because the Project is being jointly proposed by DWR and Reclamation, it is subject to federal environmental regulations, including the National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966 (NHPA). Reclamation is the lead federal agency for NEPA/NHPA purposes.

Conclusion

DWR is committed to working collaboratively with the Tribe to properly account for and manage resources important to the Tribe consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*. We welcome any recommendations regarding appropriate management or treatment of resources, including Tribal cultural resources, that occur within or near the Project Area. This notification does not limit the Tribe's ability to submit information regarding the identification or significance of Tribal cultural resources, the significance of the Project's

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potential impact on tribal cultural resources, or any appropriate mitigation measures (PRC §21080.3.2(c)(1)).

If the Tribe has any questions or needs additional information, please contact DWR Environmental Planning Lead Marea Bell at (916) 882-2945 or marea.bell@water.ca.gov, or DWR Office of Tribal Affairs Executive Manager Anecita Agustinez at (916) 216-8637 or tribalpolicyadvisor@water.ca.gov.

Information on the CASP Tribal Engagement activities can also be found here https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence/TribalEngagement.

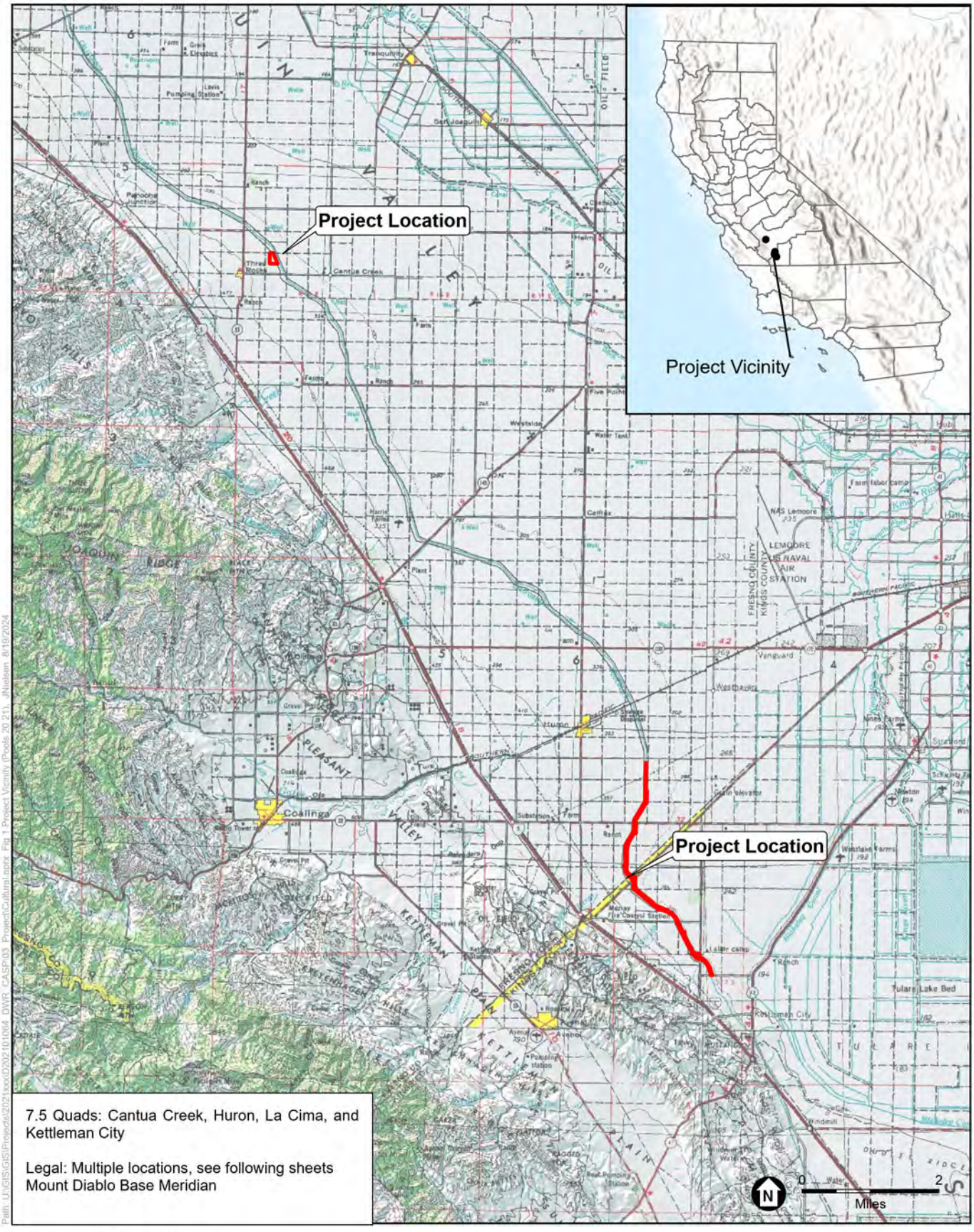
Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
Marea Bell, DWR Environmental Planning Lead

Attachment 1. Project Vicinity Map
Attachment 2. Project Location Map

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



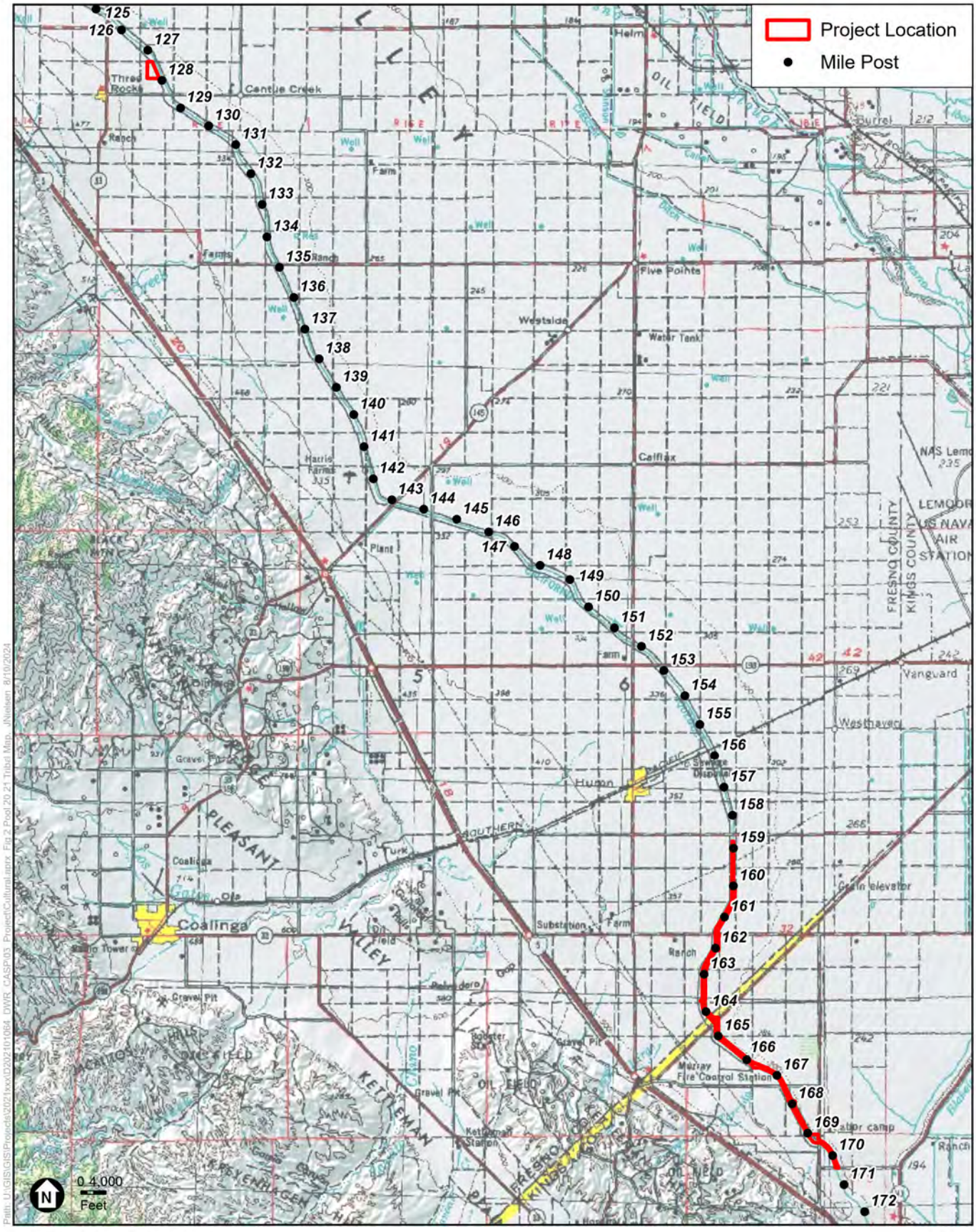
SOURCE: ESRI; DWR, 2024.

CASP

Figure 1
Project Vicinity

ESA

Docusign Envelope ID: 18AD45D2-1433-4203-84AA-1570EF44F2FC



SOURCE: USGS; DWR, 2024.

CASP

Figure 2
Project Location

ESA

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:16 PM
To: vjltestingcenter@aol.com
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR; aerieways@aol.com
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: AmahMutsun_CASP-Pools20-21_Letter.pdf

Dear Chairperson Lopez,

This letter serves as a formal invitation to the Amah Mutsun Tribal Band (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10. 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:16 PM
To: lkipp@bsrnation.com
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: BigSandyRancheria_CASP-Pools20-21_Letter.pdf

Dear Chairperson Kipp,

This letter serves as a formal invitation to the Big Sandy Rancheria of Western Mono Indians (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:16 PM
To: csrchair@netptc.net; coldsprgstribe@netptc.net
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: ColdSpringsRancheria_CASP-Pools20-21_Letter.pdf

Dear Chairperson Bill,

This letter serves as a formal invitation to the Cold Springs Rancheria of Mono Indians (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:16 PM
To: ledgerrobert@ymail.com
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: DumnaWoWah_CASP-Pools20-21_Letter.pdf

Dear Chairperson Ledger,

This letter serves as a formal invitation to the Dumna Wo-Wah Tribal Government (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:17 PM
To: ben.charley@yahoo.com
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR; dcharley2016@gmail.com
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: DunlapBand_CASP-Pools20-21_Letter.pdf

Dear Chairperson Charley,

This letter serves as a formal invitation to the Dunlap Band of Mono Indians (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:17 PM
To: 2deedominguez@gmail.com
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: KitanemukYowlumne_CASP-Pools20-21_Letter.pdf

Dear Chairperson Dominguez,

This letter serves as a formal invitation to the Kitanemuk & Yowlumne Tejon Indians (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:17 PM
To: huskanam@gmail.com
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: NVYOhloneTribe_CASP-Pools20-21_Letter.pdf

Dear Mr. Perez,

This letter serves as a formal invitation to the Northern Valley Yokut / Ohlone Tribe (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:17 PM
To: info@salinantribe.com
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR; quiggyllynn@gmail.com
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: SalinanTribe_CASP-Pools20-21_Letter.pdf

Dear Ms. Dunton,

This letter serves as a formal invitation to the Salinan Tribe of Monterey & San Luis Obispo Counties (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:17 PM
To: smccarty@tachi-yokut-nsn.gov
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR
Subject: AB-52 Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: SR-Ranch_CASP-Pools20-21_Letter_AB52.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Dear Chairperson Sisco,

This letter serves as a formal invitation to the Santa Rosa Rancheria Tachi Yokut Tribe (Tribe) to begin government-to-government consultation with the Department of Water Resources (DWR) under Assembly Bill 52 (AB 52), pursuant to Public Resources Code (PRC) §21080.3.1, on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:17 PM
To: mhcordova@tmr.org
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR; rpennell@tmr.org
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: TableMtRancheria_CASP-Pools20-21_Letter.pdf

Dear Chairperson Heredia-Cordova,

This letter serves as a formal invitation to the Table Mountain Rancheria (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:17 PM
To: davealvarez@sbcglobal.net
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: TradChoinuymni_CASP-Pools20-21_Letter.pdf

Dear Chairperson Alvarez,

This letter serves as a formal invitation to the Traditional Choinuymni Tribe (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:17 PM
To: neil.peyron@tulerivertribe-nsn.gov
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR; kerri.vera@tulerivertribe-nsn.gov; joey.garfield@tulerivertribe-nsn.gov
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: TuleRiver_CASP-Pools20-21_Letter.pdf

Dear Chairperson Peyron,

This letter serves as a formal invitation to the Tule River Indian Tribe (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:17 PM
To: kwood8934@aol.com
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: WuksachiIndian_CASP-Pools20-21_Letter.pdf

Dear Chairperson Woodrow,

This letter serves as a formal invitation to the Wuksachi Indian Tribe/Eshom Valley Band (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Friday, October 11, 2024 12:17 PM
To: xolon.salinan.heritage@gmail.com
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR; phurt6700@gmail.com
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: XolonSalinan_CASP-Pools20-21_Letter.pdf

Dear Chairperson White,

This letter serves as a formal invitation to the Xolon-Salinan Tribe (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Wednesday, November 13, 2024 12:22 PM
To: vjltestingcenter@aol.com
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR; aerieways@aol.com
Subject: RE: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: AmahMutsun_CASP-Pools20-21_Letter.pdf

Dear Chairperson Lopez,

The California Aqueduct Subsidence Program (CASP) distributed a formal invitation to the Amah Mutsun Tribal Band (Tribe) via email to consult on the Pools 20 and 21 Liner Raise Project on October 10, 2024.

Since that invitation (included below and attached for your reference) we became aware of new contact information for the Tribe and wanted to resend the invitation to the correct contact.
If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

-----Original Message-----
From: Dillon, Jesse@DWR <Jesse.Dillon@water.ca.gov>
Sent: Friday, October 11, 2024 12:07 PM
To: vjltestingcenter@aol.com
Cc: Agustinez, Anecita S.@DWR <Anecita.Agustinez@water.ca.gov>; Cannon, Sarah@DWR <Sarah.Cannon@water.ca.gov>; Bell, Marea@DWR <Marea.Bell@water.ca.gov>; Falke, Mariko@DWR <Mariko.Falke@water.ca.gov>; aerieways@aol.com
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 17 and 18 Liner Raise Project

Dear Chairperson Lopez,
This letter serves as a formal invitation to the Amah Mutsun Tribal Band (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10. 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program
California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

November 06, 2024 Sent via certified mail and email

The Honorable Katherine Erolinda Perez
Chairperson
Northern Valley Yokut / Ohlone Tribe
P.O. Box 717
Linden, CA, 95236
canutes@verizon.net

Subject: Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

Dear Chairperson Perez,

This letter serves as a formal invitation to the Northern Valley Yokut / Ohlone Tribe (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, as depicted in the *Huron*, *California*, *Kettleman City*, *California*, and *La Cima*, *California* U.S. Geological Survey 7.5-minute topographic maps (see Attachments 1 and 2). DWR and the U.S. Bureau of Reclamation (Reclamation) are proposing to implement the Project jointly. DWR is the lead agency under the California Environmental Quality Act (CEQA) and is committed to working with the Tribe under DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

If the Tribe would like to consult under Assembly Bill (AB) 52, this is also notice DWR has not received an AB 52 request for notification from the Tribe and is an opportunity to ensure current and future engagement to consult under AB 52.

Brief Overview of Project Description
The Project consists of raising, or extending, the existing concrete liner to the top of the unlined embankment of the San Luis Canal located in portions of Pools 20 and 21 (see Attachments 1 and 2), which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing the capacity and operational flexibility that has become limited due to subsidence while improving safety and reliability.

Brief Program Background
The San Luis Canal was constructed as a series of interconnected pools that are operated in coordination to convey water primarily by gravity from one pool to the next through check structures and pumping plants. The San Luis Canal traverses portions of

the Central Valley that have experienced subsidence, which is defined as a local or regional drop in ground surface elevation. This subsidence has reduced the San Luis Canal's delivery capability and reliability, as well as increased maintenance, repair, and energy costs.

This project is part of a larger CASP program, comprised of short term (or interim actions) and long-term corrective actions aimed to repair the San Luis Canal and the California Aqueduct. Additional information about the program and projects can be found here: https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence

Cultural Resources Investigations To-Date

Cultural resources investigations completed to date for the Project include the activities listed below. An *Archaeological and Architectural Resources Inventory Report* is currently being prepared for the project.

- California Native American Heritage Commission Sacred Lands File search request (no sacred sites identified)
- Records searches of the California Historical Resources Information System for the Project Area and vicinity (ten previously recorded cultural resources in the Project Area, eight of which are historic-era built environmental resources, and two of which are indigenous archaeological isolates)
- Intensive-level pedestrian survey of the Project Area (neither previously recorded archaeological resource relocated, but one newly recorded indigenous archaeological site and five newly recorded indigenous archaeological isolates identified)

CEQA Implementation

DWR is the lead agency under the CEQA and is proposing to prepare an Initial Study/Mitigated Negative Declaration for the Project. As part of the cultural resources review of the project under CEQA, we are writing to provide the Tribe an opportunity to submit any information the Tribe is willing to share about cultural resources or Tribal cultural resources as defined in California Public Resources Code (PRC) §21074, that may be near the proposed Project Area shown in Attachments 1 and 2. We understand that the locations of these resources are sensitive and resource locations will not be disclosed in public documents and will be kept confidential as provided for under California Government Code §6254.10.

It should be noted that because the Project is being jointly proposed by DWR and Reclamation, it is subject to federal environmental regulations, including the National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966 (NHPA). Reclamation is the lead federal agency for NEPA/NHPA purposes.

Conclusion

DWR is committed to working collaboratively with the Tribe to properly account for and manage resources important to the Tribe consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*. We welcome any recommendations regarding appropriate management or treatment of resources, including Tribal cultural resources, that occur within or near the Project Area. This notification does not limit the Tribe's ability to submit information regarding the identification or significance of Tribal cultural resources, the significance of the Project's

potential impact on tribal cultural resources, or any appropriate mitigation measures (PRC §21080.3.2(c)(1)).

If the Tribe has any questions or needs additional information, please contact DWR Environmental Planning Lead Marea Bell at (916) 882-2945 or marea.bell@water.ca.gov, or DWR Office of Tribal Affairs Executive Manager Anecita Agustinez at (916) 216-8637 or tribalpolicyadvisor@water.ca.gov.

Information on the CASP Tribal Engagement activities can also be found here https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence/TribalEngagement.

Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Timothy Perez, Tribal Compliance Officer, Northern Valley Yokut / Ohlone Tribe
Erolinda Perez, Administrative Assistant, Northern Valley Yokut / Ohlone Tribe
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
Marea Bell, DWR Environmental Planning Lead

Attachment 1. Project Vicinity Map
Attachment 2. Project Location Map

DEPARTMENT OF WATER RESOURCES
715 P STREET
SACRAMENTO, CA 95814

November 06, 2024 Sent via certified mail and email

The Honorable Charmaine McDarment
Chairperson
Tule River Indian Tribe
340 N. Reservation Road
Porterville, CA, 93258
Charmaine.McDarment@tulerivertribe-nsn.gov

Subject: Notification for the California Aqueduct Subsidence Program - San Luis Field Division: Pools 20 and 21 Liner Raise Project

Dear Chairperson McDarment,

This letter serves as a formal invitation to the Tule River Indian Tribe (Tribe) to begin consultation with the Department of Water Resources (DWR) on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties, as depicted in the *Huron*, *California*, *Kettleman City*, *California*, and *La Cima*, *California* U.S. Geological Survey 7.5-minute topographic maps (see Attachments 1 and 2). DWR and the U.S. Bureau of Reclamation (Reclamation) are proposing to implement the Project jointly. DWR is the lead agency under the California Environmental Quality Act (CEQA) and is committed to working with the Tribe under DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*.

If the Tribe would like to consult under Assembly Bill (AB) 52, this is also notice DWR has not received an AB 52 request for notification from the Tribe and is an opportunity to ensure current and future engagement to consult under AB 52.

Brief Overview of Project Description
The Project consists of raising, or extending, the existing concrete liner to the top of the unlined embankment of the San Luis Canal located in portions of Pools 20 and 21 (see Attachments 1 and 2), which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to complete water deliveries to the Public Water Agencies, thereby increasing the capacity and operational flexibility that has become limited due to subsidence while improving safety and reliability.

Brief Program Background
The San Luis Canal was constructed as a series of interconnected pools that are operated in coordination to convey water primarily by gravity from one pool to the next through check structures and pumping plants. The San Luis Canal traverses portions of the Central Valley that have experienced subsidence, which is defined as a local or regional drop in ground surface elevation. This subsidence has reduced the San Luis

Canal's delivery capability and reliability, as well as increased maintenance, repair, and energy costs.

This project is part of a larger CASP program, comprised of short term (or interim actions) and long-term corrective actions aimed to repair the San Luis Canal and the California Aqueduct. Additional information about the program and projects can be found here: https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence

Cultural Resources Investigations To-Date

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It should be noted that because the Project is being jointly proposed by DWR and Reclamation, it is subject to federal environmental regulations, including the National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966 (NHPA). Reclamation is the lead federal agency for NEPA/NHPA purposes.

Conclusion

DWR is committed to working collaboratively with the Tribe to properly account for and manage resources important to the Tribe consistent with DWR's *Tribal Engagement Policy* and the California Natural Resources Agency's *Tribal Consultation Policy*. We welcome any recommendations regarding appropriate management or treatment of resources, including Tribal cultural resources, that occur within or near the Project Area. This notification does not limit the Tribe's ability to submit information regarding the identification or significance of Tribal cultural resources, the significance of the Project's potential impact on tribal cultural resources, or any appropriate mitigation measures (PRC §21080.3.2(c)(1)).

If the Tribe has any questions or needs additional information, please contact DWR Environmental Planning Lead Marea Bell at (916) 882-2945 or marea.bell@water.ca.gov, or DWR Office of Tribal Affairs Executive Manager Anecita Agustinez at (916) 216-8637 or tribalpolicyadvisor@water.ca.gov.

Information on the CASP Tribal Engagement activities can also be found here https://water.ca.gov/Programs/Engineering-And-Construction/Subsidence/TribalEngagement.

Respectfully,

Jesse Dillon, P.E.
CASP Program Manager, DWR – State Water Project: Division of Engineering

cc.
Kerri Vera, Environmental Department, Tule River Indian Tribe
Joey Garfield, Tribal Archaeologist, Tule River Indian Tribe
Anecita Augustinez, DWR Office of Tribal Affairs Executive Tribal Policy Advisor
Mariko Falke, DWR Office of Tribal Affairs Executive Tribal Liaison
Sarah Cannon, DWR Environmental Coordination Section Manager
Marea Bell, DWR Environmental Planning Lead

Attachment 1. Project Vicinity Map
Attachment 2. Project Location Map

Robin Hoffman

From: Dillon, Jesse@DWR
Sent: Wednesday, November 13, 2024 12:22 PM
To: lsisco@tachi-yokut-nsn.gov
Cc: Agustinez, Anecita S.@DWR; Cannon, Sarah@DWR; Bell, Marea@DWR; Falke, Mariko@DWR; smccarty@tachi-yokut-nsn.gov; nescalon@tachi-yokut-nsn.gov
Subject: RE: AB-52 Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 20 and 21 Liner Raise Project
Attachments: SR-Ranch_CASP-Pools20-21_Letter_AB52.pdf

Dear Chairperson Sisco,

The California Aqueduct Subsidence Program (CASP) distributed a formal invitation to the Santa Rosa Rancheria Tachi Yokut Tribe (Tribe) to begin government-to-government consultation with the Department of Water Resources (DWR) under Assembly Bill 52 (AB 52), pursuant to Public Resources Code (PRC) §21080.3.1, on the proposed Pools 20 and 21 Liner Raise Project on October 10, 2024.

Since that invitation (included below and attached for your reference) we became aware of new contact information for the Tribe and wanted to resend the invitation to the correct contact.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814

-----Original Message-----
From: Dillon, Jesse@DWR <Jesse.Dillon@water.ca.gov>
Sent: Friday, October 11, 2024 12:07 PM
To: smccarty@tachi-yokut-nsn.gov
Cc: Agustinez, Anecita S.@DWR <Anecita.Agustinez@water.ca.gov>; Cannon, Sarah@DWR <Sarah.Cannon@water.ca.gov>; Bell, Marea@DWR <Marea.Bell@water.ca.gov>; Falke, Mariko@DWR <Mariko.Falke@water.ca.gov>
Subject: Notification for the California Aqueduct Subsidence Program San Luis Field Division Pools 17 and 18 Liner Raise Project

Dear Chairperson Sisco,

This letter serves as a formal invitation to the Santa Rosa Rancheria Tachi Yokut Tribe (Tribe) to begin government-to-government consultation with the Department of Water Resources (DWR) under Assembly Bill 52 (AB 52), pursuant to Public Resources Code (PRC) §21080.3.1, on the proposed California Aqueduct Subsidence Program (CASP) San Luis Field Division (SLFD) Pools 20 and 21 Liner Raise Project (Project). The Project is located approximately 3 miles north of Kettleman City, California, within Fresno and Kings Counties. The Project is an interim action and consists of raising the concrete liner to the top of the unlined embankment located in portions of Pools 20 and 21, which would allow the water surface elevation under existing standard operating limitations to be raised. This Project would enable DWR to

complete water deliveries to the Public Water Agencies, thereby increasing operational flexibility that has become limited due to subsidence and improving safety and reliability.

Attached is the formal notification of the Project sent by DWR on October 10, 2024.

If the Tribe has any questions or needs additional information, please contact the California Aqueduct Subsidence Program at casp@water.ca.gov.

Respectfully,
Jesse J. Dillon, P.E.
Program Manager – California Aqueduct Subsidence Program
California Department of Water Resources, State Water Project, Division of Engineering
715 P Street, 4th Floor, Sacramento, CA 95814