Administrative Draft
Cantua Creek Stream Group Improvements Project
Initial Study/Proposed Mitigated Negative Declaration

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INITIAL STUDY/PROPOSED MITIGATED NEGATIVE DECLARATION

PROJECT: Cantua Creek Stream Group Improvements Project

LEAD AGENCY: California Department of Water Resources (DWR)

Contact person and phone number: Ted Alvarez, Supervising Engineer, State Water Project Analysis Office, (916) 653-6271

AVAILABILITY OF DOCUMENTS: The initial study and proposed mitigated negative declaration (IS/Proposed MND) is available for review at 1416 Ninth Street, Room 1620, Sacramento, California 95814 and at 3374 East Shields Avenue, Fresno, California 93726, during normal business hours and on DWR's website at: http://www.water.ca.gov/.

Project Location: Western Fresno County near Coalinga, California

General Plan Designation: Agricultural

Zoning: Agricultural-40 (Fresno County)

PROJECT DESCRIPTION:
The Cantua Creek Stream Group Improvements Project (Proposed Project) is located on the western edge of Fresno County about 18 miles north of the City of Coalinga and 36 miles southwest of Fresno. In 1967, the U.S. Bureau of Reclamation (Reclamation) completed construction of the portion of the California Aqueduct called the San Luis Canal (Canal), which spans 102.5 miles from O'Neill Forebay near Los Banos, to just west of Kettleman City.

The Canal was designed to convey water to both agricultural users and municipal and industrial users. It was built with drain inlet structures to route floodwaters, originating from the west of the Canal, into the Canal. The original ponding basin included two flood easement areas to allow ponding and sediment deposition from Cantua and Salt Creeks. The original flood easement areas included a 490-acre area between Mt. Whitney and Cerini Avenues and a 183-acre area between Parkhurst and Mt. Whitney Avenues. As a result of flood claims from the 1995 flood, an additional 740 acres of flood easements were acquired in the basin. Original facilities included the Cantua Creek drain inlet at Harlan Avenue and the Salt Creek drain inlet at Laguna Avenue. Other facilities that were subsequently constructed to move flows into the Canal include the Cantua Creek flume at Mount Whitney Avenue in 1972, elevated earthen pumping areas (pump pads) for placement of temporary pumps, and the Salt Creek weir at Mount Whitney Avenue in 1999.

The original ponding basins and drains were intended to protect the Canal from floodwaters resulting from a 50-year flood and to accommodate sediment deposition in the basins. Hydrologic models of the area were revised in the aftermath of the large floods that occurred in 1969, 1983, and 1995. A DWR feasibility-level hydrologic analysis completed in April 2011 determined that additional flood easements and modifications to embankments, roads, and pump pads are needed to protect the integrity of the Canal from a 50-year flood risk.

The Proposed Project includes improving storage in the ponding basins through flood easement acquisition and raising the Canal embankment and adjacent roads. The work would include the following main elements:

- Acquiring approximately 860 acres of new flood easements to complement the existing flood easements
- Raising various sections of the Canal embankment to provide basin storage
- Raising and repaving a section of Clarkson Avenue and raising a section of unpaved Oakland Avenue, both at the Canal
- Construction of embankments around four Westland Water District (WWD) turnout facilities
- Raising six pump pads used for placement of temporary floodwater pumps
- Removing sediment buildup along several drainage features along the Canal as well as within existing flowage easements to restore floodwater holding capacity
- Constructing an approximate 350-foot-long by 100-foot-wide concrete weir in the existing Canal operations road north of Jeffrey Avenue
- Using the removed sediment for the various embankment and road raising activities as well as the other construction features

Other agencies whose approval may be required:

- California Department of Fish and Wildlife
- Fresno County Public Works and Planning
- San Joaquin Valley Air Pollution Control District
- State Water Resources Control Board

A copy of the IS/Proposed MND is attached. Questions or comments regarding this IS/Proposed MND may be addressed to:

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Determination:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the

earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARTION 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.

_____ _____

Robert Cooke, Chief
State Water Project Analysis Office
State Water Project
California Department of Water Resources

Date

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ABBREVIATIONS AND ACRONYMS

µin/sec	microinch per second
BMP	best management practices
BO	Biological Opinion
Canal	California Aqueduct/San Luis Canal
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CCIC	Central California Information Center
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CRHR	California Register of Historic Resources
CVP	Central Valley Project
dBA	A-weighted sound (decibel) level
DOC	California Department of Conservation
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EI	Expansion Index
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FPD	Fire Protection District
FTA	Federal Transit Administration
GHG	Greenhouse Gas
HCP	Habitat Conservation Plan
HTRW	Hazardous, Toxic, or Radioactive Waste
I-5	Interstate 5
in/sec	inches per second
IS/Proposed MND	Initial Study/Proposed Mitigated Negative Declaration
ITP	Incidental Take Permit
LESA	Land Evaluation and Site Assessment
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act of 1918
MFHSZ	Moderate Fire Hazard Severity Zones
MLD	Most Likely Descendent
MRZs	Mineral Resource Zones
MP	Mile Post
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission

NCCP	Natural Communities Conservation Plan
NMFS	National Marine Fisheries Service
NOA	Naturally Occurring Asbestos
NOI	Notice of Intent
NO_X	oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Natural Resources Conservation Service
OAP	Ozone Attainment Plan
OES	Office of Emergency Services
PM_{10}	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less
ppm	parts per million
Reclamation	U.S. Bureau of Reclamation
ROG	reactive organic gases
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SCS	Soil Conservation Service
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
Canal	California Aqueduct/San Luis Canal
SMARA	California Surface Mining and Reclamation Act
SO_X	oxides of sulfur
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
tpy	tons per year
USACE	U.S. Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VDE	Visible Dust Emissions
vibration decibels	VdB referenced to 1 microinch per second and based on the root mean square
VMT	Vehicle Miles Traveled
WWD	Westlands Water District

Part 1. INTRODUCTION

The California Department of Water Resources (DWR) has prepared this Draft Initial Study/Proposed Mitigated Negative Declaration (IS/Proposed MND) in compliance with the California Environmental Quality Act (CEQA) to address the environmental consequences of the proposed Cantua Creek Stream Group Improvements Project (Proposed Project). DWR is the lead agency under CEQA.

The Proposed Project is authorized and sponsored by DWR's State Water Project Analysis Office.

This document includes:

- an IS to satisfy CEQA requirements;
- Proposed MND to satisfy CEQA requirements; and
- a notice of availability and notice of intent to adopt an IS/Proposed MND for the Proposed Project.

After completion of the required public review of this document, DWR intends to adopt the Proposed MND and the Mitigation Monitoring Reporting Program and to approve the Proposed Project.

1.1 Purpose of the Initial Study/Proposed Mitigated Negative Declaration

This document is an IS/Proposed MND prepared in accordance with the *CEQA Public Resources Code* §21000 et seq. and the *State CEQA Guidelines, Title 14 California Code of Regulations (CEQA Guidelines)* Section 15000 et seq. The purpose of this IS/Proposed MND is to: (1) determine whether project implementation would result in potentially significant or significant effects to the environment and (2) incorporate mitigation measures into the Proposed Project design, as necessary, to eliminate the project's potentially significant or significant project effects or reduce them to a less-than-significant level. An IS/Proposed MND presents the environmental analysis and substantial evidence supporting its conclusions regarding the significance of environmental impacts. Substantial evidence may include expert opinion based on facts, technical studies, or reasonable assumptions based on facts. An IS/Proposed MND is not intended nor required to include the level of detail used in an Environmental Impact Report (EIR).

CEQA requires that all State and local government agencies consider the environmental consequences of projects they propose to carry out, or over which they have discretionary authority, before implementing or approving those projects. Under the *CEQA Guidelines*, § 15367, DWR has principal responsibility for carrying out the Proposed Project and is therefore the CEQA lead agency for this IS/Proposed MND.

As specified in the *CEQA Guidelines* Section 15064, subd. (a), if there is substantial evidence (such as the results of an IS) that a project, either individually or cumulatively, may have a significant effect on the environment, the lead agency must prepare an EIR. The lead agency may instead prepare a Negative Declaration if it determines there is no substantial evidence that the project may cause a significant impact

on the environment. The lead agency may prepare an MND if, in the course of the IS analysis, it is recognized that the project may have a significant impact on the environment but that implementing specific mitigation measures would reduce any such impacts to a less-than-significant level (*CEQA Guidelines*, § 15064, subd. (f)(2)).

DWR has prepared this IS to evaluate the potential environmental effects of the Proposed Project and has incorporated mitigation measures to reduce or eliminate any potentially significant project-related impacts. Therefore, a Proposed MND has been prepared for this project.

The United Stated Bureau of Reclamation (Reclamation), which is a partner in the Proposed Project, will also be preparing a separate environmental document pursuant to the National Environmental Policy Act. Reclamation, through a cooperative agreement with DWR, plans to fund a portion of the Proposed Project and eventually be assigned the land rights (both easement and fee) acquired by DWR due to the fact that the proposed improvements are located within the Central Valley Project portion of the California Aqueduct.

1.2 Summary of Findings

Part 3 of this document contains the analysis and discussion of potential environmental impacts of the Proposed Project. Based on the issues evaluated in Part 3, it was determined that the Proposed Project would have no impacts related to the following issue areas:

- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services

The Proposed Project would result in less-than-significant impacts on the following issue areas:

- Air Quality
- Aesthetics
- Agriculture and Forestry Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Recreation
- Utilities and Service Systems

The Proposed Project would result in less-than-significant impacts *following* mitigation on the following issue areas:

- Biological Resources
- Cultural Resources
- Hazards and Hazardous Materials
- Noise
- Transportation/Traffic
- Mandatory Findings of Significance

1.3 Document Organization

This document is divided into the following sections:

Notice of Availability and Notice of Intent to Adopt an IS/Proposed MND. The Notice of Availability and Notice of Intent to Adopt an IS/Proposed MND provides notice to responsible and trustee agencies, interested parties, and organizations of the availability of this IS, as well as DWR's intent to adopt an IS/Proposed MND for the Proposed Project.

Proposed MND. The Proposed MND, which precedes the IS analysis, summarizes the environmental conclusions and identifies mitigation measures that would be implemented in conjunction with the Proposed Project. The Proposed MND would be signed by a representative of DWR.

Part 1 – Introduction. This provides an introduction to the project, purpose of the IS/Proposed MND, summary of findings, and organization of this IS/Proposed MND.

Part 2 – Project Description. This chapter describes 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 implementations, as well as general background.

Part 3 – Environmental Setting, Impacts, and Mitigation Measures. This chapter presents an analysis of environmental issues identified in the CEQA Environmental Checklist and determines if project implementation would result in no impact, a less-than-significant impact, a less-than-significant impact with mitigation incorporated, or a potentially significant impact on the environment in each of the issue areas. If any impacts were determined to be potentially significant, an EIR would be required. For this project, however, mitigation measures have been incorporated where needed to reduce all potentially significant impacts to a less-than-significant level.

Part 4 – References. This chapter lists the references used in preparation of this IS/Proposed MND.

Part 5 – List of Preparers. This chapter identifies report preparers.

Part 2. PROJECT DESCRIPTION

2.1 Location and Background

The Cantua Creek Stream Group (CCSG) watershed originates on the eastern side of the California Coast Range. It has a drainage area of 201 square miles. Elevations range from 315 feet near the California Aqueduct/San Luis Canal (Canal) to over 5,100 feet at Santa Rita Peak (Figure 1).

Land in the upper watershed is mainly used for cattle and sheep grazing. Land use on the alluvial fan is dominated by irrigated agriculture. The most common crops in the lower watershed are lettuce, cotton, onions, tomatoes, and cantaloupes. Wheat, barley, garlic, pistachios, and almonds are also grown in this general area.

The watershed consists of five major creeks: Arroyo Hondo, Cantua, Salt, Martinez, and Domengine Creeks. These creeks drain a portion of the Coast Range and generally flow easterly into the western San

Joaquin Valley. Presently, floodwaters from these creeks terminate at four locations, or basins, along an approximate 13-mile stretch of the Canal, with Martinez Creek flowing into Salt Creek about 3 miles upstream of the Canal (Figure 1). The basins are described in more detail in Section 2.3. The large drainage channels can carry significant floodwater and sediment volumes to the Canal basins and subsequently into the Canal.

The project area for the Proposed Project is located along the west side of the 13-mile stretch of the Canal that receives floodwaters in western Fresno County between Clarkson Avenue and Oakland Avenue, approximately 36 miles southwest of Fresno and 18 miles north of the City of Coalinga.

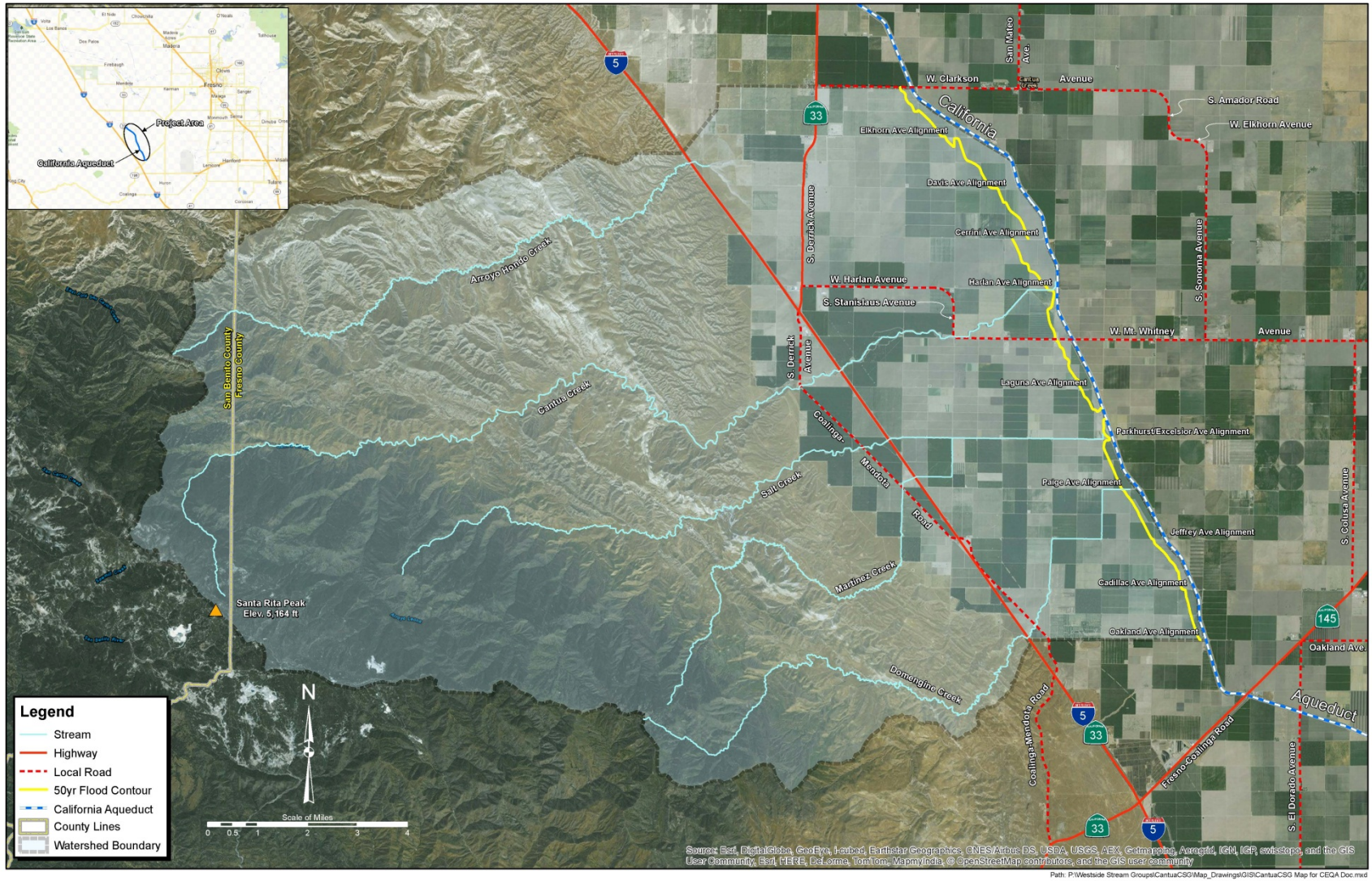

Figure 1: Project Location and Watershed Boundary

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In 1967, Reclamation completed construction of the portion of the California Aqueduct called the San Luis Canal (Canal), which spans 102.5 miles from check 13 at the O'Neill Forebay near Los Banos to check 21 west of Kettleman City. This section is a concrete-lined canal with a capacity ranging from 8,350 to 13,100 cubic feet per second (cfs). It serves both the State Water Project (SWP) and the federal Central Valley Project.

The Canal was designed to convey water to both agricultural users and municipal and industrial users. It was built with drain inlet structures, originating west of the Canal, to route floodwaters into the Canal. The original ponding basin included two flood easement areas to allow ponding and sediment deposition from Cantua and Salt Creeks. The original flood easement areas included a 490-acre area between Mt. Whitney and Cerini Avenues and a 183-acre area between Parkhurst and Mt. Whitney Avenues. As a result of flood claims from the 1995 flood, an additional 740 acres of flood easements were acquired in the basin. Original facilities included the Cantua Creek drain inlet at Harlan Avenue and the Salt Creek drain inlet at Laguna Avenue. Other facilities that were subsequently constructed to move flows into the Canal include the Cantua Creek flume at Mount Whitney Avenue in 1972, elevated earthen pumping areas (pump pads) for placement of temporary pumps, and the Salt Creek weir at Mount Whitney Avenue in 1999.

As early as 1969, large runoff and sediment volumes from Cantua and Salt Creeks indicated that the original hydrologic and sediment transport estimates were significantly underestimated and that existing flood control measures for the CCSG watershed are insufficient to handle large floods. Flooding in the watershed resulted in ponding of floodwater along a 13-mile stretch of the Canal. Two significant storms sent a total of 3,600 acre feet of floodwaters from all five creeks into the Canal during January and February of 1969. The peak discharge on record for Cantua Creek is 3,400 cfs (March 1, 1983), when approximately 4,800 acre feet of floodwater entered the Canal. However, the most damaging flood in the watershed occurred in March 1995 when flows from Cantua and Salt Creeks overtopped the Canal embankments at Mount Whitney Avenue, causing damage to over 600 feet of the Canal liner and depositing over 750,000 cubic yards of sediment into the Canal. Removal of the sediment cost millions of dollars. Large floods pose an increasing threat to the integrity, supply reliability, and water quality of the Canal and present an annual operation and maintenance challenge to DWR staff, creating a continuous demand for expenditures and resources. In the absence of improvements, future floods would continue to pose a threat to the integrity, supply reliability, and water quality of the Canal. A DWR feasibility-level hydrologic analysis completed in April 2011 determined that additional flood easements and modifications to embankments, roads, and pump pads are needed to protect the integrity of the Canal from a 50-year flood risk.

2.2 Description of Proposed Project

For the purpose of the Proposed Project, the land west of the Canal that stores CCSG floodwaters has been divided into four basins (Figures 2 and 3). The basins are bounded by the Canal embankment to the east and existing private and public roads to the north and south that would be raised in specific areas to provide sufficient freeboard above the 50-year event floodwaters. Floodwaters within each basin would be contained within the flood easements and allow for controlled releases into the Canal as necessary.

DWR conducted hydrological studies along the Canal to determine 50-year flood elevations within each basin. The following is a description of each basin:

- Basin 1 lies between Clarkson and Cerini Avenues and receives floodwater mainly from Arroyo Hondo.
- Basin 2 lies between Cerini and Mount Whitney Avenues and receives floodwater from Cantua Creek.
- Basin 3 lies between Mount Whitney and Paige Avenues and receives floodwater from Salt Creek and from Martinez Creek.
- Basin 4 is between Paige and Oakland Avenues and receives floodwater from Domengine Creek.

Corresponding Canal mile posts (MP) for these basins are as follows:

- Basin 1: MP 128.48-132.8
- Basin 2: MP 132.8-134.9
- Basin 3: MP 134.9-138.2
- Basin 4: MP 138.2-141.6

2.2.1 Project Features Overview

The Proposed Project includes restoring storage in the ponding basins through flood easement acquisition and raising the embankment and roads. The work would include the following:

(a) Acquiring approximately 860 acres of new flood easements to complement the existing flood easements;
(b) Raising approximately 9,900 linear feet of the Canal embankment in various sections to provide basin storage;
(c) Raising and repaving approximately 850 linear feet of Clarkson Avenue, a paved Fresno County road;
(d) Raising and paving approximately 850 linear feet of Oakland Avenue, a private dirt road;
(e) Re-grading the road and flood easements near Parkhurst Avenue (aka Excelsior Ave.), a private dirt road;
(f) Construction of embankments around four Westland Water District (WWD) turnout facilities;
(g) Raising six pump pads used for placement of temporary floodwater pumps;
(h) Clearing sediment build-up at the Salt Creek drain inlet at Laguna Avenue;
(i) Removing sediment from the Cantua Creek Channel to reestablish the gabion weirs at the Harlan Drain Inlet and using it as construction material;
(j) Constructing an approximate 350-foot-long by 100-foot-wide concrete weir in the existing Canal operations road north of Jeffrey Avenue;
(k) Removing sediment from the Parkhurst Triangle, a 25-acre Reclamation-owned parcel; the material may be used as borrow material;
(l) Protecting structures and facilities such as power poles, gated culverts, pipeline utility valves/appurtenances, pumps, and irrigation crossings from damage during construction;
(m) Acquiring approximately 1 acre of private land to construct an embankment around the WWD near Jeffrey Avenue at MP 139.25; and
(n) Borrowing approximately 22,300 cubic yards of soil for construction of embankments and roads from within the proposed project footprint.

2.2.2 Project Details

Maps with locations of specific construction activities within each basin can be found at the end of this section. Representative site photographs can be found in Appendix A.

(**a**) Currently, 1,420 acres of flood easements exist within and nearby the Proposed Project area. For the purpose of compensating landowners for ponding damage on lands west of the Canal during high floods, Reclamation and DWR would purchase additional flood easements on approximately 860 acres west of the Canal between Clarkson and Oakland Avenues. The proposed easement area (50-year floodplain) is delineated on the east by the Canal and on the west by an approximate 324-foot contour in Basin 1, an approximately 331-foot contour in Basins 2 and 3, and an approximate 330-foot contour in Basin 4 (Figure 2 and Figure 3). Farming would continue within the easement area, although flood easements would prohibit the planting of permanent or semi-permanent crops to allow for flood capacity and maintenance of the ponding basins.

(**b**) Canal embankments would be raised 0.5 feet to 7.0 feet, depending on the location. Portions of the western Canal embankment between the Cantua Creek flume and Paige Avenue would be raised to an elevation of 333.0 feet. Between Paige Avenue and Oakland Avenue, portions of the embankment would be raised to an elevation of 332.0 feet. In total, approximately 9,900 linear feet of the Canal embankment would be potentially raised (Table

1), requiring approximately 16,000 cubic yards of fill. In raising the embankment, material would be placed in compacted lifts (6-inch-thick increments) with side slope ratios of 2:1 (26.6 degree slope angle). The crest of the embankment would be built with a minimum 14-foot-wide dirt road (Figure 4).

Table 1. Linear Feet and Fill of Raised Embankments and Pump Pads

Basin No.	Raise Canal Embankment (linear feet)	Pump Pads To be Raised
1	0	2
2	100	1
3	3,300	1
4	6,500	2
Total Feet	**9,900**	**6**
Total Fill (cubic yards)	**16,000**	**3,800**

(**c**) At approximately MP 128.5, where Clarkson Avenue defines the northern boundary of Basin 1, 850 feet would be raised. It is a paved Fresno County road within the Proposed Project footprint and would be raised a maximum of approximately 2 feet, requiring approximately 1,500 cubic yards of fill (compacted and repaved with asphalt) in order to improve floodwater containment within Basins 1 (Table 2). Raising the road would also improve road access during flood events. Clarkson Avenue would be designed and raised according to Fresno County design standards. While construction occurs, access to private roads and entrances within the Proposed Project footprint would be maintained by the contractor. Clarkson Avenue would remain a thoroughfare but would be reduced to one lane. Further details regarding traffic control is given in Section 2.3 Construction Details.

(d) Oakland Avenue, which is a private dirt road at the terminus of the Proposed Project, has a low area that would need to be raised to an elevation of 332.0 feet for approximately 850 linear feet, requiring approximately 1,000 cubic yards of fill (Table 2). At its lowest current elevation, the road would increase 3.5 feet in vertical height. The width at the top of the raise will essentially remain the same as the current width of the road; however, the base may be wider.

Table 2. Linear Feet and Cubic Yards of Raised Roads

Road to be Raised	Length (linear feet)	Volume Fill (cubic yards)
Clarkson Avenue	850	1,500
Oakland Avenue	850	1,000
Total	**1,700**	**2,500**

(e) At Parkhurst Avenue, the roadway and adjacent land within the flood easement would be re-graded. The modification to Parkhurst would help maintain connectivity within Basin 3. As floodwaters rise, water would pass over the road.

(f) Existing water supply turnouts owned by WWD would be protected as a result of the Proposed Project. Specifically, embankments surrounding WWD turnouts located at MPs 138.14, 139.27, 140.48, and 141.53 would be constructed approximately 2 feet higher than existing conditions or a new embankment would be constructed. These semi-impervious flood embankments would tie into adjacent farm roads and the Canal embankment.

(g) DWR and Reclamation have constructed elevated pump pads adjacent to the western Canal embankment where temporary pumps have been and are planned to be placed during flood events. These existing pump pads

would be raised to the approximate elevation of the new embankment, requiring approximately 3,800 cubic yards of fill. Pump pads to be raised are located at MPs 128.54, 131.46, 132.81, 137.8, 138.96, and 139.72.

(h) Original construction includes gated drain inlets to direct floodwaters into the Canal during a flood. The gates are closed in the dry season to prevent irrigation runoff from entering the canal. The Salt Creek drain inlet at Laguna Avenue is gated and locked and sediment has built up around the concrete lip and existing rip rap. This sediment would be cleared as part of the Proposed Project.

(**i**) The Cantua Creek Drain Inlet at Harlan Avenue was plugged with sediment from the 1969 flood and was not re-established until 1999. At that time, a 4-foot rock gabion weir was placed in front of the inlet to decant flood waters. Since 1999, sediment has been deposited and the channel bottom is now at the top of the gabion weir. The channel would be graded to remove the accumulated sediment and would reestablish the weir to allow decanting of floodwater at this inlet once again. Approximately 7,500 cubic yards of material would be removed from the Cantua Creek Channel at the Harlan Drain Inlet from a 2-acre area.

(j) A 350-foot-long by 100-foot-wide by 6-inch-thick reinforced concrete weir would be constructed in the Canal operating road in Basin 4, north of Jeffrey Avenue. The weir would be designed for a 50-year flood, similar in design to the existing Salt Creek weir. Approximately 500 cubic yards of rock would be used to armor the western edge of the weir. Basin 4 previously had no discharge facilities into the Canal. The addition of this weir would allow time for water to pond and suspended sediment to drop out before entering the Canal.

(k) Grading and excavation down to depths of 9 feet in a 25-acre area known as the Parkhurst Triangle would be conducted to direct flood flows through Basin 3. The area is located just north of Parkhurst Avenue and is owned by Reclamation, but it is under an agreement with the California Department of Fish and Wildlife (CDFW) to be managed as wildlife habitat. Since the site is being managed for wildlife, DWR will develop a work plan for the area in cooperation with CDFW so as to avoid most large shrubs and other vegetation to the greatest extent practicable. Where possible, sediment would be removed around the shrubs and used for raising embankments. This site is a small section of a larger 89-acre borrow site within the Proposed Project footprint.

(l) Several irrigation crossings could have intakes/outlets that are in the proposed areas of borrow excavation and haul routes. These intakes/outlets would be located and flagged so that construction equipment can avoid them. Other structures or facilities that would be protected to preserve existing use during construction activities include power poles, gated culverts, pipeline utility valves/appurtenances, and pumps. Protection during construction would occur through fencing, flagging, signage, and similar methods as necessary.

(m) To properly construct a new embankment around the WWD turnout at MP 139.25 near Jeffrey Avenue, a small amount (less than 1 acre) of privately-owned agricultural land would be acquired by DWR and converted from agricultural land to DWR maintained right-of-way (ROW).

(n) The raising of the Canal embankment, roads, and pump pads, would require approximately 22,300 cubic yards of onsite borrow material. This material would be excavated from three borrow sites situated within the proposed project footprint on DWR ROW lands that total 232 acres. Borrow is described in more detail in section 2.3 Construction Details.

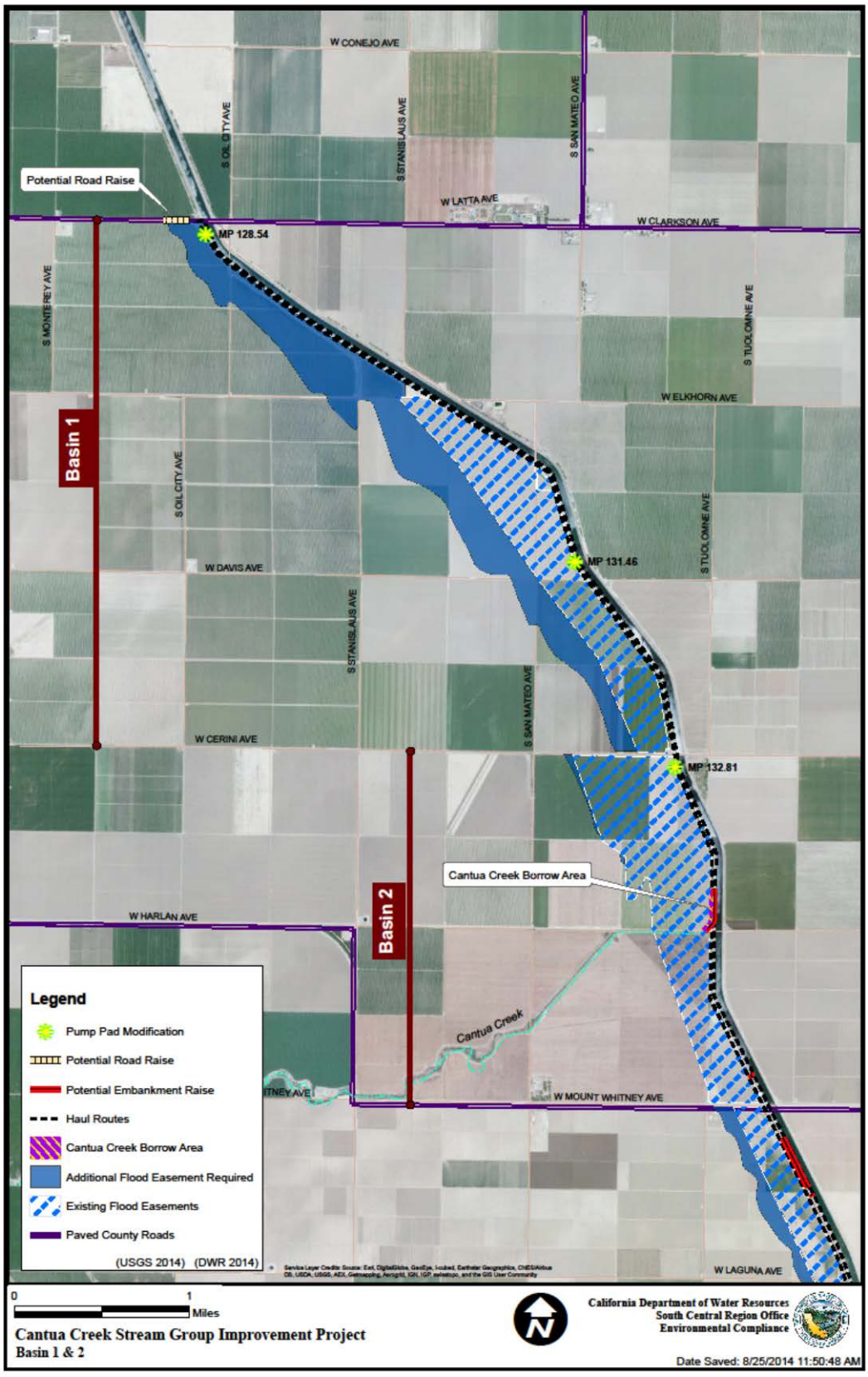

Figure 2: Project Details

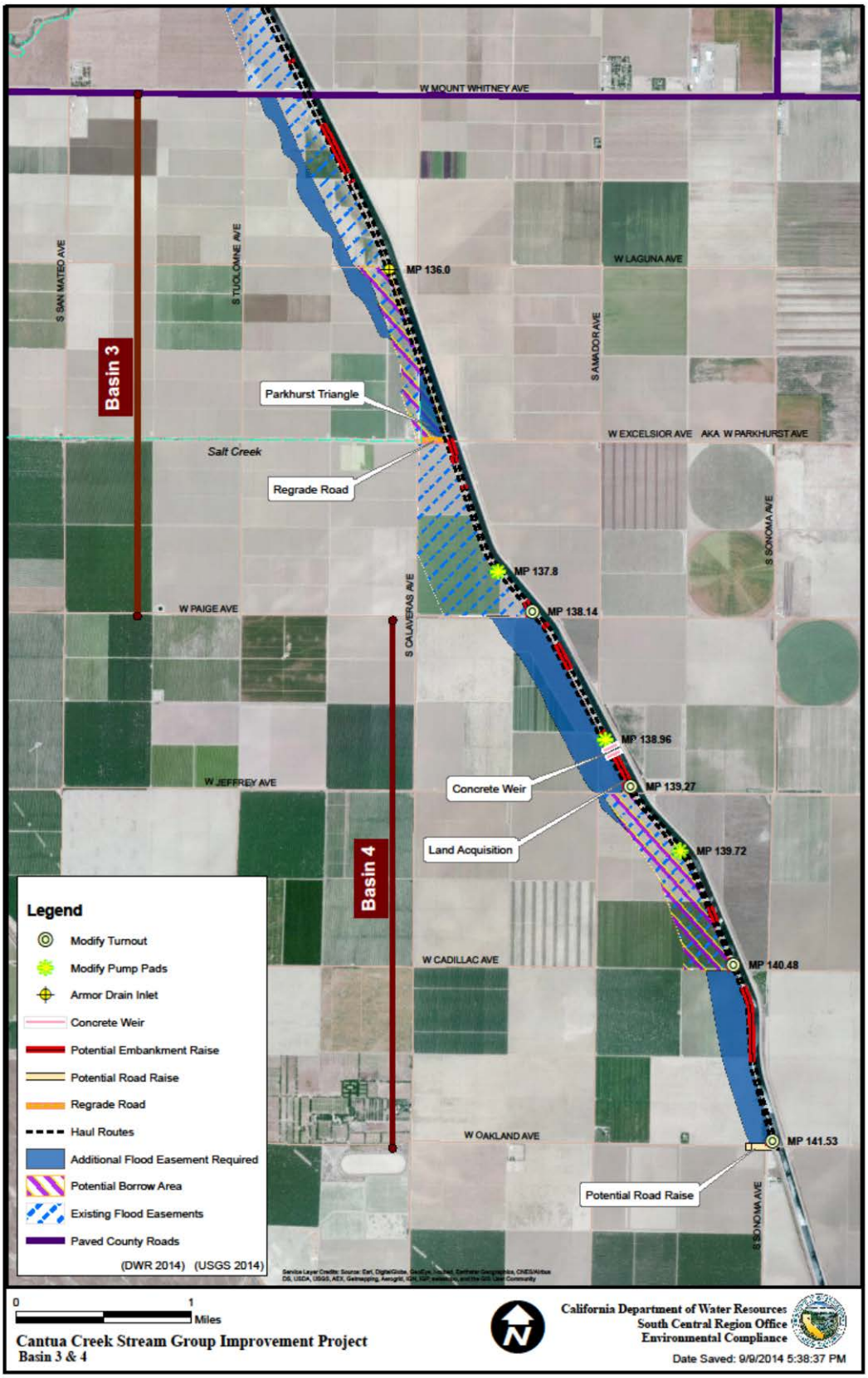

Figure 3: Project Details

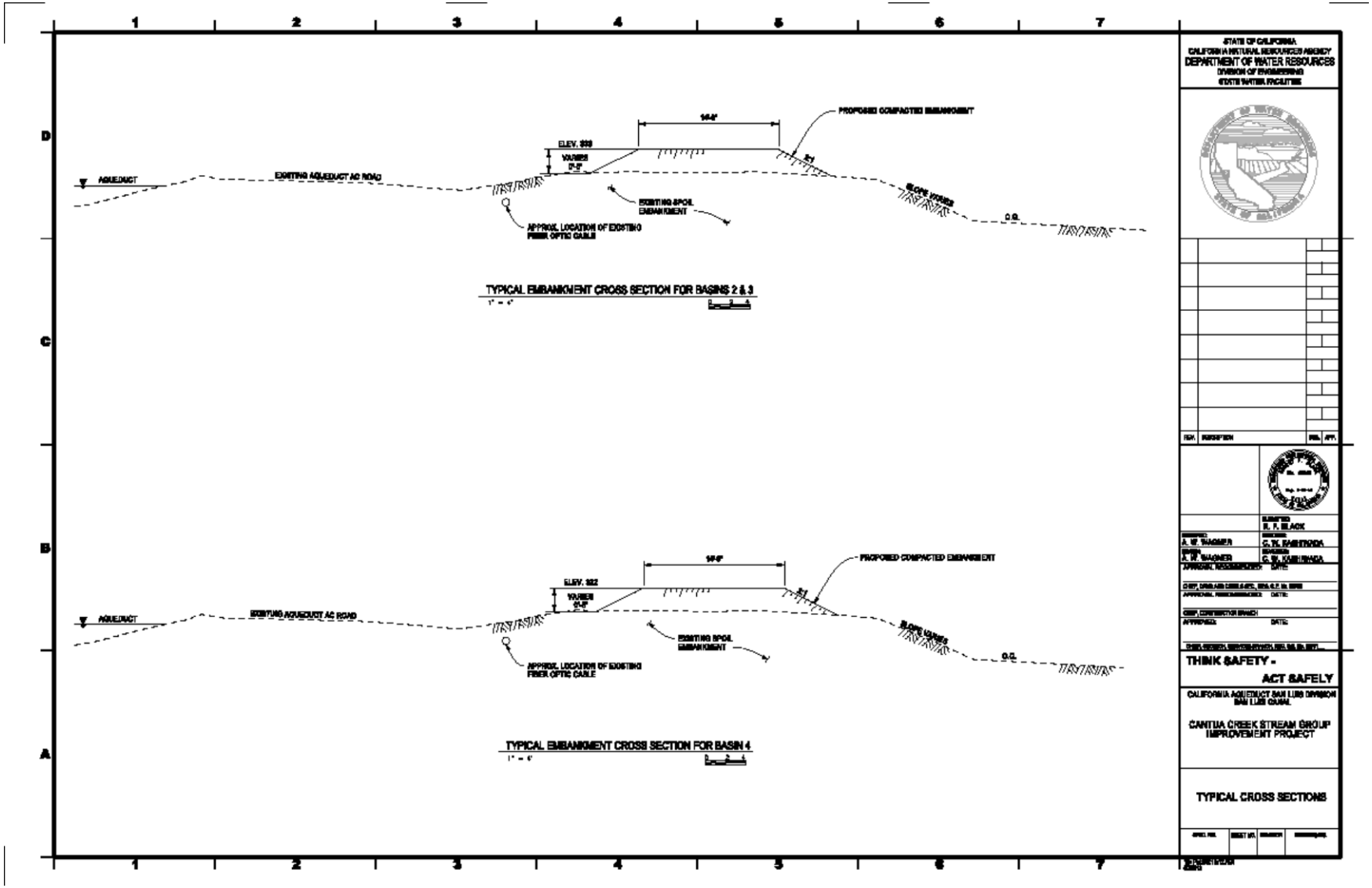

Figure 4. Embankment Raise

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2.3 Construction Details

2.3.1 Work Window

The work window for the Proposed Project is roughly between May 2015 and October 2017. From the start date, actual construction is anticipated to last approximately 6 months. To the extent possible, work would be scheduled to occur at times that minimize disruption to crop cultivation and also when impacts to sensitive plant and wildlife species can be minimized.

All work would take place during daylight hours, beginning after 6:00 a.m. and ending by 5:30 p.m. each day. Work at night would not be allowed.

2.3.2 Site Preparation

Areas requiring protection from construction activities would be isolated and protected by the contractor using temporary fencing. Those areas where agricultural uses could impair construction would be cleared, grubbed, and agricultural materials would be removed (taken off site if necessary) prior to mass grading and excavation.

Asbestos is known to occur in the Proposed Project area. Asbestos testing and analyses was conducted prior to construction to determine the soil content of asbestos material and if necessary, the appropriate method of handling and disposing. DWR staff and contractors would comply with all applicable local, State, and federal laws regarding handling and construction activities. The results of the sampling and applicable asbestos handling and disposal methods and standards are discussed further in Sections 2.4 Environmental Protection Measures, 3.1.3 Air Quality, and 3.1.8 Hazards and Hazardous Materials.

2.3.3 Airborne Particulate Matter Control

To keep dust and other airborne particulate matter caused from grading/excavation and caused from equipment travel to a minimum, water trucks would be used for dust control. Borrow areas, haul routes, pump pads, embankments, and other construction areas would be watered, as necessary, to effectively reduce emissions. More detail about dust control is discussed in sections 2.4 Environmental Protection Measures and 3.1.3 Air Quality.

2.3.4 Borrow Sites

To reduce the amount of construction-related travel and costs, three potential borrow locations adjacent to the DWR ROW sized at approximately 2, 89, and 141 acres respectively (totaling 232 acres), have been designated for the Proposed Project (Figure 3). These areas, which are in private ownership, are all under current easement by DWR for flood management. As described above in Section 2.2.2 (k), for work in the Reclamation-owned Parkhurst Triangle area, DWR has and would continue to coordinate with the owner and leasee agency (CDFW) to gain access/permission.

The 141-acre borrow site would require removal of planted crops (newly planted saplings) before borrow construction activities. This would occur during the site preparation phase and would likely consist of some hand removal of irrigation/planting structures as needed (i.e. poly vinyl chloride piping, wooden planting stakes, etc.) and grading of the land to remove excess plant matter and other material so that borrow material can be extracted easily.

Post-construction, all borrow sites would be graded level and conformed to adjacent ground to allow continued agricultural uses. At the 2-acre site within Cantua Creek, the channel would be contoured to establish proper channel elevations to prevent sediment from depositing into the Canal. Temporary spoil locations, if any, will be located on the existing embankment, pump pads, and other similar locations within the DWR ROW.

To prevent inadvertent entrapment of animals during the construction phase of the Proposed Project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. These ramps must have a slope ratio of 2:1 (26.6 degree slope angle) or less. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals by qualified DWR environmental scientists. If at any time an animal is found, it shall be allowed to escape unimpeded or a qualified biologist shall be contacted to remove the animal.

The location of the two largest borrow sites have been selected to minimize potential impacts to special-status species and to sensitive habitat/local drainages.

2.3.5 Access Roads and Staging

Direct and indirect use of roads would require up to approximately 27 miles of potential haul road (Figures 2 and 3). Haul roads would be used to move soil from borrow areas to construction areas. Equipment would be brought in on existing roads, at the start of construction, and remain onsite in the staging areas until the Proposed Project is completed or until that equipment is no longer needed.

Staging areas could be located anywhere along existing dirt or graveled roads within the DWR ROW, the Canal operating road, or at the Canal access gates, depending on the progression and phase of the Proposed Project along the footprint. Only existing unpaved access roads within the DWR ROW would be graded and mowed prior to work.

2.3.6 Traffic Control

All roads within the Proposed Project footprint would remain open, although one-lane traffic control would occur on Mount Whitney and Clarkson Avenues. Traffic control would occur during working hours (6:00 a.m. to 5:30 p.m.).

Signage would be posted, 2 weeks prior to commencement of construction, on county and private roads to inform motorists of the pending Proposed Project and lane closures. No detours would be set. Methods of traffic control are described further in Section 3.1.16 Transportation/Traffic.

2.3.7 Sequencing of Work

As described above, the Proposed Project would take approximately 6 months to construct (Table 3). Construction could occur between May 2015 and October 2017. Specific construction timing would be scheduled to minimize impacts to crop schedules, as well as work around sensitive seasons for special-status species, if present. Multiple crews could be working on different components of the Proposed Project simultaneously, such as excavation/grading and pump pad and embankment raises. Prior to construction, the following would occur:

(1) Land owners and public agencies that would be affected by this Proposed Project would be informed at least 30 days prior to the commencement of construction activities;
(2) At least 2 weeks prior to construction, biological and other environmental surveys would be conducted by DWR Environmental Scientist staff;
(3) Utility companies would be informed of construction and potential need for facilities relocation;
(4) Signage would be posted 2 weeks prior to construction;
(5) Mowing and clearing for site preparation would occur prior to construction as needed; and
(6) Use of fencing, flags, or other methods to protect private structures or facilities from construction.

Table 3. Approximate Timing of Construction Phases

Construction Phase	Length of Time to Complete
Mobilization	1 week
Site Preparation	2 weeks
Mass grading	3 weeks
Hauling	16 weeks
Compaction	16 weeks
Miscellaneous	4 weeks

2.3.8 Construction Equipment

Average daily commuter trip miles are estimated at 25 miles each way from Coalinga, California, south of the Proposed Project footprint. The estimated travel miles for equipment (expected to come from Fresno, California) to reach the Proposed Project site is 50 miles one way. Heavy equipment would be dropped off at the site prior to construction and is expected to remain on site through all phases of construction. Since borrow would be obtained from within the Proposed Project footprint, there would be little need for equipment to travel outside of the Proposed Project area during construction. Table 4 below describes the individual types of heavy equipment that would be used during construction and the estimated horsepower of each apparatus.

Table 4. Construction Equipment List for Proposed Project

Equipment Type	Horsepower	Equipment Type	Horsepower
Generator	9	Fork Lift M25D	50
Water Truck 3600 Gal	400	Asphalt Paving Machine	224
Backhoe	75	Asphalt Pickup Machine	127
Bobcats	50	Compressor 750 CFM	275
Excavator (325L)	168	Concrete Finisher	Elec
Compactor (815F Sheepfoot)	240	Concrete Pump 28' Boom	427
Compactor (Paving)	130	Concrete Vibrator	Elec
Roller (Paving)	84	Off Highway Truck 18-22 Ton	381
12H Motor Grader	165	Foreman Cement Mason 4x2 Pick Up	250
140H Motor Grader	185	Foreman Iron Worker 4x2 Pick Up	250
Rough Terrain Crane 20 Ton	152	Foreman Operator 4x2 Pick Up	250
Rough Terrain Crane 60 Ton	270	Flatbed Truck	250
D-8N Dozer	270	4x2 Pick Up	250
623F Self Load Scraper	365	4x4 Pick Up	250
Tandem Steel Drum Compactor 8-12 Ton	130	Cut Off Saw	3.8

2.3.9 Operation and Maintenance

Once construction is completed, DWR's San Luis Field Division would maintain the four basins and related facilities in a similar manner to existing maintenance of the Canal and related facilities. This would include sediment and vegetation maintenance, embankment and pump pad repair, road grading and mowing, and other activities which occur in accordance with the Joint Use Facilities agreement between Reclamation and DWR and similar to existing facilities in the area. This work would be analyzed in separate environmental documentation as needed.

2.3.10 Transfer of Flood Easements Acquired

Once the flood easements are acquired from private landowners, DWR, the initial easement holder, would then transfer or assign the easements to Reclamation for permanent holding. As part of that transfer, DWR may retain or reserve some responsibilities to work with and coordinate with the affected private landowners and land, though Reclamation would be the primary easement holder.

2.4 Environmental Protection Measures

2.4.1 Standard Measures

The following are standard DWR environmental protection measures incorporated, as relevant, into the Proposed Project's construction (and construction contracts) to minimize the potential for impacts:

(a) Pre-activity surveys shall be conducted by a qualified biologist no more than 14 days prior to the beginning of Proposed Project activities, including staging and grading of roads/staging areas. Surveys shall confirm that areas within the Proposed Project's footprint are not inhabited or otherwise used by special-status species (mentioned in more detail in Section 3.1.4, Biological Resources, below).

Additionally, as deemed necessary by DWR environmental staff, a biological monitor shall be present during ground-disturbing or other activities to ensure environmental protection measures are implemented and working effectively. Prior to commencing any project activities including staging, mowing, grading, or digging of borrow sites, the monitor will conduct a site survey at each location along with a buffer area of at least 500 feet for sensitive wildlife or plants. Surveys will include identifying potential dens, small mammal burrows, nest trees, and sensitive habitat. If any of these sensitive areas are located, the Proposed Project area shall be relocated in order to avoid any and all impacts to the potential resource. Daily reporting forms will be filled out and kept throughout the project.

(b) An environmental education program shall be conducted for this Proposed Project prior to construction. The program shall consist of a brief presentation by persons knowledgeable in special-status species biology, legislative protection, and cultural resources. They will explain potential species and cultural concerns to contractors, their employees, and agency personnel involved in the Proposed Project. The program will include the following: a description of potential species and their habitat needs; potential for occurrence of these species in the Proposed Project area; status of these species and their protection under State and federal laws; and measures being taken to reduce potential impacts to these species during Proposed Project construction. A fact sheet conveying this information shall be prepared for distribution to participants. Contractors shall be responsible for conveying this information to non-English speaking employees. Attendees will be required to sign a form stating that they understand this information and will comply with special-status species protection measures. Those who refuse to comply with these protection measures will not be allowed to work on this Proposed Project.

(c) Vegetation and wetland disturbance shall be minimized to the greatest extent possible while still achieving Proposed Project goals. Disturbance outside of Proposed Project boundaries or within exclusion zones is prohibited.

(d) All project-related vehicle traffic shall be restricted to established roads, construction areas, and other designated areas, to the greatest extent possible, to minimize wildlife and habitat disturbance. Off-road traffic outside the Proposed Project boundaries is prohibited.

(e) Project-related vehicles shall observe a 20-mile-per-hour speed limit in all Proposed Project areas, unless a lower speed limit is required for safety or other reasons.

(f) All food-related trash items such as wrappers, cans, bottles, and food scraps shall be removed from the site at the end of each workday.

(g) No firearms shall be allowed on the Proposed Project site.

2.4.2 Project-Specific Avoidance Measures

(a) Between the base of the Canal embankment and the edge of the haul road, brush, grass, reeds, other vegetation, and 2 inches of topsoil shall be removed and windrowed at the edge of the cleared area prior to using it as a haul road, if not already removed. On the canal embankment slopes and borrow/stockpile/staging areas, brush, grass, reeds, other vegetation, and 3 inches of topsoil shall be removed and spoiled in specified areas. Topsoil shall be re-spread over the stripped areas prior to hydroseeding and other erosion control methods.

(b) Nighttime work is prohibited.

(c) DWR and its construction contractors shall implement all applicable emission control measures for construction equipment, as required by law, whenever such equipment is operating within the San Joaquin Valley Air Basin. The measures to be implemented shall include an effective combination of, but not be limited to, the following:

- Use alternative-fueled or catalyst-equipped diesel construction equipment.
- Minimize idling time (e.g., 10-minute maximum).
- Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing construction activity during the peak hour of vehicular traffic on adjacent roadways.
- Implement activity management (e.g., rescheduling activities to reduce temporary and short-term effects).
- Use the newest equipment available to try and maintain a Tier 1 fleet equipment average.

(d) DWR and its construction contractors shall comply with the San Joaquin Valley Air Pollution Control District's (SJVAPCD's) Regulation VIII, "Fugitive Dust PM10 Prohibitions," and the California Air Resources Board's "2002-07-29 Asbestos Airborne Toxic Control Measures for Construction, Grading, Quarrying, and Surface Mining Operations" (Asbestos ATCM) and implement all applicable control measures, as required by law. Regulation VIII contains, but is not limited to, the following required control measures:

- Prewater site sufficient to limit visible dust emissions (VDE) to 20 percent opacity.
- Phase work to reduce the amount of disturbed surface area at any one time.
- During active operations, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20 percent opacity.
- During active operations, construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity.

- During active operations, apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20 percent opacity and meet the conditions of a stabilized unpaved road surface.
- When handling bulk materials, apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20 percent opacity.
- When storing bulk materials, comply with the conditions for a stabilized surface as listed above.
- When storing bulk materials, cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action.
- When storing bulk materials, construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity and with less than 50 percent porosity. If using fences or wind barriers, apply water or chemical/organic stabilizers/suppressants to limit VDE to 20 percent opacity or use a three-sided structure with a height at least equal to the height of the storage pile and with less than 50 percent porosity.
- Load all haul trucks such that the freeboard is not less than six inches when material is transported across any paved public access road sufficient to limit VDE to 20 percent opacity.
- Apply water to the top of the load sufficient to limit VDE to 20 percent opacity.
- Cover haul trucks with a tarp or other suitable cover.
- Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site.
- Prevent carryout and trackout, or immediately remove carryout and trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site.
- Clean up carryout and trackout material by either manually sweeping and picking it up; operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to 20 percent opacity; operating a PM_{10}-efficient street sweeper that has a pickup efficiency of at least 80 percent; or flushing with water, if curbs or gutters are not present and where the use of water would not result as a source of trackout material, or result in adverse effects on stormwater drainage systems, or violate any National Pollutant Discharge Elimination System (NPDES) permit program.

(e) A Storm Water Pollution Prevention Plan (SWPPP) will be prepared. The Proposed Project involves greater than 1 acre of land disturbance and as such requires completion of a SWPPP detailing measures to control soil erosion and waste discharges from the construction areas and submittal of a Notice of Intent (NOI) to the California State Water Resources Control Board for coverage under the 2009-0009-DWQ Permit for stormwater discharges associated with general construction activity. The SWPPP will include an erosion control and restoration plan, a water quality monitoring plan, a hazardous materials management plan, and post construction Best Management Practices (BMPs). The BMPs will be maintained until all areas disturbed during construction have been adequately stabilized.

The specific BMPs that will be incorporated into the SWPPP will be determined during the final stages of the Proposed Project design. However, the SWPPP is likely to include one or more of the following standard practices which are commonly used during the construction and post-construction phases of projects:

- Soil and Vegetation Disturbance: Minimize ground and vegetation disturbance during Proposed Project construction by establishing designated equipment staging areas, spoils and soil stockpile areas, and equipment exclusion zones prior to the commencement of any construction activity.
- Hazardous Materials: Use and store hazardous materials, such as vehicle fuels and lubricants, in designated staging areas located away from surface waters. Implement a spill prevention and control plan that specifies measures that will be used to prevent, control, and clean up hazardous material spills.

- All contractors conducting construction-related work shall be required to implement the SWPPP to control soil erosion and waste discharges of other construction-related contaminants. The general contractor and subcontractor(s) conducting the work shall be responsible for constructing or implementing the SWPPP, regularly inspecting measures, and maintaining the BMPs in good working order.

(f) Prior to the commencement of Proposed Project construction, DWR or its contractor shall do the following:

- Ensure that any employee handling hazardous materials is trained in the safe handling and storage of hazardous materials and trained to follow all applicable regulations with regard to such hazardous materials.
- Identify a staging area where hazardous materials will be stored during construction in accordance with applicable State and federal regulations.
- DWR and/or its contractor shall properly maintain all equipment, place a tarp or drip pan under stationary operating equipment such as a generator to prevent fuel and/or oil spills, and implement best management and clean-up practices during use of all chemicals. A spill kit will be onsite and available at all times during Proposed Project activities.

(g) In order to ensure adherence to California Fish and Game Code 1602 and potential riparian/streambed resources, prior to construction, DWR shall apply for and if deemed necessary by CDFW, enter into a Streambed Alteration Agreement (SAA) for work in jurisdictional waterways. Measures imposed by CDFW through the permitting process could include, but are not limited to, preconstruction surveys for sensitive species, revegetation, avoidance of sensitive resources as feasible, and protection of aquatic organisms and habitat as stipulated by the CDFW as conditions of the SAA.

Part 3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

PROJECT INFORMATION

1. Project Title: Cantua Creek Stream Group Improvements Project

2. Lead Agency Name and Address: California Department of Water Resources
State Water Project Analysis Office
1416 Ninth Street, Room 1620
Sacramento, California 95814

3. Contact Person and Phone Number: Ted Alvarez, Program Manager
(916) 653-6271

4. Project Location: Fresno County, California

5. Project Sponsor's Name and Address: California Department of Water Resources
Address Above

6. General Plan Designation: Agricultural

7. Zoning: Agricultural-40 (Fresno County)

8. Description of Project: The Proposed Project includes restoring storage in the ponding basins in Western Fresno County adjacent to the San Luis Canal/California Aqueduct through flood easement acquisition, sediment removal, and raising the embankment and roads. The work would include the following:

(a) Acquiring approximately 860 acres of new flood easements to complement the existing flood easements;
(b) Raising approximately 9,900 linear feet of the Canal embankment in various sections;
(c) Raising and repaving approximately 850 linear feet of Clarkson Avenue, a paved Fresno County road;
(d) Raising and repaving approximately 850 linear feet of Oakland Avenue, a private dirt road;
(e) Re-grading the road and flood easements near Parkhurst Avenue (aka Excelsior Ave.), a private dirt road;
(f) Constructing embankments around four Westland Water District (WWD) turnout facilities;
(g) Raising six pump pads;
(h) Clearing sediment buildup at the Salt Creek drain inlet at Laguna Avenue;
(i) Removing sediment from the Cantua Creek Channel to reestablish the gabion weirs at the Harlan Drain Inlet and using it as construction material;
(j) Constructing an approximate 350-foot-long by 100-foot-wide concrete weir in the existing Canal operations road north of Jeffrey Avenue;
(k) Removing sediment from the Parkhurst Triangle, a 25-acre Reclamation-owned parcel;
(l) Protecting structures and facilities such as power poles, gated culverts, pipeline utility valves/appurtenances, pumps, and irrigation crossings from damage during construction;
(m) Acquiring approximately 1 acre of private land to construct an embankment around the WWD near Jeffrey Avenue at MP 139.25;
(n) Borrowing approximately 22,300 cubic yards of soil for construction of embankments and roads from within the Proposed Project footprint.

9. Surrounding Land Uses and Setting: Agriculture, rural residential, San Luis Canal/California Aqueduct

10: Other public agencies whose approval is required: Fresno County (Road Encroachment Permits)

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 checklist on the following pages.		
☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance

EVALUATION OF ENVIRONMENTAL IMPACTS

1 A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2 All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3 Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4 "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less-Than-Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5 Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6 Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7 Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8 This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9 The explanation of each issue should identify:

-the significance criteria or threshold, if any, used to evaluate each question; and

-the mitigation measure identified, if any, to reduce the impact to less than significant.

3.1 Evaluation of Environmental Impacts

3.1.1 Aesthetics

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	**Aesthetics. 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) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
	d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

This section describes the aesthetic resources within or adjacent to the Proposed Project footprint. Aesthetic resources are generally the physical characteristics of natural and human-built features of a landscape that can be seen from viewpoints available to the public. The analysis focuses on any adverse changes to aesthetic resources.

Environmental Setting

The Proposed Project is located along the Canal in rural western Fresno County between Clarkson Avenue and Oakland Avenue, approximately 36 miles southwest of Fresno. The Proposed Project and the immediate adjacent land is open, low elevation, flat agricultural land situated on the west side of the San Joaquin Valley. The Canal is surrounded by row crops, equipment storage, flood storage infrastructure (e.g. pumps, ponding basins, embankments, etc.), and scattered rural housing. There are no scenic vistas or State-designated scenic highways located in or around the Proposed Project footprint. The nearest designated scenic highway is Interstate 5 (I-5), a Fresno County designated scenic highway (Fresno County General Plan 2000), located 3 to 5 miles to the west of the Proposed Project.

Discussion

a) Have a substantial adverse effect on a scenic vista?

No Impact. The Proposed Project is not located on or near a scenic vista and would therefore have no effect on a scenic vista; therefore, no impact would occur.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

No impact. There are no designated State scenic highways, trees, rock outcroppings or other natural heritage sites located within or adjacent to the Proposed Project that could be affected. I-5 is the closest county designated scenic highway, several miles to the west of the Proposed Project. However, it would not be affected by any construction-related activities such that scenic resources would be affected. There would be no impact.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less-than-significant impact. The proposed improvements to the Canal embankment are similar to the existing Canal and its ancillary features and therefore would not significantly alter the visual character of the site and its surroundings. Residents, local workers, and passers-by may view the construction for the duration of the Proposed Project. However, the construction is temporary, and there would be no permanent visual disturbance. The visual character of the Canal would remain unaffected, and its surroundings would not be substantially degraded. This impact would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. No new light or glare would be created during or after the Proposed Project is completed. Construction would take place during daylight hours, and artificial lighting would not be required. No impact would occur.

3.1.2 Agriculture and Forestry Resources

	THRESHOLDS OF SIGNIFICANCE	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?	☐	☐	☒	☐

This section analyzes the potential effects of the Proposed Project on land use and agricultural resources and recommends mitigation as necessary.

Environmental Setting

Agriculture Resources

The California Department of Conservation (DOC) administers the Farmland Mapping and Monitoring Program (FMMP), California's statewide agricultural land inventory. Through this mapping effort, the DOC classifies farmland under four categories; Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. Prime Farmland are those lands with the best combination of physical and chemical features able to sustain long-term agricultural production; Farmland of Statewide Iimportance is similar to Prime Farmland but with minor shortcomings, including greater slopes or less ability to store soil moisture; Unique Farmland has lesser quality soils and are used for the production of the State's leading agricultural crops; farmland of local importance and lands important to the local agricultural economy as determined by the county board of supervisors and a local advisory committee (DOC 2012).

Agricultural production is the dominant land use in western Fresno County. The lands within and around the Proposed Project footprint are planted in row crops that include tomatoes, cotton, alfalfa, and orchard crops. The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open-space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open-space uses as opposed to full market value. Local governments receive an annual subvention of forgone property tax revenues from the State via the Open Space Subvention Act of 1971.

Fresno County administers the Williamson Act contracts near the Proposed Project. Although a landowner could have other activities occur on the land, including a permitted mining operation or processing operations for

agricultural products, the program is intended to preserve farmland. These contracts are signed for a minimum of 10 years.

By State law, only land located in an agricultural preserve is eligible for a Williamson Act contract. In 2008, Fresno County had over 1.5 million acres enrolled in Williamson Act contracts. Of that, 1,005,728 acres are classified as Prime Farmland and 488,769 acres are non-prime soils (DOC 2010). In the Proposed Project area, approximately 800 acres of private land are currently in Williamson Act contracts. Flood easements acquired by DWR within Williamson Act contracts will be able to remain within Williamson Act contracts because the flood easements will allow for continued agricultural uses by the underlying fee owner. The Proposed Project may require that less than one-half of an acre of land be removed from a Williamson Act contract due to three small fee acquisitions required by DWR that extend embankments onto private property. All land rights acquired by DWR subject to a Williamson Act contract will be acquired pursuant to Government Code §51291 et seq.

The federal government designed a system to provide objective ratings of the agricultural suitability of land in comparison to the demands on nonagricultural uses of land. The system known as the Land Evaluation and Site Assessment (LESA) was adopted as a tool for the federal government, and later by the State of California, to identify and address the potential impacts of changes to agricultural land use by federal and State programs. Proposed projects that may convert farmland to nonagricultural uses must use the LESA to determine the impacts of the proposed project and identify potential mitigation. Under the California LESA model, the Proposed Project falls within the LESA model of "protected resource lands." These protected lands are lands that have long-term restrictions that are considered to be compatible with or support agricultural uses of land. The lands within the Proposed Project will remain in agricultural production with flood easements in place, and the lands will not be converted to other uses.

Forestry Resources

There are no forestry resources adjacent to or located in the Proposed Project footprint. The closest is the Los Padres National Forest, which is approximately 57 miles southwest of the Proposed Project site in Monterey County.

Discussion

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?

Less-than-significant impact. The Proposed Project includes purchasing approximately 860 acres of flood easements on land that is considered Prime Farmland; flood easements would allow the present land use (agriculture) to continue on the property after construction activities. Some borrow areas, which have planted crops on them currently, would have those crops removed temporarily during construction as part of site preparation, though would likely be replanted after construction (grading for sediment removal) in accordance with existing or new easements on the land, thus only temporarily being affected.

The Proposed Project also includes the DWR acquisition of less than one-half of an acre of property considered Prime Farmland that would be converted to maintenance ROW for the purpose of protecting three WWD turnout structures. The Proposed Project would not increase flooding on farmland beyond existing conditions and only a very small amount of farmland would be taken out of production due to the Proposed Project. The conversion of less than one acre of farmland to a non-agricultural use would not substantially impact farming in the area. This impact would be less than significant.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

No impact. The proposed construction on the Canal embankments is consistent with historic flood control approaches in the Proposed Project area. The original flood easement lands and drains were thought to be sufficient to protect the Canal from floodwaters resulting from a 50-year flood and to accommodate 50 years of sediment deposition. Recent hydrologic analysis indicated that the original design was insufficient to handle large floods. The purpose of the Proposed Project is to improve flood protection of the Canal and decrease potential flood impacts to surrounding farmland. With the added protection, this Proposed Project implements an objective that is supportive of and beneficial to continued agricultural use of the surrounding lands. There would be no impact.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104)g))?

No impact. The Proposed Project footprint does not include forestry resources and would not conflict with zoning or rezoning of forest land. No impact would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No impact. The Proposed Project footprint does not include forestry resources, and would not result in the loss of forest land or conversion of forest land to a non-forest use. No impact would occur.

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?

Less-than-significant impact. The Proposed Project will provide protection along the Canal from the CCSG floods; managing the water within the basin will help keep flooding of adjacent agricultural lands to a minimum; and the Proposed Project will not result in more frequent or more severe flooding on productive farmland. The Proposed Project includes purchasing 860 acres of flood easements in the area adjacent to the Canal while allowing them to continue their current uses. Other actions include protecting existing facilities and roads in the immediate area. This work will not take additional lands out of production or change the land use on a permanent basis.

The Proposed Project would not involve land development activities that would directly or indirectly induce changes in the use of surrounding agricultural land, such as the need for schools or other services. The Proposed Project would not induce new residential, commercial, or industrial land development activities to occur in the future. Proposed Project facilities would be confined to the Proposed Project area and no substantial new infrastructure would be required. Therefore, impacts involving changes in the existing environment, which due to their location or nature could result in conversion of farmland to non-agricultural uses, would be less than significant.

3.1.3 Air Quality

	THRESHOLDS OF SIGNIFICANCE	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 or air pollution control district may be relied on to make the following determinations. Would the project:				
	a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
	b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
	c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
	d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
	e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

This section includes an analysis of potential short-term construction air quality impacts of the Proposed Project.

Environmental Setting

The ambient concentrations of air pollutant emissions are determined by the amount of emissions released by pollutant sources and the atmosphere's ability to transport, transform, and dilute such emissions. Natural factors that affect pollutant transport and fate (process by which chemicals move and are transformed in the environment) include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the Proposed Project area are determined by such natural factors as topography, meteorology, and climate, in addition to the types and quantities of emissions released by existing air pollutant sources.

The Proposed Project would be located within the San Joaquin Valley Air Basin. The local agency with regulatory authority is the SJVAPCD, which has jurisdiction in Fresno County. This district is responsible for preparing and implementing plans for the attainment of ambient air quality standards, rules and regulations, adopting and enforcing rules and regulations concerning sources of air pollution, and issuing permits for stationary sources of air pollution. Table 5 below shows the thresholds for air pollution that the SJVAPCD requires as part of their CEQA review.

Table 5. Air Quality Standards of the SJVAPCD

Constituent	San Joaquin Valley Air Pollution Control District[1]
Reactive Organic Gases (ROG)	10 tons/year
Oxides of Nitrogen (NO_x)	10 tons/year
Particulate Matter - aerodynamic diameter of 10 microns or less (PM_{10})	Complying with SJVAPCD Regulation VIII reduces to less than significant.
Particulate Matter - aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$)	n/a
Carbon Monoxide (CO)	Proposed Project causes or contributes to an exceedance of state or federal ambient CO standards. Determined by screening or modeling.

[1] SJVAPCD website http://www.valleyair.org/transportation/ceqaanalysislevels.htm Accessed April 2012

Naturally Occurring Asbestos in Construction Materials

Naturally Occurring Asbestos (NOA), often found in serpentine rock formations, is known to be present in the mountain ranges west of the Proposed Project in Fresno County (MFG, Inc 2006). According to the Asbestos ATCM described above in Section 2.5.2 (c), the threshold for a material to be deemed to contain NOA is 0.25 percent NOA of a sampling. Subsurface soil testing by DWR has shown that in the proposed borrow areas, NOA concentrations range from less than 0.1 percent to 1.0 percent

When material that contains NOA is disturbed, asbestos fibers may be released and become airborne, thereby creating a potential health hazard. Exposure to asbestos may result in inhalation or ingestion of asbestos fibers, which over time may result in damage to the lungs or membranes that cover the lungs, leading to illness or even death. The California Division of Mines and Geology (now known as the California Geological Survey) has developed an enhanced 1:1,000,000-scale map that has improved the overall identification of locations of NOA near the Proposed Project footprint. The map denotes areas of the State that are more or less likely to contain NOA, based on available soil and geologic studies and some field verification. Where an area is characterized as having a lower overall probability of presence of NOA, the likelihood of presence is slight, but in some instances NOA might be found within such an area. Similarly, a location in the area identified as being most likely to have NOA may not contain it. This California Geological Survey map shows areas of higher probability for asbestos-containing rock within the mountains in western Fresno County and adjacent areas such as Merced and Kings Counties. Field sampling and testing results of the borrow site soils showed that in over 50 soil samples containing trace amounts i.e. less than 1.0 percent of NOA materials.

Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

No impact. Air quality plans describe air pollution control strategies to be implemented by a city, county, or region. The primary purpose of an air quality plan is to maintain attainment of California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS), or to bring an area that does not attain a CAAQS or an NAAQS into compliance with the requirements of the Clean Air Act and California Clean Air Act.

The SJVAPCD is responsible for formulating and implementing air quality plans to address State and federal planning requirements. The air quality attainment plans and reports present comprehensive strategies to reduce emissions of ROG, NO_X, and PM_{10} from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules and regulations; enhancement of CEQA participation; adoption of local air quality plans; and implementation of control measures for stationary, mobile, and indirect sources. The Proposed Project involves temporary earthmoving and minor

appurtenance improvements in the San Joaquin Valley area. The air quality impacts of the Proposed Project would be primarily construction-related emissions that are temporary and short term in nature (Table 6). Because construction and operation of the Proposed Project would not substantially increase air pollutant emissions within the San Joaquin Valley air basin, as explained in further detail in section b) below, the Proposed Project would not interfere with the SJVAPCD's plans to achieve or maintain attainment for various air quality pollutants. The Proposed Project would not obstruct implementation of applicable air quality plans, and this impact would be less than significant.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less-than-significant impact. According to the SJVAPCD's guidance for CEQA documents, construction of a project could result in adverse air quality effects if temporary, short-term construction-related or operational emissions of criteria air pollutants or precursors would exceed the thresholds of significance established by the SJVAPCD (Table 5). In the case of the Proposed Project, no long-term operational emissions would occur, and this analysis relates only to construction activities which would result in air emissions that would be "short term" or temporary in duration.

Such emissions, especially fugitive dust emissions, have the potential to represent an impact with respect to air quality. Fugitive dust emissions are primarily associated with site preparation during construction and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles on- and off-site. Reactive Organic Gases and NO_x are ozone precursor emissions and are primarily associated with mobile equipment exhaust. Construction of the Proposed Project would result in the temporary generation of ROG, NO_x, PM_{10}, and $PM_{2.5}$ emissions. A detailed equipment list is provided in Table 4 in Part 2. Project Description and in Appendix B. Off-site vehicle trips related to construction would be associated with material delivery, equipment delivery, and worker commute trips.

Table 6 presents the predicted construction emissions for the Proposed Project within the affected air district. Emissions were estimated by utilizing CalEEMod (Version 2011.1.1) software, which incorporated the equipment and hours listed in Appendix B.

Table 6. Estimated Maximum Construction Emissions[1]

Constituent	SJVAPCD threshold (conservatively assumes all construction occurs within a 1-year timeframe)[2]
Reactive Organic Gases (ROG)	0.56 ton annually
Oxides of Nitrogen (NO_x)	4.03 tons annually
Particulate Matter - 10 microns (PM_{10})	0.34 ton annually
Particulate Matter - 2.5 microns ($PM_{2.5}$)	0.26 ton annually
Carbon Monoxide (CO)	2.20 tons annually

[1] Estimates modeled by DWR in June 2013 using CalEEMod (Version 2011.1.1)

[2] Although construction is expected to last 6 months, for the purposes of this analysis, the "worst case" scenario of all construction occurring in 1 calendar year was used for emissions estimates.

As shown by comparing Tables 5 and 6, there would be no exceedance of air quality emission thresholds for ROG, NO_x or CO in the San Joaquin Valley air basin. The SJVAPCD does not have a threshold for PM_{10} and $PM_{2.5}$ particulates and instead relies on implementation of Regulation VIII, "Fugitive Dust PM_{10} Prohibitions," to reduce measures to a less-than-significant level. The Proposed Project, with included environmental protection measures, would not contribute substantially to or violate an established air quality standard. Emissions from the Proposed Project would result in a less-than-

significant impact.

c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less-than-significant impact. The Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the affected region is in nonattainment (Tables 5 and 6). As noted in section b) above, implementation of all regional and local air pollution control measures, including the applicable NO_x reduction and fugitive dust control measures as part of the Proposed Project, would ensure that the Proposed Project's regional air emissions would be less than the SJVAPCD's air quality thresholds. The thresholds are designed to assist the region in attaining the applicable CAAQS and NAAQS by reducing potential criteria air pollutant emissions that would otherwise occur without their incorporation into the Proposed Project. Therefore, the Proposed Project would not substantially contribute to cumulatively considerable air quality effects. When added to other similar existing and proposed future actions, the proposed project would not contribute substantially to any cumulative air quality effects related to criteria pollutants for which the affected regions are in nonattainment. Therefore, this impact would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-significant impact. Implementation of the Proposed Project would not expose sensitive receptors to substantial concentrations of fugitive PM_{10} dust or criteria pollutants. The Proposed Project would result in no operational air quality emissions due to the type of existing uses (i.e. Canal embankments and existing roads), and as such, the following discussion focuses on the potential impacts to sensitive receptors that could occur during construction activities. According to the SJVAPCD's Draft Guidance for Assessing and Mitigating Air Quality Impacts (April 2012), sensitive receptors include residences, schools, convalescent homes, hospitals, and any place that individuals remain on site for 24 hours or more. Potential sensitive receptors are located near (range between 100 feet at haul routes and 7,300 feet) the Proposed Project construction sites. During construction, these sensitive receptors and other receptors such as construction workers could be exposed to localized temporary elevated pollutant concentrations. The pollutants that could be generated by the Proposed Project during construction and that could result in adverse health effects on sensitive receptors include CO, ozone precursors (i.e., ROG and NO_x), and respirable particulate matter (i.e., PM_{10} and $PM_{2.5}$).

In some areas of excavation and grading, sediment from runoff may contain small amounts of asbestos derived from serpentine or ultramafic rock from the mountains west of the Canal. As described above in Environmental Setting, concentrations of NOA in the borrow areas were determined to be less than 1.0 percent but greater than the threshold of 0.25 percent and so the materials contained in the borrow areas are considered to contain NOA, at least in part, and in relatively small quantities. Adherence to the regulatory requirements of the Asbestos ATCM and to the overall dust control, as outlined in environmental protection measures (c) and (d), would ensure that proper measures are taken to reduce exposure of all receptors to substantial pollutant concentrations, though some pollutants would still be released. As such, potential effects to human health via airborne particulates (e.g. dust generated during grading and excavation activities.) would be less than significant.

e) Create objectionable odors affecting a substantial number of people?

No impact. The Proposed Project does not involve creation or construction of materials or facilities that

would generate objectionable odors or create new sources of odors in the short term or long term that would affect a substantial number of people. There would be no impact.

3.1.4 Biological Resources

	THRESHOLDS OF SIGNIFICANCE	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 Wildlife or the 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, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
	c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (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?	☐	☐	☐	☒

This section describes the existing conditions of biological resources within the Proposed Project site, potentially significant effects from implementation of the Proposed Project, and mitigation, if necessary, to reduce potentially significant effects of the Proposed Project.

Environmental Setting

Information on biological resources of the Proposed Project is based on the review of pertinent databases and site visits conducted throughout the years in conjunction with maintenance of the Canal embankment and facilities. Recent site visits have been conducted by DWR Environmental Scientists in May and June 2013.

The Proposed Project is located on the landside of the western embankment of the Canal in western Fresno County between Clarkson Avenue and Oakland Avenue, approximately 36 miles southwest of Fresno. The Proposed Project includes a 13-mile stretch of the ROW and approximately 100 feet to the west of the center of the Canal.

The Canal ROW is highly disturbed due to maintenance activities, access by trespassers, and encroachment by adjacent farmland. Vegetation along the Canal is maintained by biannual mowing and grading of the roads and levee.

The habitat within the narrow ROW is mostly ruderal with scattered areas containing a poor example of quail bush scrub habitat. The ruderal community consists of exotic and native weedy plant species, usually without a strong grass component. The ruderal habitat present on the western Canal embankment is composed primarily of tocalote (*Centaurea melitensis*), sunflower (*Helianthus annus*), Russian thistle (*Salsola tragus*), telegraph weed (*Heterotheca grandiflora*), London rocket (*Sisymbrium irio*), and fiddleneck (*Amsinckia* sp.), with localized, dense thickets of quail bush (*Atriplex lentiformis*) (dead and alive), and mulefat (*Baccharis salicifolia*). Wildlife species that have been observed in this area include California ground squirrel (*Spermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), and killdeer (*Charadrius vociferous*).

The habitat within the area known as the Parkhurst Triangle is ruderal with some attributes of quail bush scrub habitat. Within this area there is a large tree that had been used by a nesting Swainson's hawk (*Buteo swainsoni*). Approximately 2 to 3 years ago, this area was burned and the tree was damaged. Since the fire, a number of branches have fallen from the tree and nesting has not been observed. Wildlife species that utilize the thick stands of quail bush scrub are limited, consisting primarily of songbirds (*Passeriformes*) and desert cottontail.

Agriculture is practiced all along the Canal on the west side of the San Joaquin Valley.

Sensitive Biological Resources

Sensitive biological resources include plants, animals, and habitats that have been afforded special recognition by federal or State resource agencies and organizations. Special-status plant and wildlife species are generally defined as those species legally protected or otherwise considered sensitive by federal or State agencies and organizations. "Sensitive" is defined here as those species, subspecies, or populations that are native to California and are facing one or more threats to their populations and/or habitats. This includes species officially listed or proposed for listing under the federal Endangered Species Act and the California Endangered Species Act, federal Species of Concern, State Species of Special Concern, wildlife identified by CDFW as fully protected, taxa closely associated with habitat that is relatively limited in distribution or of particular value to wildlife in California, as well as plant species identified in the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (The Inventory) (CNPS, 2010). Of particular interest in the CNPS ranking, are those plant species in ranks 1A, 1B, 2A, and 2B.

Waters of the State may also be considered sensitive biological resources and fall under the jurisdiction of the Regional Water Quality Control Board (RWQCB). Additionally, riparian habitat and natural waterways are potentially subject to Fish and Game Code Section 1600-1616. Section 1600-1616 requires any person, State, or local agency to notify CDFW before beginning any activity that will "substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake". CDFW jurisdiction along the creek is typically bounded by the top of the bank or the outermost edges of riparian vegetation.

Both Salt and Cantua Creek account for the majority of inflow that reaches the Canal. They are considered ephemeral and have been maintained so that there is no riparian vegetation within the channels or along the banks.

Neither Salt nor Cantua Creek has hydrologic connections or other nexus to a navigable waterway and thus are not considered jurisdictional waters of the United States by the Army Corps of Engineers.

Domengine Creek is the other water body that reaches the Canal as a small manmade-constructed channel. At the point where the Martinez and Arroyo Hondo Creeks intercept the Canal, there is no longer a natural channel, and the flow becomes overland flow. Based on the review of the United States Geological Survey (USGS) topographic maps for the Domengine Ranch, Tres Picos, and Harris Ranch quadrangles (USGS 1956), none of the creeks historically were tributary to any navigable river or larger stream but rather appear to end in overland flow. The hydrology has remained the same, with the overland flow ending near the Canal embankments and ROW.

Special-Status Wildlife Species

A list of species to be evaluated for their potential to occur in the Proposed Project area (Table 7) was compiled based on the following:

- CDFW's California Natural Diversity Data Base (CNDDB) search, which included a 1-mile radius from the Proposed Project area (CNDDB 2013)
- U.S. Fish and Wildlife Service website (http://sacramento.USFWS.gov/es/spp_list.htm) for the Huron, Guijarral Hills, Coalinga, Alcalde Hills, Five Points, Westside, Harris Ranch, Calflax, Tres Picos Farms, Lillis Ranch, Joaquin Rocks, Domengine Ranch, San Joaquin, Levis, and Cantua Creek 7.5 Minute USGS quadrangles (USFWS 2013) (Appendix C)
- Results of surveys and site visits of the Proposed Project area and the Canal conducted by DWR
- Habitat conditions in the Proposed Project area

All raptors are protected under the California Fish and Game Code Section 3503.5 that prohibits take or destruction of raptors, including their nests and eggs and the Migratory Bird Treaty Act of 1918 (MBTA). Raptor species that have the potential to nest and forage within the Proposed Project area include: American kestrel (*Falco sparverius*), burrowing owl (*Athene cunicularia*), ferruginous hawk (*Buteo regalis*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk, and white-tailed kite (*Elanus leucurus*).

From the initial data searches, thirteen special-status wildlife species were identified and evaluated for their potential to occur in the Proposed Project area (Table 7). Of these thirteen species considered, five species have the potential (low to high) to occur on or adjacent to the Proposed Project area.

Table 7. Special-Status Wildlife with Potential to Occur on or Adjacent to the Proposed Project Area

Common and Scientific Names	Status[a]		Habitat	Potential to Occur
	Federal	State		
Mammals				
San Joaquin antelope squirrel *Ammospermophilus nelsoni*	—	T	San Joaquin Valley along slopes and ridge tops.	No suitable habitat is present in the Proposed Project area.
short-nosed kangaroo rat *Dipodomys nitratoides brevinasus*	—	SSC	Desert scrub, and open grassland areas	Low. Due to continuous disturbance, potential habitat is sparse throughout the Proposed Project area.
San Joaquin kit fox *Vulpes macrotis mutica*	E	T	Found in grassland and scrub habitats.	Low. May use the Canal as a corridor. No sightings recorded within Proposed Project area.
giant kangaroo rat *Dipodomys ingens*	E	E	Found in grassland and scrub communities.	Low. Due to continuous disturbance, potential habitat is sparse throughout the Proposed Project area.
Birds				
Tricolored blackbird *Agelaius tricolor*	—	SSC	Nests in cattail or tule marshes and forages in open fields.	No suitable nesting or foraging habitat is present in Proposed Project area.
burrowing owl *Athene cunicularia*	—	SSC	Nests and forages in grasslands, agricultural areas, deserts, and levee berms with an abundance of insects and small mammals; where ground squirrels are present.	High. Potential habitat occurs along the Canal throughout the Proposed Project area; nesting has been recorded.
Swainson's hawk *Buteo swainsoni*	—	T	Nests in isolated trees; forages in grasslands, and alfalfa fields.	Moderate. Potential foraging habitat is present; known nest tree in the Proposed Project area burned a number of years ago and nesting has not been observed since.
Northern harrier *Circus cyaneus*	—	SSC	Inhabit marshland, wet meadows and damp grassland areas.	Low to Moderate. Foraging habitat is present in the Proposed Project area.
yellow-headed blackbird *Xanthocephalus xanthocephalus*	—	SSC	Marshlands and wetlands.	No suitable nesting or foraging habitat is present in Proposed Project area.
Reptiles				
blunt-nosed leopard lizard *Gambelia sila*	E	E	Found in sparsely vegetated, alkali flats, low foothills, canyon floors, washes and arroyos.	No suitable habitat is present in Proposed Project area.
coast horned lizard *Phrynosoma blainvillii*	—	SSC	Found in sparsely vegetated, alkali flats, low foothills, canyon floors, washes and arroyos.	No suitable habitat is present in Proposed Project area.
San Joaquin whipsnake *Masticophis flagellum ruddocki*	—	SSC	Occurs in open grassland and saltbush scrub habitat.	Low. Marginal habitat exists within the Parkhurst triangle area.
Amphibians				
Western spadefoot *Scaphiopus hammondii*	—	SSC	Inhabits grasslands with temporary pools, but some populations are known to occur in valley-foothill woodlands.	No suitable habitat is present in the Proposed Project area.

[a]**Legal Status Definitions:**

U.S.Fish and Wildlife Service (USFWS)
E Endangered

Department of Fish and Wildlife (CDFW)
E Endangered
T Threatened
SSC Species of Special Concern

San Joaquin Kit Fox

The San Joaquin kit fox is endangered under the Federal Endangered Species Act (FESA) and threatened under the California Endangered Species Act (CESA). No San Joaquin kit fox have been sighted within the Proposed Project area and no potential dens have been observed along this portion of the Canal ROW. As a result, there is a low potential for occurrence of San Joaquin kit fox in the Proposed Project area. However, the San Joaquin kit fox may utilize the Canal ROW as a wildlife corridor.

Before and during construction, DWR biologists will monitor the project site for evidence of the San Joaquin kit fox. If San Joaquin kit fox are found in the area, DWR would consult with both USFWS and CDFW on what measures would need to be taken in order to avoid the species.

Kit foxes are active year round but are active mostly at night.

Short-nosed Kangaroo Rat and Giant Kangaroo Rat

Short-nosed kangaroo rat is a species of special concern by DFW while the giant kangaroo rat is endangered under both the FESA and CESA. No occurrence of either species has been documented within the Proposed Project area. Both the short-nosed kangaroo rat and the giant kangaroo rat are found along the west side of the San Joaquin Valley in both grassland and scrub habitats. Kangaroo rat burrows have been observed along the Canal ROW; however, habitat is not suitable for these species.

In late fall of 2013, trapping was performed in the area to determine the presence or absence of special-status kangaroo rat species. Traps were set from October 7 through October 11, 2013, according to the 2013 USFWS protocols for sensitive small-mammal species. Traps were located in four areas on the right (west) side of DWR's ROW between MPs135.0 and 141.5 of the Canal in areas where burrows were dense and construction was most likely to occur. One-hundred-seventy-eight traps were placed in front of potential active burrows in a more-or-less clustered manner. Traps were not set between MPs 128.5 and 135.0 because most project impacts occur south of MP 135.0.

No sensitive species were captured during this trapping session; seventeen small mammal individuals were captured, some repeatedly. The common species of kangaroo rat, Heerman's kangaroo rat (*Dipodomys heermanii*), was the most abundant species. Other species trapped were western harvest mouse (*Reithrodontomys megalotis*) and deer mouse (*Peromyscus manuculatus*). Results were submitted to CDFW and USFWS for informal records. Due to the presence of Heerman's kangaroo rats, it is unlikely that short-nosed kangaroo rats will inhabit the same area, as Heerman's kangaroo rats seem to out-compete the other species of kangaroo rats (Germano et al., 2013).

Burrowing Owl

The burrowing owl is a State species of special concern and is protected under the MBTA. During the 2013 reconnaissance surveys, four occupied burrow locations were observed within the Proposed Project footprint along the Canal between MPs 134.00 - 140.60 on the right or west levee embankment. Preconstruction surveys will be conducted prior to work, and if burrowing owls are observed, DWR will consult with CDFW on methods to avoid disturbance.

Burrowing owls forage in cropland, pasture, fallow fields, and sparsely-vegetated areas. Burrowing owls nest in burrows created by ground squirrels and other fossorial (underground burrowing) animals in friable soils, which are abundant throughout the Proposed Project area. Egg laying typically begins in late-April to mid-May. Although considered migratory, some are known to winter in their breeding grounds, such as in southern California.

Swainson's Hawk

The Swainson's hawk is listed as threatened under the CESA and protected under the MBTA. Potential foraging habitat for this species is present in and adjacent to the Proposed Project area within agricultural fields, particularly after cutting or harvesting. There are trees present within and adjacent to the construction footprint that could be utilized as nesting sites. Although a previously recorded nesting and roosting tree is present within the construction footprint near the northern tip of the Parkhurst triangle, this tree has not been utilized by Swainson's hawks over the past 2 years because of fire damage. CDFW defines the nesting season for Swainson's hawk as February 15 to September 15. There is a moderate potential for occurrence in the Proposed Project area.

Northern Harrier

The Northern harrier is a State species of special concern and is protected under the MBTA. Foraging harriers are occasionally observed along the Canal ROW. The Northern harrier's breeding range is confined to open, undisturbed wetland and upland habitats, most often in wet grasslands and marshes or dry grasslands. Although the Proposed Project footprint and surrounding areas are highly disturbed and unlikely nesting habitat, there is potential foraging habitat for this species both in and adjacent to the Proposed Project area within the ROW and in inactive fields not heavily grazed or harvested by farmers. Foraging near the area has been observed intermittently by DWR environmental staff. There is a low to moderate potential for occurrence in the Proposed Project area.

San Joaquin Whipsnake

The San Joaquin whipsnake, a subspecies of the coachwhip, is a State species of special concern. It is endemic to California and may be found in open, dry, treeless areas, including grassland and saltbush scrub, within the San Joaquin Valley. It takes refuge in rodent burrows, under shaded vegetation, and under surface objects. Although marginal open scrub habitat exists within the Parkhurst triangle area, the majority of the project footprint is highly disturbed. No San Joaquin whipsnakes have been observed along this portion of the Canal ROW by DWR staff. There is a low potential for occurrence in the Proposed Project area.

Special-Status Plant Species

Six special-status plant species were identified in the CNDDB and CNPS searches as occurring in the vicinity of (within 15 miles of) the Proposed Project. Five of these species typically occur in alkaline soils in association with scrub or annual grassland, and one of the species generally occurs on clay or shale grassy slopes in association with grassland or cismontane woodland. DWR environmental scientists determined that these six species do not have the potential to occur in the Proposed Project area due to the absence of suitable habitat for these species (Table 8).

Table 8. Special-status Plants Known in the Vicinity of the Proposed Project Area

Common and Scientific Names	Status[a] Federal	State	CNPS	Habitat	Potential to Occur
lost hills crownscale *Atriplex coronata var. vallicola*	—	—	1B.2	Occurs in dried beds of alkaline vernal pools, chenopod scrub, and Valley and foothill grassland. Blooms April-August	Not expected to occur in the Proposed Project area, no suitable habitat present.
brittlescale *Atriplex depressa*	—	—	1B.2	Occurs in flood basins of the valley floor and on alluvial fans associated with major streams draining from the Coast Range foothills. Blooms April-October	Not expected to occur in the Proposed Project area, no suitable habitat present.
showy madia *Madia radiata*	—	—	1B.1	Occurs on generally clayey soils or shale on grassy slopes in Valley and foothill grassland, and in cismontane woodland. Blooms March-May	Not expected to occur in the Proposed Project area, no suitable habitat present.
recurved larkspur *Delphinium recurvatum*	—	—	1B.2	Occurs on poorly drained, fine, alkaline soils in Valley grassland, cismontane woodland, chenopod scrub, or Valley sink scrub habitats. Blooms March-June	Not expected to occur in the Proposed Project area, no suitable habitat present.
pale yellow tidytips *Layia heterotricha*	—	—	1B.1	Occurs in alkali or clay soils in pinyon-juniper woodland, coastal scrub, Valley and foothill grassland, and wetland-riparian areas. Blooms March-June	Not expected to occur in the Proposed Project area, no suitable habitat present.
Munz's tidytips *Layia munzii*	—	—	1B.2	Occurs in alkaline clay soils in shadescale scrub, Valley grassland, and wetland-riparian areas. Blooms March-April	Not expected to occur in the Proposed Project area, no suitable habitat present.
San Joaquin woolly-threads *Monolopia congdonii*	E	—	1B.2	Occurs in sandy Valley and foothill grassland, alkali sinks, and chenopod scrub. Blooms February-May	Not expected to occur in the Proposed Project area, no suitable habitat present.

[a]**Legal Status Definitions:**

U.S. Fish and Wildlife Service (USFWS)

E Endangered

California Native Plant Society (CNPS) Ranks

1B.1 Rare, threatened, or endangered in CA and elsewhere, seriously threatened in CA

1B.2 Rare, threatened, or endangered in CA and elsewhere, fairly threatened in CA

Discussion

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Special-Status Plants

No Impact. The Proposed Project footprint does not support suitable habitat for special-status plants, due to lack of suitable natural substrate and the high level of disturbance from DWR's Division of Operations and Maintenance activities and local agricultural activities. Therefore, there would be no impact to special-status plants.

Special-Status Wildlife

Less-than-significant impact with mitigation incorporated. The nearest CNDDB record of short-nosed or giant kangaroo rat is approximately 7.6 and 3.5 miles, respectively, to the west of the Proposed Project area. Although sparse within most of the Proposed Project area, potential kangaroo rat burrows could be affected during construction through direct equipment use and ground vibration. Based on the information provided above in the Environmental Setting, special-status kangaroo rats are unlikely to inhabit the Proposed Project area due to the ongoing disturbance of the embankment areas where the burrows occur. Incorporation of Environmental Protection Measure (a) would further reduce the potential for impact. This impact would be less than significant and mitigation measures are not required.

The nearest CNDDB record of kit fox is 5 miles southwest of the Proposed Project area along the rangelands of the Coast Range. During construction or subsequent operation, it is unlikely that a kit fox would be present in the Proposed Project area due to the ongoing disturbance in the area and high traffic along the ROW. No potential dens have been observed along this portion of the Canal ROW. Incorporation of Environmental Protection Measure (a) would further reduce the potential for impact by avoiding potential kit fox encounters and impacts to potential habitat. This impact would be less than significant and mitigation measures are not required.

The nearest CNDDB record of a San Joaquin whipsnake is approximately 9.3 miles northwest of the Proposed Project area. The whipsnake is unlikely to be found along the project footprint because of the conversion of large areas of suitable habitat adjacent to the Canal ROW to row crops and orchards. The conversion eliminates the snake's food base and the mammal burrows it uses for refuge. Incorporation of the Environmental Protection Measure (a) would further reduce the potential for impact. This impact would be less than significant and mitigation measures are not required.

As stated above in the Environmental Setting, both the burrowing owl and the Swainson's hawk have moderate to high potential to occur within and/or near the Proposed Project. The nests of all raptor species are protected under Section 3503.5 of the California Fish and Game Code and the MBTA. The Proposed Project would not remove any known or potential nesting trees for special-status birds and/or common raptors. However, if a nest/burrow occurs within close proximity (varies by species and individuals), then noise, vibration, and the presence of personnel and equipment due to construction could result in abandonment of nest(s) or burrow(s) and/or reduced parental care of chicks. Loss of an active special-status bird nest or raptor nest or individual of the species caused by the Proposed Project would be a potentially significant impact. Implementation of Mitigation Measure BIO-1 would reduce the potential for construction-related disturbance to occur close enough to affect special-status birds, including raptors.

Incorporation of this mitigation measure would reduce impacts to special-status birds to a less-than-significant level.

Mitigation Measure BIO-1: Conduct Pre-Construction Surveys for Burrowing Owl, Swainson's Hawk, other Nesting Raptors and Special-status Birds and Nests/Burrows.

The following measures would reduce potentially significant adverse impacts to the burrowing owl, Swainson's hawk, northern harrier, and common raptors to a less-than-significant level:

- If construction is scheduled to occur during the nesting season (March 1 to September 15), field surveys for burrowing owls, Swainson's hawk, and other raptors will be conducted by a qualified biologist before commencement of activities to identify active nests at and in the vicinity of the Proposed Project site. Surveys for Swainson's hawk nests will include all areas of suitable nesting habitat within one-quarter mile of the Proposed Project site. Surveys for other raptors will include suitable nesting habitat within 1,000 feet of the construction area.

- If active nests are found during the surveys, appropriate buffers shall be established to minimize impacts, and CDFW will be notified as to the location of the nests. No construction activity shall occur within the buffer area until a qualified biologist confirms that the nest is no longer active. CDFW staff may adjust the size of the buffers, depending on the Proposed Project activity and stage of the nest, if the activity within a reduced buffer would not be likely to adversely affect the adults or their young.

The following measures would reduce potentially significant adverse impacts to burrowing owls to a less-than-significant level:

- Prior to any ground-disturbing Proposed Project-related construction activity, a focused survey for burrowing owls shall be conducted by a qualified biologist in accordance with CDFW protocols to identify active burrows within 1,000 feet of the Proposed Project site. The surveys shall be conducted no more than 30 days prior to the beginning of construction.

- If no occupied burrows are found in the survey area, then no further action is required.

- If an occupied burrow is found during the nonbreeding season (October 1 through March 31), a minimum 50-meter buffer shall be established. If an occupied burrow is found during the breeding season (April 1 through October 31) a minimum 200-meter buffer shall be established. Distance shall be determined by the level of disturbance for all Proposed Project-related construction activities. The size of the buffer may be adjusted if a qualified biologist and/or CDFW determines it is appropriate. No Proposed Project-related construction activity shall commence within the buffer area until a qualified biologist confirms that the burrow is no longer occupied or consultations with CDFW specifically allow certain construction activities to continue.

- If avoidance of occupied burrows is infeasible for Proposed Project-related construction activities, DWR shall consult with CDFW about potential on-site passive relocation techniques. No burrows shall be disturbed by Proposed Project-related construction activities until a qualified biologist verifies, through noninvasive methods, that the burrow is unoccupied and CDFW approves the collapsing of the burrow.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural Community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Less-than-significant impact. Within Cantua Creek, sediment that has accumulated around the Harlan Drain Inlet would be removed and used for embankment raises, and the channel would be re-graded. As mentioned above in Environmental Setting, riparian habitat in Cantua Creek and within the larger area is typically limited to invasive vegetation, and stream flows are ephemeral or the direct result of irrigation runoff. Cantua Creek, within the Proposed Project area, has very low riparian habitat value. Nevertheless, a Streambed Alteration Agreement may be required for work within the bed and along the banks of Cantua Creek. As described and required in Environmental Protection Measure (n), terms of the Agreement will assure that excavation and grading would not have an adverse effect on the channel. This impact would be less than significant.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No impact. Cantua Creek terminates in overland flow and does not have the hydrologic characteristics of a Waters of the United States under Section 404 of the Clean Water Act. Most work would be conducted along the Canal ROW or within existing agriculture fields. Sediment would be removed from Cantua Creek and used as borrow material for embankment raises. There would be no impact to federally protected wetlands.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less-than-significant impact with mitigation incorporated. A wildlife or movement corridor is generally a topographical or landscape feature, or movement area, that connects two open-space habitat parcels that would otherwise be entirely fragmented or isolated from one another. The Canal ROW has been identified as a movement corridor (Constable et al., 2009) and is used by kangaroo rats and San Joaquin kit foxes along the west side of the San Joaquin Valley. Potential impacts to the area would be due to construction and would be temporary. Mitigation Measure Bio-1, and the implementation of Environmental Protection Measures, would reduce potential impacts to special-status species. Therefore, impacts are less than significant with mitigation incorporated.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact. No policies regarding biological resources in the Fresno County General Plan or in the Fresno County ordinances are applicable to the Proposed Project. Therefore, the Proposed Project will not conflict with any local policies or ordinances.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

No impact. In 2009, Fresno County entered into an agreement with CDFW and USFWS for habitat conservation planning for eastern Fresno County; no planning has been conducted for western Fresno County. Since there are no proposed or adopted plans that cover the Proposed Project area, the Proposed Project does not conflict with any local natural community conservation plan or habitat conservation plan.

3.1.5 Cultural Resources

	THRESHOLDS OF SIGNIFICANCE	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 as defined in Section 15064.5?	☐	☐	☒	☐
	b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
	c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
	d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Environmental Setting

INTRODUCTION AND METHODS

Efforts to identify cultural resources within the Proposed Project footprint and surrounding area consisted of a records search, archival research, a cultural resources survey, a geoarchaeological study, and consultation with Native Americans.

A records search for the Proposed Project was conducted on April 10, 2013, at the Southern San Joaquin Valley Information Center (SSJVIC) housed at California State University, Bakersfield. The records search included a review of all recorded cultural resources and cultural resources reports within a 1-mile radius of the Proposed Project area. The records search also included a review of the Historic Property Data File, National Register, California Register, California Historical Landmarks, California Inventory of Historical Resources, and California Points of Historical Interest.

A pedestrian field survey of the Archaeological area of potential effects (APE) was conducted September 24-26, 2013, by Environmental Science Associates (ESA) archaeologists who meet the Secretary of the Interior's Professional Qualifications Standards for Archaeology. An ESA architectural historian who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History conducted a pedestrian survey of the Architectural APE on September 24, 2013. A windshield survey of the Indirect APE was conducted by ESA

staff on October 10, 2013, via unnamed, unpaved, agricultural access roads in order to ascertain as best as possible, the presence of any cultural resources, including archaeological and potentially historic-built resources, within the Indirect APE.

ESA prepared documentation for the Proposed Project that describes the methods and results of the research and field survey. The documentation also provides an analysis of impacts and management recommendations (ESA 2013a, 2013b).

SETTING

Prehistoric Setting

Prior to 5,550 cal B.C., evidence of human occupation of the Central Valley is known mainly from isolated finds along the shorelines of ancient lakes. By 5,550 cal B.C. (the Middle Archaic Period), the foothill and valley floor groups had distinct and separate adaptations. Sites on the valley floor were occupied year round and technological assemblages suggest a growing reliance on fishing. Regional trade was widespread during the Middle Archaic Period, as evidenced by obsidian, shell beads, and ornaments from outside the valley that are commonly recovered from sites.

Following the Middle Archaic Period, climatic changes at the start of the Upper Archaic Period (550 cal B.C. to cal A.D 1100) resulted in a cooler, wetter, and more stable environment. During the Upper Archaic Period, regional variations were more common and focused on resources that could be processed in bulk, such as acorns, salmon, shellfish, rabbits, and deer. Shell bead trade and technological specialization increased.

During the Emergent Period (cal A.D. 1000-present), many Archaic Period technologies and cultural traditions disappeared throughout the Central Valley. Practices very similar to those observed by later European explorers appeared at this time. The bow and arrow replaced the dart and atlatl in hunting tool kits and manufacturing centers were decentralized.

Ethnographic Setting

At the time of contact, the Central Valley was occupied by speakers of the California Penutian language family, specifically the Yokuts. The Yokuts entered the San Joaquin Valley sometime prior to A.D. 1400, perhaps by force, as indicated by skeletal remains with fatal wounds inflicted by projectile points. Historically, Yokuts have been divided into three cultural-geographical groupings: Northern Valley, Southern Valley, and Foothills. The Proposed Project area appears to be at the juncture of the Northern Valley Yokuts and the Southern Valley Yokuts territory.

Historic Setting

Expeditions into the Central Valley began in the early 1800s by Spanish explorers looking for potential mission sites but no permanent Spanish settlements were established in the San Joaquin Valley. One of the earliest Spanish trails, known as the El Camino Viejo (The Old Road), ran north-south through the San Joaquin Valley extending from San Pedro to San Antonio (present-day East Oakland). The El Camino Viejo was an alternative route to the heavily traveled El Camino Real (The Royal Road) and was often the preferred route of those wishing to travel under the radar of the Spanish government. Settlements were established along the trail corridor, including a camp site situated on the banks of the Arroyo de Cantua (Cantua Creek).

Mexico gained independence from Spain in 1821 and set about secularization of the missions and promoting the settlement of Alta California through the issuance of land grants and liberal colonization laws, which did not prevent foreigners from settling in Mexican territory. However, a few Mexican land grants were issued in the San Joaquin Valley and only two that included parts of what is now Fresno County.

After California was ceded to the United States in 1848, the federal government passed several pieces of legislation in the mid-1800s to promote settlement of the western United States and dispose of surplus public land. Various acts were passed to attract individuals to settle in California, but land speculators and farmers/ranchers manipulated the acts to obtain huge tracts of land for little cost, particularly in the San Joaquin Valley.

With the waning of the mining industry in the mid-1860s, many settlers turned to raising cattle and sheep in the valley, including many Basque immigrants who had been shepherds in their native land. The vast prairie grasslands readily supported large herds that required little maintenance. A severe drought in 1876-1877 crippled this industry, just as dry farming experienced a boost due to mechanization.

Dry farming had been practiced in the valley since the mid-1860s, and after the decline of the cattle industry, the grain industry rose to prominence. In 1889, the San Joaquin Valley wheat crop topped 40 million bushels, the largest crop in the United States except that produced by the entire state of Minnesota. Over the ensuing years, a failure to rotate crops depleted the soil and yields decreased. This, coupled with a drop in grain prices and the advancement of irrigation, opened up the opportunity for viticulture and other horticultural pursuits to expand. During the latter part of the 19th century, agricultural colonies contributed heavily to the growth of Fresno County.

The early 1900s saw the rise of the dairy farmer in the San Joaquin Valley. Many Portuguese immigrants began as milk hands until they could start their own dairy farms, becoming well-established in the valley by the 1930s. In the mid-1930s, the Great Depression, drought, and poor economic and agricultural conditions in the southern and plains states led to a mass migration of “Dust Bowl refugees” to California. Approximately 300,000-400,000 migrants from Oklahoma, Texas, Arkansas, Missouri, and other states moved to California, drawn by the promise of employment and a better life with many ending up in the San Joaquin Valley as field hands.

Today, a wide variety of agricultural enterprises exist in the San Joaquin Valley, with farms ranging from small to large industrial operations and producing crops such as fruits, nuts, barley, beans, corn, hay, beets, wheat, and cotton. Livestock, including cattle and poultry, is still raised in the San Joaquin Valley.

History of the Project Area

Fresno County was organized in 1856 from a portion of Mariposa County. The development of the Central Pacific Railroad through the county in 1872 resulted in the creation of the town of Fresno, which became the county seat in 1874.

Cantua Creek, and hence the Cantua area, is named after José de Guadalupe Cantua, a Spanish soldier stationed at San Juan Bautista. The Cantua area had grown sufficiently by 1886 to support a school district. The district was organized on May 7, 1886, but merged with the Lewis Creek school district just 2 years later, possibly due to low attendance. The Cantua Creek post office was established on March 7, 1888.

The Proposed Project area does not appear to have been part of a Mexican land grant, and the area was likely part of Mexico’s public lands, which became United States public lands. Ownership of the Proposed Project area changed many times throughout the years but was almost always used for agricultural purposes.

State Water Project

The State Water Project (SWP) is the nation's largest State-built water and power development and conveyance system. Planned, designed, constructed, and currently operated and maintained by DWR, the SWP provides water to 25 million Californians (about two-thirds of the State’s population) and over 750,000 acres of irrigated farmland. The SWP includes: 34 water storage facilities, reservoirs, and lakes; 20 pumping plants; 4 pumping-generating plants; 5 hydroelectric power plants; and about 700 miles of canals and pipelines. Canals in the SWP

system include the North Bay Aqueduct and the South Bay Aqueduct, which move water to the San Francisco Bay Area and the California Aqueduct, which moves water to the San Joaquin Valley and southern California.

Construction of the SWP began in 1960/1961. Construction on the California Aqueduct and its related infrastructure began in 1960. The fact that the aqueduct was the largest and most vital element of the SWP system meant contractors worked on it through the entire construction period of the SWP. Through a combination of bonds, sale of water and power, austerity measures, and tideland oil funds, the first phase of the SWP was completed by the target date of 1972/1973 at a cost of $2.3 billion. It was in 1967 that construction of the portion of the California Aqueduct called the San Luis Canal, where work will be performed, was completed.

Discussion

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Less-than-significant impact. Four potential historical resources were identified within the Proposed Project area (including the construction footprint). Three of them are mid-twentieth century road segments (W. Clarkson Avenue, W. Cerini Avenue, and W. Oakland Avenue) that do not appear to meet the criteria for listing in either the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP) (ESA 2013a). The fourth is a 13-mile segment of the San Luis Canal, the federal portion of the California Aqueduct. In 2012, the California Department of Transportation (Caltrans), as delegated by the Federal Highway Administration (FHWA), determined that the 444-mile mainline of the California Aqueduct, which includes the San Luis Canal, met NRHP eligibility criteria and the California State Historic Preservation Officer (SHPO) concurred. However, the California Aqueduct has not been officially deemed eligible for listing and has not been listed.

Nevertheless, even if the California Aqueduct has been formally deemed eligible for listing, while construction of the project would modify the Canal, there would be no material impairment of the facility. For instance, its ability to deliver water would not be diminished and there would not be a substantial adverse change to any character defining features or contributing elements, including the canal alignment/route, open trapezoidal design, concrete lining, and ancillary infrastructure. The Canal would continue to convey its NRHP significance; therefore, the impact on historical resources would be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than significant with mitigation incorporated. The Proposed Project footprint was the subject of archival research and subsurface geoarchaeological testing in addition to an archaeological survey that resulted in the identification of an isolated ground stone artifact fragment that may have been a hand tool (mano). The mano was recorded on the Department of Parks and Recreations' (DPR's) 523 forms and recommended as not meeting the criteria for listing in the California Register of Historical Resources as documentation exhausted its information potential. No other archaeological resources were identified within the Proposed Project area; therefore, the Proposed Project area is considered to possess low sensitivity for prehistoric and historic-era archaeological resources.

While the outcome of the literature and field studies only revealed a single artifact within the project area, it is possible that there are undiscovered archaeological resources present which could be exposed by construction-related activities. To reduce potentially significant impacts to archaeological resources to a less-than-significant level, Mitigation Measure Cultural-1 shall be implemented.

Mitigation Measure Cultural-1: Halt Ground-Disturbing Construction Activities if Cultural Materials are Discovered

If cultural materials are encountered during construction, all earth-moving activity within 100 feet of the find shall cease until a qualified archaeologist can assess the nature and significance of the find. Work may continue elsewhere within the Proposed Project area while an appropriate course of action is determined in consultation with DWR and Reclamation.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-than-significant impact. The surface of the project footprint and surrounding area is entirely mapped as Holocene Great Valley fan sediments, which is considered to be low in sensitivity for paleontological resources. There is a small outcrop of Pleistocene nonmarine sediments, considered to be high in sensitivity for paleontological resources, mapped at the southernmost tip. There are no recorded fossil finds within the project area or a 1-mile radius, according to the University of California Museum of Paleontology records search (Paleo Solutions, Inc. 2013). Extremely weathered shell and shell fragment fossils, unidentifiable beyond class Bivalvia and not considered paleontologically significant, were noted during the archaeological survey near the southern end of the project area between Jeffrey Road and Cadillac Road. It is unlikely that buried sediments of high paleontological potential would be encountered during construction; therefore, earth-moving activities associated with the project would have a less-than-significant impact.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less than significant with mitigation incorporated. Project construction activities are not anticipated to disturb any human remains, including those interred outside of formal cemeteries, but there is still the potential for an unexpected discovery. To avoid or reduce impacts to human remains, Mitigation Measure Cultural-2 will be implemented.

Mitigation Measure Cultural-2: Addressing the Discovery of Human Remains.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. At the same time, DWR's Division of Environmental Services (DES) also shall be contacted. Pursuant to the California Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendent (MLD). The MLD, together with DWR and Reclamation, will determine the appropriate, respectful treatment and disposition of the remains.

3.1.6 Geology and Soils

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI.	**Geology and Soils.** Would the project:				
	a) Expose people or structures to 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 California Geological Survey 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, as updated), creating substantial risks to life or property?	☐	☐	☒	☐
	e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

This section provides a description of the geological conditions and soils that could be directly or indirectly affected by implementing the Proposed Project.

Environmental Setting

Geologic Setting

The Cantua Creek Stream Group is located on the alluvial fan of the lower Cantua Creek Watershed in the southern Diablo Range, which forms the eastern portion of the Central Coast Range Mountains from San Francisco Bay to Kettleman City along the western margin of the San Joaquin Valley.

The core of the Diablo Range consists of shale and greywacke of the Franciscan Formation and ultrabasic intrusive rock. The Franciscan is overlain by Cretaceous marine rock consisting of mudstone, sandstone, and shale. Sediment transport occurs in stream flow, debris flow, and mudflow. These alluvial and floodplain deposits range from clay and loam to clay loam and sandy loam.

The Alquist-Priolo Earthquake Fault Zoning Act (Act) was passed in 1972 to mitigate for the hazard of surface faulting to structures created for human occupancy. This State law was a direct result of the 1971 San Fernando Earthquake that was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. The Act's main purpose is to prevent the construction of buildings used for human occupancy upon the surface trace of active faults. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards.

The Seismic Hazards Mapping Act passed in 1990 addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically induced landslides. Under the Alquist-Priolo Earthquake Fault Zoning Act, the State Geologist established regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and issued appropriate maps identifying these zones. There are no known Alquist-Priolo Earthquake Fault Zones within or immediately adjacent to the Proposed Project area; the closest active fault, the O'Neil fault system, lies approximately 11 miles northwest of the Proposed Project area (CGS 2007).

The main soils in the Proposed Project area and vicinity are Ciervo clay and Cerini clay loam (USDA 2012). These soils are found on alluvial fans and are very deep and moderately well-drained to well-drained. Slopes are typically 0 to 2 percent. Runoff from these soils is generally slow to moderate with a slight to moderate water erosion hazard.

Liquefaction is the process where the soil is transformed to a fluid form during intense and prolonged ground shaking. Areas most prone to liquefaction are those that are water saturated and consist of relatively uniform sands that are loose to medium density. Soil types in the Proposed Project area are not conducive to liquefaction because they are either too coarse or too high in clay content.

Expansive soils are characterized by the ability to undergo significant volume change (shrink and swell) as a result of variation in soil moisture content. Soil moisture content can change due to many factors, including perched groundwater, landscape irrigation, rainfall, and utility leakage. The soils in the Proposed Project area have a low (Expansion Index [EI] less than 50) to moderate expansion potential as defined by the Uniform Building Code Table 18-1-B. The EI is used to measure a basic index property of soil; therefore, the EI is comparable to other indices, such as the liquid limit, plastic limit, and plasticity index of soils. Expansive soils are commonly very fine-grained with a high to very high percentage ratio of 2 to 1 clays.

Subsidence of the land surface is widespread in the Cantua Creek Stream Group alluvial fan. It poses serious problems in the construction and maintenance of engineered structures and affects land use and flooding. In 1971, the lining of the Canal and several bridges crossing the Canal were raised 3 feet along the 4-mile stretch next to the Cantua Creek retention basin due to subsidence. DWR surveys have revealed that the Canal segment near Cerini Avenue has subsided 5.5 feet between 1967 and 1995. The extent, magnitude, and rate of past subsidence and the expected amount of future change in the altitude of the land surface are important in the planning, construction, and maintenance of any flood control Proposed Project in the CCSG area.

Discussion

a) Expose people or structures to 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 Landslide?

Less-than-significant impact. The Proposed Project is located outside of the Alquist-Priolo Earthquake Fault Zones as established by the State Geologist. There is little or no potential for liquefaction of soils to occur due to the absence of any known fault lines or seismicity in the immediate area. Also, soil types in the Proposed Project area are not conducive to liquefaction because they are either too coarse or too high in clay content. All work conducted on the Canal embankments and adjacent roads will be required to comply with standard engineering practices. Therefore, this impact would be less than significant. No mitigation is required.

b) Result in substantial soil erosion or the loss of topsoil?

Less-than-significant impact. Construction of the Proposed Project would involve ground-disturbing construction activities, including vegetation clearing, grading, soil placement, and demobilization/cleanup. Disturbed areas could be exposed to erosion caused by wind or early-season rainfall events. As such, erosion or loss of topsoil has the potential to occur during construction of the Proposed Project. The proposed area of disturbance is greater than one acre, therefore, DWR or its contractor must obtain coverage under a Construction Storm Water General Permit (2009-0009-Division of Water Quality (DWQ) Permit). Environmental Protection Measure (l), which includes submittal of the NOI for the General Construction Permit, requires implementation of a SWPPP and the associated BMPs that are specifically designed to reduce erosion. This impact would be less than significant. No mitigation is required.

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?

Less-than-significant impact. Subsidence of the land along the west side of the San Joaquin Valley, and within the Cantua Creek Stream Group, is widespread and continuous. Increased groundwater withdrawals in the area will increase subsidence. During construction of the Canal, soils were compacted to avoid potential subsidence problems. The proposed work will comply with standard engineering practices for embankment and road design and will use the best available technology in design and maintenance. Therefore, this impact would be less than significant. No mitigation is required.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less-than-significant impact. Soil shrink-swell potential within the Proposed Project area varies from slight to moderate and moderate to severe. Soils that would be used to create the embankments and berms would be chosen for their low shrink-swell capacity. Construction of the Proposed Project would be conducted in accordance with California Building Code and other applicable grading regulations and practices associated with compaction and treatment of soils along the Canal; therefore, there would be a less-than-significant effect on any structures that are part of the Proposed Project. No habitable structures are included as part of the Proposed Project; therefore, there would be no risk to foundations built on

expansive soils or any risk to people or property. This impact would be less than significant. No mitigation is required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No impact. The Proposed Project would not involve the generation of sewage or wastewater that would require onsite treatment, no septic systems or alternative wastewater disposal systems would be necessary. There would be no impact.

3.1.7 Greenhouse Gas Emissions

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI.	**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?	☐	☐	☒	☐

GHG Emissions Analysis

In May 2012, DWR adopted the DWR Climate Action Plan-Phase I: Greenhouse Gas Emissions Reduction Plan (GGERP), which details DWR's efforts to reduce its greenhouse gas (GHG) emissions, consistent with Executive Order S-3-05 and the Global Warming Solutions Act of 2006 (Assembly Bill (AB) 32). DWR also adopted the Initial Study/Negative Declaration prepared for the GGERP in accordance with the *CEQA Guidelines* review and public process. Both the GGERP and Initial Study/Negative Declaration are incorporated herein by reference and are available at: http://www.water.ca.gov/climatechange/CAP.cfm. 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 emission 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*, § 15064, subd. (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* § 15183.5, subd. (b)(2).)

Section 12 of the GGERP 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 State Water Project (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 is attached documenting that the project has met each of the required elements.

Determination
Based on the analysis provided in the GGERP and the demonstration that the Proposed Project is consistent with the GGERP (as shown in the Appendix B, Consistency Determination Checklist), DWR as the lead agency has determined that the Proposed Project's incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs is less than cumulatively considerable and, therefore, less than significant.

3.1.8 Hazards and Hazardous Materials

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII.	**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/or accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
	c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
	d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
	e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
	f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
	g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
	h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Hazardous materials and wastes are those substances that may pose a risk to human health or safety or could contaminate the surrounding environment. This section describes the hazards and hazardous materials that could directly or indirectly be affected by, or affect, the Proposed Project.

Environmental Setting

The Proposed Project site is within Fresno County and is near three unincorporated areas: Cantua Creek, Three Rocks, and Farrell Ranch. The school in closest proximity to the Proposed Project is Cantua Creek Elementary School, 1.1 miles north.

Work will take place along the Canal within the DWR ROW, within farmland easements, and on Fresno County roads. Reclamation has jurisdiction over bridges abutting the Proposed Project footprint and over some of the existing flood easements near the Proposed Project footprint. Currently, DWR has jurisdiction over some of the existing easements in the general area, although they may be transferred to Reclamation at a later date.

Hazardous Materials

According to the California Department of Toxic Substances Control's (DTSC) Hazardous Waste and Substances Site List (DTSC 2007), a fertilizer company (10.4 miles away), a chemical company (6 miles away), and a non-operating Chevron USA, Inc hazardous waste area (8.3 miles east of the Proposed Project) are located near the city of Five Points. Scattered, active monitoring or cleanup sites (11.3, 10.2, 5.8, 2.7, and 0.2 miles away) surround the Proposed Project footprint. Two inactive auxiliary air landing fields, once used by the Department of Defense, are approximately 2.25 and 7.2 miles to the south of the Proposed Project footprint. Five miles to the southwest is an inactive pesticide control disposal site.

According to a 2004 Cantua watershed assessment report prepared by MFG, Inc for the Westside Resource Conservation District, asbestos, mercury, antimony, magnesium, and chromium mining have occurred in the watershed upstream of the Proposed Project area (MFG 2004), which includes the western part of Fresno County and a small portion of eastern San Benito County. According to the DOC maps previously mentioned in section 3.1.3 *Air Quality*, naturally occurring asbestos often found in serpentine rock formations is known to be present in the mountain ranges west of the Proposed Project footprint. The Cantua Creek watershed is known to convey substantial amounts of contaminants including asbestos, sediment, salts, and trace elements to the Canal detention basins and into the Canal during large runoff events (MFG 2004). See section 3.1.3 *Air Quality* for discussion regarding NOA.

Fire Suppression

The Proposed Project area is located within a Local Responsibility Area (LRA) where Fresno County is responsible for fire suppression. The California Department of Forestry and Fire Protection (CAL FIRE) has determined that within the LRA, Fresno County has mostly Moderate Fire Hazard Severity Zones (MFHSZ) (CAL FIRE 2007). Within the Proposed Project area, there is an approximate 185-acre MFHSZ just south of West Paige Avenue.

Discussion

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less-than-significant impact. Total construction time for the Proposed Project would be approximately 6 months. During that time, common hazardous materials such as vehicle fuels, oils, and other vehicle maintenance fluids would be transported and used. Inadvertent spills of these hazardous materials could cause water, soil, or groundwater contamination. To ensure that vehicles are properly maintained and to avoid fluid leakage during construction and while parked, implementation of Environmental Protection Measures (l) and (m) would be implemented. This impact would be less than significant. No mitigation is required.

During construction, soils and other materials potentially containing asbestos could be graded, excavated, and may need to be transported to and disposed of offsite at an approved facility. To reduce and/or avoid

the potential for asbestos exposure to construction crews and nearby receptors during construction, Environmental Protection Measures (j) and (k) would be implemented. The potential for airborne and other asbestos particulates to come into contact with sensitive receptors would be minimized and this impact would be less than significant. No mitigation is required.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Less-than-significant impact. As described above in impact discussion a), hazardous materials such as vehicle fuels, oils, and other vehicle maintenance fluids would be transported and used during construction. Inadvertent spills of these hazardous materials could cause water, soil, or groundwater contamination. Improperly maintained equipment could leak fluids during construction and while parked. Grading or excavation could generate airborne particulates. There is also a potential for transport of borrow materials that contain asbestos.

Implementation of Environmental Protection Measures (l) and (m) would reduce and/or avoid potential for accident conditions such as spills and leaks during construction. Per those measures, DWR and/or its contractor shall have a spill prevention plan onsite that prescribes procedures for handling hazardous materials according to OSHA regulations and other applicable State regulations. Implementation of Environmental Protection Measures (j) and (k) would reduce the potential for asbestos exposure. Implementation of the Environmental Protection Measures mentioned above would ensure that this impact would be less than significant. No mitigation is required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less-than-significant impact. Hazardous materials such as fuels, oils, and other vehicle maintenance fluids would be on site during construction, creating the potential for a spill or accident to occur. Hazardous materials could also be transported near and around the Proposed Project area while materials are being hauled. However, because the Proposed Project site is more than one-quarter mile away from an existing or proposed school, this impact would be less than significant.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No impact. According to the Department of Toxic Substance Control's Cortese List, there are no potential sites of environmental concern within 2 miles of the Proposed Project. Human health and safety would not be affected by the Cortese Listed sites because the Proposed Project footprint is a substantial distance away from any listed site. Therefore, no impact would occur.

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 for people residing or working in the project area?

No impact. The nearest public airport is the New Coalinga Municipal Airport which is 13.8 miles southwest of the Proposed Project area. No structures would be erected within airport property or within 2 miles of a public or public use airport that would impede or impair airport operations. Therefore, no impact would occur.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No impact. The nearest private airport to the Proposed Project footprint is the Agro-west airport, 1.2 miles south, owned by Harris Ranch. Two other smaller airport strips are also present within 2 miles of the Proposed Project footprint. No structures would be erected within airport property or within 2 miles of a private airport that would impede or impair airport operations or otherwise present a safety hazard to people in the area. Therefore, no impact would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less-than-significant impact with mitigation incorporated. Construction during the Proposed Project may require temporary lane closures, which have the potential to result in increased traffic delays and affect emergency access routes or services.

During construction, access to all driveways and other roadways would be generally maintained; however, congestion would likely increase around these areas.

Pursuant to Mitigation Measure Trans-1, (Section 3.1.16 *Transportation*), a Traffic Control Plan would be prepared prior to commencement of construction. Incorporation of Mitigation Measure Trans-1 would reduce interference with adopted emergency response or evacuation plans. This impact would be less than significant with mitigation incorporated.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less-than-significant impact. CAL FIRE Fire Hazard Severity Zone maps describe an agricultural parcel (approximately 100 acres in size) within the Proposed Project footprint, just south of W. Paige Avenue, rated as a moderate fire hazard zone. Westlands Water District pumps are located just north of W. Paige Avenue. Other moderate fire risk areas are located more than 2.5 miles away from the Proposed Project footprint.

The primary risk of potential fire hazards are operating vehicles and equipment in close proximity to tall, dry vegetation where sparks could ignite fuels. However, the Proposed Project would be constructed adjacent to irrigated agriculture fields and the Canal ROW; neither is considered a substantial fire risk. This impact would be less than significant.

3.1.9 Hydrology and Water Quality

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII.	**Hydrology and Water Quality.** Would the project:				
	a) Violate any water quality standards or waste discharge requirements?	☐		☒	☐
	b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharges such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
	c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	☐	☐	☐	☒
	d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	☐	☐	☐	☒
	e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
	f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
	g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
	h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
	i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
	j) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

This section provides information on water quality and hydrology conditions in the Proposed Project area and

mitigation, if needed, to reduce potentially significant effects to hydrology and water quality.

Environmental Setting

The 201-square-mile drainage area of the Cantua Creek Stream Group is approximately 12 miles wide and 20 miles long. Elevations range from 315 feet above sea level near the Canal to over 5100 feet at Santa Rita Peak in the Cantua Creek watershed. The alluvial fan deposits have fan slopes from about 20 feet per mile near the Canal to almost 80 feet per mile near the foothills. In the upland areas, grades are steep and can exceed 60 percent (MFG 2006).

Based on the study performed by consultants (MFG 2006), all the creeks within the watershed flow toward the Canal and their incised channels terminate at a point west of the Canal. The cumulative natural and human induced degradation of the natural channels has created large channels that can carry significant floodwater and sediment volumes into the Canal basins and the Canal itself. However, some of the creeks still do not have sufficient capacity for major floods, which may result in breakouts upstream of the Canal.

Arroyo Hondo: Arroyo Hondo Creek is an incised channel that terminates approximately one-half mile downstream of I-5. As the flow continues from the creek toward the Canal, floodwater travels along a 3-mile wide overland floodplain. Floodwater generally arrives at the Canal south of Clarkson Avenue, although on occasion flow reaches the Canal further north. The MFG study assumes that Arroyo Hondo floodwater flows to the Canal south of Clarkson Avenue. Flows from a local drainage south of Arroyo Hondo also drains toward the Canal and adds to the flow in the area. Water from Arroyo Hondo is currently confined within the existing Basin 1.

Cantua Creek: Cantua Creek is a well defined channel that has retained its natural meandering shape until about 1 mile west of the Canal. The March 1995 flood demonstrated that significant floods will break out of the Cantua Creek channel about 1 mile upstream of I-5. In the MFG analysis, the channel over I-5 was assumed to have a capacity of 2,500 cfs; the analysis determined that larger flows would "breakout" of the channel and flow overland into the surrounding farmlands. The breakout flows would disperse 40 acre-feet and 290 acre-feet north of Cerini Avenue for the 25 and 50-year floods, respectively. The remaining flow would be directed toward the Canal south of Cerini Avenue. Water from Cantua Creek is currently confined within the existing Basin 2, with the exception of approximately 290 acre-feet (estimated via DWR modeling), which spills into Basin 1.

Martinez Creek: Martinez Creek flows in a defined channel until crossing Derrick Avenue just west of I-5. Beyond this point the channel loses its definition and water would sheet flow for about a mile toward I-5. A guide levee along I-5 then directs Martinez Creek flows to the south toward a 7-by-7-foot box culvert and to the north toward two 48-inch diameter corrugated metal pipes under I-5. East of I-5, floodwater flows in a defined channel and terminates into Salt Creek about 3 miles upstream of the Canal.

Salt Creek: Historically, flood flows from Salt Creek were directed to two undersized culverts under I-5 that resulted in flooding of the I-5. In 2000, subsequent to the 1995 flood, the California Department of Transportation (Caltrans) improved the I-5 bridge crossing by lining the channel in that area with concrete to direct flows towards the Canal. East of I-5, Salt Creek floodwater would travel in a channel along Parkhurst Avenue constructed by adjacent landowners. Due to cumulative degradation of the creek bed, the Salt Creek channel has been severely eroded, enlarging the channel's cross-section to the point where, currently, it may have sufficient capacity to carry significant flows until, at approximately one-half mile upstream of the Canal, the eroding processes transform into a depositing process, significantly decreasing the channel capacity. Flood flows from Salt Creek are generally directed toward the Canal north of Parkhurst Avenue. However, breakouts from the main channel may also send floodwaters south towards Paige Avenue. Water from Salt and Martinez Creeks is currently confined in Basin 3.

Domengine Creek: Domengine Creek flows in a landowner-constructed channel for most of its 4-mile path from I-5 to the Canal. The channel generally follows section lines and has at least three 90° bends before it heads to the Canal along Paige Avenue. Though the channel is relatively small, it is assumed that it could handle significant flood flows. Any significant breakouts would likely flow back into the channel or may occur close to the Canal. In the report written by MFG, Inc (MFG 2006), it states that historically, flows from Domengine Creek broke out along Paige Avenue and flowed to the north and south of Paige Avenue. The flow was highly variable and was generally influenced by the most local landowner channel modifications. However, more recent grading resulted in Domengine's Creek floodwaters flowing towards the Canal south of Parkhurst Avenue. Water from Domengine Creek is currently confined to Basin 4.

Flood Modeling

Basin hydrology models were developed for much of the Cantua Creek Stream Group watershed by DWR in 1987. Four separate models were developed using the U.S. Army Corps of Engineers (USACE) HEC-1 Flood Hydrograph Package. The models were developed to incorporate the entire watershed to the Canal. The models divide the watershed into flood basins (described in Part 2, Project Description) and stream reaches; model parameters were used to characterize runoff, losses, and routing for each flood basin and creek/stream. Precipitation depth/duration frequency curves were developed from historical gaging to develop rainfall for different frequencies. Precipitation events are based on 96-hour storm duration. Peak flow and flow duration frequency events were measured based on stream flow gage readings at Cantua Creek, the only stream with a gage in the watershed. The HEC-1 model was used to simulate the 96-hour precipitation and flow frequency events from the gage to develop flood frequency events for the entire watershed. The design flood for this analysis is a 50-year return period flood that could result from a 96-hour storm in the watershed. Table 9 shows the estimated flood peaks and volumes resulting from the 50-year design storm/flood (MFG 2006).

Table 9. Modeled 50-year Flood Volumes in the CCSG

Basin	Creek	Volume (AF)
Basin 1	Arroyo Hondo Creek	3,020
	Cantua Creek	290 (from Basin 2)
	Total	**3,310**
Basin 2	Cantua Creek	4,200
		290 (to Basin 1)
	Total	**3,910**
Basin 3	Salt Creek	2,480
	Martinez Creek	750
	Total	**3,230**
Basin 4	Domengine Creek	1,840
	Total	**1,840**

Source: MFG 2006

Discussion

a) Violate any water quality standards or waste discharge requirements?

Less-than-significant impact. Exposed slopes and graded contours during construction could be subject to rainfall and erosion and could cause temporary discharges of sediment and other contaminants in stormwater runoff to surrounding areas. These waterways are not tributary to other regulated water bodies and typically flow overland to agricultural areas, however excessive turbidity from loose soils could violate general turbidity standards and/or contribute to excessive buildup of sediment. Loose soils would be stabilized to the maximum extent feasible through implementation of Environmental Protection Measure (l), thus minimizing or preventing any potential violation of turbidity standards due to silty runoff. This impact would be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less-than-significant impact. The Proposed Project would not alter hydrology or groundwater recharge such that the groundwater table would be significantly altered. There would be no substantial additional impervious surfaces created as part of the Proposed Project that would reduce surface area capable of percolation. Although water would enter the Canal through designated existing and proposed Canal inlet facilities during floods, this amount would not be substantial enough to cause a net deficit in aquifer volume or lowering of the local groundwater table. This impact would be less than significant.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

No impact. The Proposed Project would not substantially alter the existing drainage pattern of the area, which is the stormwater runoff/flood flows that run easterly into the existing flood basins along the Canal ROW. Modifications to these basins, construction of a weir, and other small modifications would not

result in an altered drainage pattern that would result in substantial erosion or siltation on- or off-site post-construction. Existing modeled 50-year flood patterns would be maintained in the event of a 50-year storm and/or be more thoroughly contained by the modified existing flood basins on- site. This would be a beneficial impact; there would be no adverse impact.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

No impact. The Proposed Project would not substantially alter the existing drainage pattern of the area, which is the stormwater runoff and flood flows that run easterly into the existing flood basins along the Canal ROW. Modifications to these basins, construction of a weir, and other small modifications would not result in alterations of a stream or river nor affect surface runoff such that it would flood off-site. Existing modeled 50-year flood patterns would be maintained in a 50-year storm event and/or be more thoroughly contained by the modified flood basins on site. This would be a beneficial impact; there would be no adverse impact.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No impact. The Proposed Project's modifications to the existing flood basins' storage, construction of a weir, and other modifications would enhance the capacity of the flood basins to hold sediment and silt contained in floodwaters. Excess floodwater that would exceed current capacity of floodwater basins could result in embankment failure, thus resulting in the discharge of sediment-laden flows to the Canal. The Proposed Project would be a beneficial impact to the surrounding areas as it would enhance the protection to the Canal and significantly reduce the likelihood of an embankment failure in an event of a 50-year flood. This would be a beneficial impact; there would be no adverse impact.

f) Otherwise substantially degrade water quality?

Less-than-significant impact. As described above in Geology and Soils and in Hydrology and Water Quality item (a), grading and excavation could result in potential temporary discharges of sediment and other contaminants in stormwater runoff to surrounding areas. Adherence to legal requirements of Section 402 of the Clean Water Act and preparation of a SWPPP as outlined in Environmental Protection Measure (l) would ensure that significant discharges during rain events would not reach surrounding waterbodies or upland areas. This impact would be less than significant.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No impact. There would be no housing constructed as part of the Proposed Project, nor would there be a change in the 100-year flood hazard area. Therefore, no impact would occur.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No impact. As described in checklist item (g) above, there would be no housing placed in the 100-year floodplain nor would the 100-year floodplain be altered to impede flood flows. However, improvements to the flood basins and construction of a weir along the Canal would improve existing flood conditions in the area. The project would be beneficial to surrounding agricultural land and infrastructure and no adverse impacts would occur to structures. Therefore, no impact would occur.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No impact. The Proposed Project would enhance flood capacity in existing flood basins, correct deficiencies in the Canal embankment/levee, and correct deficiencies in the existing flood infrastructure to mitigate the risk of failure in the event of a 50-year flood. No exposure to loss, injury, or death from flooding would occur from the Proposed Project. Therefore, no impact would occur.

j) Inundation by seiche, tsunami, or mudflow?

No impact. The Proposed Project is in a flat area subject to slow moving runoff and flooding. The area is not close enough to a water feature that could be subject to a seiche, tsunami, or mudflow. Therefore, no impact would occur.

3.1.10 Land Use and Planning

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX.	**Land Use and Planning.** Would the project:				
	a) Physically divide an established community?	☐	☐	☐	☒
	b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
	c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

This section describes the general land uses within and surrounding the Proposed Project in Fresno County. For the purposes of this analysis, it is important to note that the Proposed Project remedies deficient storage in existing ponding basins, and improves existing infrastructure. These areas are generally disturbed areas (Canal ROW or agricultural uses). Therefore, the following discussion of the Proposed Project area includes an overview of uses and resources, without detailed discussion of individual parcel owners.

Environmental Setting

Land use character in the surrounding communities consists of scattered residences along county roads, small rural communities, elementary schools, interstate and State highway corridors, and water conveyance via the Canal.

According to the 2000 Fresno County General Plan, the Proposed Project area is designated as an agriculture zone and outside the area, closer to the foothills, is Westside Rangeland. Major land uses in and surrounding the Proposed Project area include agriculture such as row crops and sheep grazing. No urban areas are located within the immediate vicinity of the Proposed Project; however, there are several small communities nearby. Farrell Ranch, a small ranch community consisting of about 25 houses, is located approximately 2 miles east of the Proposed Project footprint on West Mount Whitney Avenue. Three Rocks, a rural community with less than 60 houses, is located at the intersection of W. Clarkson Avenue and Highway 33, approximately 2 miles west of the northernmost end of the Proposed Project footprint. Cantua Creek is the nearest town to the Proposed Project footprint, approximately 1.3 miles to the east along W. Clarkson Avenue.

Discussion

a) Physically divide an established community?

No impact. The Proposed Project would provide a 50-year level of flood protection to the Canal and adjacent farmlands in the Cantua Creek watershed. Although some temporary construction-related traffic disturbances affecting both private and county road access from one side of the Canal to the other could occur, the Proposed Project would not physically divide an established community. The Proposed Project is outside the boundaries of any city or community. No long-term operational effect would occur. Therefore, no impact would occur.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No impact. Construction within the Proposed Project footprint would involve correcting deficient storage in the existing ponding basins, improving infrastructure capacity, and acquiring easements in close vicinity to existing ponding basins. Private properties within, or in the vicinity of, the Proposed Project footprint are on land currently designated by Fresno county as agriculture and rangeland. Easements that maintain existing or similar land use would be acquired on over 860 acres of lands in the vicinity of the Proposed Project. Although there would be some small (less than 1 acre) conversion of agricultural land use and temporary disturbance of agricultural uses within the borrow sites, neither construction nor the easement acquisition would result in conflict with local or State regulations. No impact would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No impact. The Proposed Project will not conflict with the provisions of any adopted Habitat Conservation Plan or Natural Community Conservation Plan. Therefore, no impact would occur.

3.1.11 Mineral Resources

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X.	**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?	☐	☐	☐	☒

This section describes the known mineral resources that could potentially be directly or indirectly affected by implementing the Proposed Project.

Environmental Setting

Asbestos, mercury, antimony, magnesium, and chromium have historically been mined west of the Proposed Project (Van Gosen 2011; MFG 2004&2006). The asbestos mining was limited to serpentine areas within the headwaters of Cantua Creek. Serpentine soils cover approximately 3,100 acres along the southwestern boundary of the watershed (MFG 2004 & 2006). The nearest active mining includes asbestos, 23 miles west of the Proposed Project, and sand and gravel mining, 23 miles south. There is no mining within the general vicinity of the Proposed Project footprint.

Discussion

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

No impact. The Proposed Project would not involve excavation of, or impede the recovery of, a known mineral resource within the Proposed Project. All construction would occur within the DWR ROW or within easements, which are not considered a feasible mineral recovery site; therefore, there is no availability of mineral resources in the Proposed Project footprint. No impact would occur.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No impact. As described above, there are no existing mineral resource recovery sites in the Proposed Project footprint; therefore, no impact would occur.

3.1.12 Noise

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	**Noise. Would the project:** Would the project result in:				
	a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, State, or federal standards?	☐	☒	☐	☐
	b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
	c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
	d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
	e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☒	☐	☐
	f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☒	☐	☐

This section includes a description of ambient-noise conditions, summary of applicable regulations, and an analysis of potential short-term construction and long-term operational-source noise impacts of the Proposed Project. Mitigation measures are recommended as necessary to reduce significant noise impacts to a less-than-significant level.

Environmental Setting

There are several rural residences within 1.5 miles of the Proposed Project area on the west side of the Canal ROW. On the opposite side of the Canal, within approximately 600 feet, there are scattered residences, on Mt. Whitney, West Jeffrey, and Oakland Avenues. The community of Cantua Creek is approximately 2 miles east of the Proposed Project footprint and the community of Three Rocks is approximately 2 miles to the west. The surrounding area is characterized by rural agricultural noise caused primarily by activities associated with agriculture. These include low-volume traffic noise from tractors, large trucks, and other farm equipment, both on and off-road passenger vehicles.

Construction activities associated with the Proposed Project may result in some minor amount of ground vibrations. Vibrations from construction activities are typically below the threshold perception when activity is more than 50 feet from the receptor.

Discussion

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, State, or federal standards?

Less-than-significant impact with mitigation incorporated. Short-term construction-source noise would include site preparation (e.g., excavation, grading, and clearing), material transport, paving, and other miscellaneous activities. Onsite construction equipment would include graders, dozers, and excavators. Noise levels for individual equipment can range from 79 to 101 A-weighted sound level (dBA) at 50 feet and typical noise levels generated by commercial and residential sources are indicated in Tables 10 and 11.

Table 10 Typical Construction-Equipment Noise Levels

Type of Equipment	Noise Level in dBA at 50 feet	
Without Feasible Noise Control		With Feasible Noise Control[1]
Dozer or Tractor	80	75
Excavator	88	80
Scraper	88	80
Front-end Loader	79	75
Backhoe	85	75
Grader	85	75
Crane	83	75
Truck	91	75

[1] Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications. Sources: EPA 1971, 1971

Table 11. Typical Noise Levels

Noise Level (dBA)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 ft., jet flyover at 1,000	Rock Band
80-90	Diesel truck at 50 ft.	Loud television at 3 ft.
70-80	Gas lawn mower at 100 ft., noisy urban area	Garbage disposal at 3 ft., vacuum cleaner at 10 ft.
60-70	Commercial area	Normal speech at 3 ft.
40-60	Quiet urban daytime, traffic at 300 ft.	Large business office, dishwasher next room
20-40	Quiet rural suburban nighttime	Concert hall (background), library, bedroom at night
10 - 20		Broadcast/ recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

Source: modified from Caltrans Technical Noise Supplement, 1998

Based on their distance from the Proposed Project site, sensitive receptors (homes, schools, hospitals, etc.) are anticipated to experience noise levels substantially greater than existing noise levels during daytime construction. Construction activities, including hauling of borrow materials and contractor staff commutes associated with the Proposed Project would be temporary in nature, and related noise impacts would be short term.

Since construction activities could increase ambient noise levels, the effect could be significant without mitigation, although the Fresno County Noise Ordinances (§8.40.060) exempt construction noise during daytime and evening hours (6 a.m. - 9 p.m.) (Fresno County 2013). Construction activities would be conducted to minimize exposure of persons to substantial temporary or periodic increases in ambient noise levels in the Proposed Project area above levels existing without the proposed construction. Implementation of Mitigation Measures Noise-1 and -2 would reduce this impact to less-than-significant levels.

Mitigation Measure Noise-1: Maintain and Equip Construction Equipment with Noise Control Devices.

Construction equipment shall be properly maintained and equipped with all feasible noise control, such as mufflers, in accordance with manufacturers' specifications.

Mitigation Measure Noise-2: Limit Construction to the Hours of 6:00 a.m. - 5:30 p.m.

Construction activities shall be limited to the hours of 6:00 a.m. to 5:30 p.m. Monday thru Friday and during which times such noise levels from activities are typically exempt in Fresno County.

b) Exposure of persons to or generation of excessive ground-borne vibration or groundborne noise levels?

Less-than-significant impact. The Proposed Project's construction activities have the potential to result in varying degrees of temporary ground-borne vibration, depending on the specific construction equipment used and activities involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Sensitive receptors, specifically residences, are at least 600 feet from the haul roads and thus the majority of construction vibration. The exposure or generation of excessive ground-borne vibrations or noise levels is unlikely given types of equipment used, the distance to sensitive receptors (over 1 mile to direct residences, over 500 feet from residences across the Canal), and the ability of the indirect ground contact to lessen or dampen the vibrations, therefore, the impact is less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No impact. No new maintenance activities beyond existing conditions would be created, and existing maintenance operations would continue with the Canal embankment and appurtenant structures. Construction activities would be temporary in nature. Therefore, there would be no impact.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-than-significant impact. As discussed above in impact (a), temporary on-site construction operations would result in noise levels that would comply with applicable noise standards at noise-sensitive receptors nearest to the Proposed Project area or footprint. Implementation of Mitigation Measures Noise-1 and -2 would decrease potential to less-than-significant levels. The temporary increase in ambient noise levels would not be considered substantial.

e, f) 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, and for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Less-than-significant impact with mitigation incorporated. The Proposed Project area is not within an airport land use plan or within 2 miles of a public airport, as described in section 3.1.8 *Hazards and Hazardous Materials*. For the private airstrips in the area, implementation of mitigation measures Noise–1 and Noise-2 would ensure that the people nearby would not be exposed to excessive noise levels. This impact would be less than significant with mitigation incorporated.

3.1.13 Population and Housing

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII.	**Population and Housing.** Would the project:				
	a) Induce substantial 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 homes, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
	c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

This section describes the communities and populations that potentially could be directly or indirectly affected by the Proposed Project.

Environmental Setting

Population

According to the most recent Federal Census data (CensusViewer 2012), the nearest town to the Proposed Project footprint is the unincorporated town of Cantua Creek in Fresno County. It is located approximately 1.3 miles east of the Proposed Project footprint and had a population of 466 people in 2010. The nearby unincorporated rural

settlement of Three Rocks, also in Fresno County, approximately 2 miles west of the northernmost end of the Proposed Project footprint, consists of approximately 55 houses and a population of 246 people (Census Viewer 2012). Farrell Ranch, a small ranch community consisting of about 25 houses, is located on West Mount Whitney Avenue approximately 2 miles east of the Proposed Project footprint.

Housing

Housing types within 3 miles of the Proposed Project footprint include rural ranch houses and clustered rural single family houses.

Discussion

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No impact. No new homes, businesses, road extensions, or other infrastructure for development are proposed as part of the Proposed Project. Improving existing inadequate infrastructure is intended to protect water quality within the Canal and provide flood protection to agricultural lands. The Proposed Project would not induce population growth in the area and would not affect nearby towns. Therefore, no impact would occur.

b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?

No impact. Although the Proposed Project would require land use easements on property that may flood during and after runoff events, the properties acquired would not be encouraged to create more housing or displace existing housing. Therefore, it would not displace any existing housing, or generate additional demand for housing within the surrounding counties. No impact would occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No impact. The proposed modifications to flood storage infrastructure and acquisition of flood easements would not affect permanent residences, and thus, would not displace or increase the number of residents or permanent workers. Therefore, no impact would occur.

3.1.14 Public Services

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII.	**Public Services.** Would the project:				
	a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant	☐	☐	☐	☒

environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

This section describes direct or indirect adverse physical impacts to public services caused by the Proposed Project and any potential need for new or altered facilities.

Environmental Setting

Fire Protective Services

The Proposed Project is located in a Local Responsibility Area in Fresno County. Two battalions are responsible for areas within the Proposed Project footprint. The Fresno County Fire Protection District, Battalion 14, consists of three fire stations—Huron, Harris Ranch, and Coalinga—in the vicinity of, but outside of the Proposed Project footprint, and Battalion 15 consists of three fire stations—Tranquility, Caruthers, and Mendota (CAL FIRE 2013).

Law Enforcement Services

Law enforcement services are provided on the west side of the San Joaquin Valley by county sheriffs primarily in unincorporated parts of Fresno County. The Proposed Project footprint is situated in Patrol Area 1. The patrol sub-station in Area 1 is located in the City of San Joaquin. There are no incorporated cities within the Proposed Project area. Within the Canal ROW and embankments, the California Highway Patrol (CHP) has law enforcement authority (similar to all State facilities). The Proposed Project is closest to the CHP Central Division, and the nearest office is located in the City of Fresno.

Schools and Libraries

The nearest schools or learning centers are 1 to 1.3 miles to the east of the Proposed Project footprint and include Cantua Creek Elementary School, a Headstart program facility, and an early childhood education center located in Cantua Creek, California. No other schools are located within 7 miles of the Proposed Project footprint. The nearest library is the San Joaquin Branch library, over 11 miles north.

Park Facilities

No park facilities are available within the Proposed Project footprint. However, Cantua Creek Elementary school could serve as a park. It consists of a playground, softball field, soccer field, basketball court, and a track.

Discussion

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or

physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: fire protection, police protection, schools, parks, or other public facilities.

No impact. The Proposed Project would involve temporary lane closures and/or detours as necessary; however, proposed road alterations would not alter the traffic capacity of the existing roads (see 3.1.16 *Transportation/ Traffic* section), only raise them to accommodate flooding. The Proposed Project would not result in an increase in population and would not affect the demand for public services (police, fire, schools, parks, or other public facilities), or prevent acceptable service ratios. Therefore, no impact would occur.

3.1.15 Recreation

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV.	**Recreation. Would the project:**				
	a) 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) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

This section describes the park and recreation properties maintained by federal, State, and regional and local agencies that have the potential to be directly or indirectly affected by the Proposed Project. The discussion below includes the federal, State, regional, and local parks and other recreation lands that are accessible outside of the Proposed Project footprint.

Environmental Setting

The Canal provides limited recreational opportunities for fishing. There is one DWR-designated fishing access point and three nearby non-designated access points relative to the Proposed Project. The designated access point is at the Three Rocks fishing access location at W. Clarkson Avenue. The other three are bridge crossings at Mt. Whitney Avenue; S. Derrick Avenue, located 3 miles northwest of the Proposed Project footprint; and at Highway 145, which is approximately 3.4 miles south of the Proposed Project footprint. Other designated access locations are located approximately 18.5 miles northwest at the Fairfax fishing access location and at the Huron fishing access location 11 miles to the southeast. Fishing also occurs at various locations along the Canal edges. The Proposed Project is surrounded by rural landscape and has minimal designated recreational opportunities. Other than fishing in the Canal, the recreational opportunities closest to the Proposed Project footprint are in Cantua Creek at Cantua Creek Elementary, approximately 1.3 miles north, where there is a playground, softball field, soccer field, basketball court, and a track.

Discussion

a) 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?

Less-than-significant impact. There are no federal, State, regional or other parks within the Proposed Project footprint. While the designated Three Rocks fishing access location would be inaccessible during construction, other designated access locations would be available at the Fairfax fishing access location and at the Huron fishing access location. Alternative non-designated fishing sites would also be available at S. Derrick Avenue, at Highway 145, and at W. Mount Whitney Avenue. No significant increased use is expected at any parks or recreational facilities as a result of the Proposed Project. Since parks or recreational facilities would only be displaced temporarily and alternatives are available, this impact would be less than significant.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No impact. There would be no recreational facility expansion or construction as a result of the Proposed Project; therefore, no impact would occur.

3.1.16 Transportation/Traffic

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV.	**Transportation/Traffic. Would the project:**				
	a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☒	☐	☐
	b) Exceed, individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☒	☐	☐
	c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
	d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
	e) Result in inadequate emergency access?	☐	☒	☐	☐
	f) Result in inadequate parking capacity?	☐	☐	☐	☒
	g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

This section describes county and State roads where normal traffic conditions could be affected directly or indirectly by the Proposed Project.

Environmental Setting

Highways

The Proposed Project occurs generally east of I-5, north of State Route 145, and west of State Route 99 in Fresno County. The Proposed Project would occur as close as 5 miles from major highway I-5.

County Roadways/Traffic Types

Traffic patterns along county-owned and local roads are related to institutional uses, remote residential, and agricultural. All the roads within and adjacent to the Proposed Project footprint are rural, two to four lane roads serving mainly agricultural and rural residential land uses and are maintained by Fresno County. Only two roads are paved. West Clarkson Avenue, which passes through the town of Cantua Creek, the nearest town to the Proposed Project footprint, has a level of service standard as a collector road, according to the Fresno County General Plan Circulation Diagram (Fresno County General Plan 2000). Collector roads are local roads that connect to arterial roads heading toward freeways or expressways. Mount Whitney Avenue has no communities within 3 miles of the Proposed Project footprint but can be considered a collector road.

Average daily traffic at W. Clarkson Avenue over the San Luis Canal is 800 cars per day. Average daily traffic over the San Luis Canal at Mount Whitney Avenue is 1000 cars per day. As an example, daily traffic over the Canal on an unpaved road such as W. Cerini Avenue is much less frequent, averaging 40 cars per day (Baughn, 2013).

Airports

The closest private airport or airstrip is the Agro-west airport located approximately1000 feet south of the Proposed Project footprint at Oakland Avenue. Harris Ranch has a small airport about 1.75 miles away to the east and another larger one to the south located over 6.5 miles from the Proposed Project site. The Five Points Ranch Airport is located east of the Proposed Project footprint, approximately 1.35 miles away.

The nearest public airport is the New Coalinga Municipal Airport, 13.8 miles southwest.

Discussion

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

Less-than-significant impact with mitigation incorporated. Traffic patterns along county-owned, local roads are related to rural residential, agricultural, and open space uses. During the Proposed Project construction, small increases of truck traffic, approximately 45 trips per day, may occur for commuting, delivery of materials, and equipment for construction. No new permanent trips would result from the Proposed Project. During construction, this increase in road traffic would cause an increase in traffic load on the low-capacity collector road street system. Construction at the proposed road-raising (demolition,

raising, and restoration) sites would necessitate temporary lane closures, however, one lane would remain open, allowing one-way traffic. During construction, access to these roadway ROWs and driveways would be generally maintained, though congestion would likely increase around these areas during peak traffic times.

Thus, construction could temporarily increase traffic delays, affect emergency response times within the area, and affect local bicycle and pedestrian facilities. However, all affected roads would be restored once construction is complete, and work would not require maintenance beyond what already exists. Implementation of Mitigation Measure Trans–1 would maintain the flow of traffic during construction at each specific lane closure site to the extent feasible and ensure coordination with emergency response providers and Fresno County, the local traffic agency, thus minimizing potential traffic delays. With this mitigation incorporated, this impact would be less than significant.

Mitigation Measure Trans–1. Prepare and Implement Traffic Control Plans and Coordinate with Fresno County.

For the affected road construction sites (e.g. lane closures), DWR and/or its contractor(s) shall, in coordination with Fresno County (considered the local traffic agency for the affected roads) and any other applicable traffic regulatory agencies and local emergency services, prepare and submit for approval (by Fresno County) a traffic control plan, based on Caltrans traffic control standards (California Manual on Uniform Traffic Control Devices 2012 edition Sections 7-1.08 Public Convenience, 7-1.08 Public Safety, and 12-Construction Area Traffic Control Devices). This plan for Proposed Project construction shall reduce the effects of construction on roadway systems throughout the construction period. Once the plan is accepted by Fresno County, DWR and/or its contractors shall implement the plan and its measures to reduce traffic impacts. These plans shall include, but are not limited to, the following measures:

- Elements on detour routing, flagging, and measures to ensure emergency access through the construction area and to adjacent properties.
- Proposed lane closure(s) during the a.m. and p.m. peak traffic hours shall be minimized, if possible. Lane closures shall also be limited to the immediate vicinity of construction.
- During construction, the construction sites shall be secured to prevent pedestrian and bicyclists from entering. Pedestrian and bicycle access shall be rerouted around construction sites at all times, as applicable.
- Emergency providers shall be notified of lane closure(s) so detour routes can be prepared in advance, if necessary.

b) Exceed, individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Less-than-significant impact with mitigation incorporated. As described above for impact (a), the level of service could be affected by 45 additional commuter and truck trips, as well as road closures at specific points during road raising. However, these effects would not be substantial relative to existing traffic patterns and would also be temporary, occurring only during construction. Implementation of Mitigation Measure Trans-1 would reduce the impact to a less-than-significant level.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No impact. The Proposed Project would involve temporary road closures and/or detours, but would not affect air traffic patterns. Although there is a small private airport nearby (within 2 miles) to the Proposed Project footprint, there would be no effect to air traffic. Therefore, no impact would occur.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less-than-significant impact. The Proposed Project would not involve introduction of any hazards to roadways or incompatible uses since the improvements proposed would improve roads and reduce potential for stormwater overtopping and flooding; therefore, any impacts would be less than significant.

e) Result in inadequate emergency access?

Less-than-significant impact with mitigation incorporated. Roads within the study area currently provide adequate emergency access to agricultural, rural residential, and open space areas. Completion of the Proposed Project and operation and maintenance of the roads, basins, pumps, etc. would not affect emergency access. However, as described in the response to question (a) above, construction of the proposed route may create minor congestion and traffic delays when roads are closed, which could temporarily adversely affect emergency vehicle response times along the proposed route during construction.

Incorporation of Mitigation Measure Trans-1 would reduce the potential for effects on emergency vehicle response times by requiring the preparation of traffic control plans and other measures to allow traffic to flow to the greatest extent feasible and if necessary, coordinate with emergency providers to prepare detour routes during construction. As a result, this impact would be less than significant with mitigation incorporated.

f) Result in inadequate parking capacity?

No impact. During construction, parking needs would be temporarily limited to construction staging and related equipment along the construction corridor including off-road borrow sites. All parking would be accommodated off public roadways, on DWR's ROW, in designated areas; therefore, no impact would occur to parking capacity.

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

No impact. The Proposed Project would not involve any policies, plans, or programs supporting alternative transportation, such as bus lines and bike routes, and would be limited to improvements on existing roads and flood management facilities. Transportation use would not change; therefore, no impact would occur.

3.1.17 Utilities and Service Systems

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

XVI.	**Utilities and Service Systems.** Would the project:				
	a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
	b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
	c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
	d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
	e) 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?	☐	☐	☐	☒
	f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
	g) Comply with federal, State, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

This section provides an evaluation of impacts in relation to increased demand for utilities and service systems associated with the Proposed Project, including water supply, wastewater service, solid waste management, storm water drainage, and infrastructure.

Environmental Setting

In Fresno County, a variety of utility providers provide internet and phone communications, water, wastewater, and electrical and natural gas service in the vicinity of the Proposed Project. Westlands Water District manages turnouts where water is pumped from the Canal for agricultural use. PG&E has a natural gas line within the Proposed Project footprint. Power poles and power lines are present within the Proposed Project footprint.

Gravity and pressure irrigation crossings exist along the Canal. These pass underneath the Canal, from one periphery of the aqueduct ROW to the other, and are privately owned.

There are several landfills that could serve the Proposed Project for refuse and spoils disposal. The American Avenue Landfill, servicing Fresno County, is between the cities of Kerman and San Joaquin, and is approximately

16 miles northeast of the Proposed Project footprint. Privately owned disposal sites include U.S.A. Waste in Kettleman City, 27 miles south of the Proposed Project footprint in Kings County; Rice Road Transfer Station; Carts Cedar Avenue Recycling; Mid Valley Disposal; and Sunset Waste Systems. The last four listed are within, or on the outskirts of, the city of Fresno, approximately 35 miles away.

Discussion

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No impact. The Proposed Project would not generate wastewater during construction or operation of the proposed improved flood management facilities. As such, there would be no exceedance of RWQCB wastewater treatment requirements. Therefore, no impact would occur.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No impact. The Proposed Project would increase storage for flood/storm water from surrounding areas and would not require any long-term water supplies, nor generate wastewater during its operation. During construction, water would be used for a short time to allow for dust suppression, but that water would be brought to the construction area in water trucks by the construction contractor. No water or wastewater facilities would need to be expanded or constructed for the temporary construction needs; therefore, no impact would occur.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less-than-significant impact. The Proposed Project does not include facilities which would generate new storm water drainage needs; however, there will be an expansion of existing water storage for storm water/flood waters. The facilitie's expansion would be designed to accommodate the existing 50-year peak discharge events for the watershed. Improvements to infrastructure would relieve existing flood-capacity issues without significantly modifying the current condition of the environment. This impact would be less than significant.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No impact. As described above in question (b), the Proposed Project would only need water supplied temporarily during construction for dust control and not for operation of the Canal. No long-term water supplies or entitlements would be required to serve the Proposed Project; therefore, this would be less than significant.

e) 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?

No impact. Please see responses to (a) and (b), above. There would be no wastewater generated by the Proposed Project, thus no need for treatment. Therefore, no impact would occur.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less-than-significant impact. The Proposed Project would generate small to moderate amounts of construction-related debris, which would be hauled off to the applicable local solid waste facilities with sufficient capacity. This impact would be less than significant.

g) Comply with federal, State, and local statutes and regulations related to solid waste?

No impact. The Proposed Project would generate small to moderate amounts of construction-related debris (demolished concrete, excavated soils, etc.), which, if unable to be reused onsite, would be hauled off to the applicable local solid waste facilities in accordance with federal, State, and local regulations. Therefore, no impact would occur.

3.1.18 Mandatory Findings of Significance

	THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII.	**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, reduce the number or restrict the range of an endangered, rare, or threatened species, 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?	☐	☒	☐	☐

Authority: Public Resources Code Sections 21083 and 21087.
Reference: Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151; *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296 (1988); *Leonoff v. Monterey Board of Supervisors*, 222 Cal.App.3d 1337 (1990).

DISCUSSION

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, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

Less-than-significant impact with mitigation incorporated. The Proposed Project would be temporary in nature and involve modifications to existing structures and flood storage areas to remedy existing deficiencies and better accommodate existing flood conditions providing a net beneficial effect to the area surrounding the improvements. Specifically, the improvements would improve the reliability of the Canal relative to flood impacts and inflow from surrounding waterways in this area. 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, various environmental protection measures implemented as part of the Proposed Project, and proposed mitigation measures Bio-1, Cultural-1, Cultural-2, Noise-1, Noise-2, and Trans-1 would reduce all potentially significant impacts to biological and cultural resources, as well as to other issue areas, to less-than-significant levels.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less-than-significant impact with mitigation incorporated. As noted throughout this document, the potential impacts of the Proposed Project are largely restricted to 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 a less-than-significant level with incorporation of mitigation measures Bio-1, Cultural-1, Cultural-2, Noise-1, Noise-2, and Trans-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.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less-than-significant impact with mitigation incorporated. The potential impacts of the Proposed Project are temporary and short-term impacts, construction-related impacts, and are site-specific. These impacts are all localized to the Proposed Project site and may include limited adverse effects on traffic, air quality, biological resources, water quality/soils, hazardous materials, and noise. 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. The Proposed Project has been designed to meet the DWR flood engineering standards and would incorporate adherence to local codes and regulations as conditions of project approval. Compliance with applicable federal, State, and local standards, as well as various environmental protection measures as part of the Proposed Project and incorporation of project mitigation measures, would result in less-than-significant impacts.

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APPENDICES

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