Western Pacific Interceptor Canal
Culvert Replacement Project
Final Initial Study with Intent to Adopt a Mitigated Negative Declaration

Central Valley Flood Protection Board

Prepared by:
Central Valley Flood Protection Board
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December 2017

FINAL INITIAL STUDY with INTENT to ADOPT a MITIGATED NEGATIVE DECLARATION

The Central Valley Flood Protection Board (CVFPB) has prepared this Initial Study (IS) and intends to adopt the proposed Mitigated Negative Declaration (MND) for the Western Pacific Interceptor Canal Culvert Replacement Project in compliance with the California Environmental Quality Act (CEQA). Edits have been made to the IS/MND to reflect a revised project description, however no new significant information was added to the IS/MND that would require recirculation per CEQA guidelines section 15073.5. Edits are indicated in ~~strikethrough~~ (deletions) and underline (additions).

Project Title: Western Pacific Interceptor Canal (WPIC) Culvert Replacement Project

Lead Agency: The Central Valley Flood Protection Board (CVFPB)

Project Location: The proposed project is located near the town of Arboga and Plumas Lake subdivision in Yuba County (Figure 1). The proposed project footprint extends from Plumas Arboga Road north approximately 450 feet (Figure 2).

Project Description: The Central Valley Flood Protection Board proposes to replace a failed drainage culvert on the eastern embankment of the WPIC approximately 450 feet north of Plumas Arboga Road. A sinkhole exists in the vicinity of the culvert and the culvert is not conveying water adequately, requiring it to be removed and replaced.

Public Review Period: The Final IS/MND ~~is being~~ was circulated for public review and comment for a period of 30 days starting on October 27, 2015 and ending November 25, 2015. One comment letter was received from the Regional Water Quality Control Board. This comment letter and CVFPB response can be viewed in Section 9 Public Comments, at the end of the IS/MND. ~~Written comments must be received no later than the close of business (5:00pm) on November 25, 2015. Comments should be emailed to Andrea.Buckley@water.ca.gov or mailed to:~~

~~Andrea Buckley~~
~~Central Valley Flood Protection Board~~
~~3310 El Camino Ave., Rm 151~~
~~Sacramento, CA 95821~~

Copies of this Mitigated Negative Declaration and Initial Study are available at:

Central Valley Flood Protection Board
3310 El Camino Ave., Room ~~151~~170, Sacramento, CA 95821

~~Yuba County Library~~
~~303 Second Street, Marysville, CA 95901~~

~~Yuba County Clerk~~
~~915 8th Street, Suite 107, Marysville, CA 95901~~

Online at: http://www.cvfpb.ca.gov/PublicNotices/

PROPOSED MITIGATED NEGATIVE DECLARATION

Project Title: Western Pacific Interceptor Canal (WPIC) Culvert Replacement Project

Lead Agency: Central Valley Flood Protection Board

Project Location: The proposed project is located near the town of Arboga and Plumas Lake subdivision in Yuba County (Figure 1). The proposed project footprint extends from Plumas Arboga Road north approximately 450 feet.

Project Description: The Central Valley Flood Protection Board proposes to replace a failed drainage culvert on the eastern embankment of the WPIC approximately 450 feet north of Plumas Arboga Road. A sinkhole exists in the vicinity of the culvert and the culvert is not conveying water adequately, requiring it to be removed and replaced.

Findings: Based on the Initial Study (IS), it has been determined that the proposed project would not have any significant effects on the environment because environmental commitments and mitigation measures would be implemented to reduce potential impacts to a less than significant level. This conclusion is supported by the following findings:

1. The proposed project would not impact the following CEQA Appendix G environmental factors:
    a. Agriculture and Forestry Resources
    b. Geology and Soils
    c. Land Use Planning
    d. Mineral Resources
    e. Population and Housing
    f. Public Services
    g. Recreation
    h. Transportation and Traffic
    i. Utilities and Service Systems
2. The proposed project would have a less than significant impact to the following CEQA Appendix G environmental factors:
    a. Aesthetics
    b. Greenhouse Gas Emission
    c. Noise
3. Mitigation has been adopted or project has been changed by CVFPB to reduce potentially significant impacts related to the following CEQA Appendix G environmental factors to a level of less than significant:
    a. Air Quality
    b. Biological Resources
    c. Cultural Resources
    d. Hazards and Hazardous Waste
    e. Hydrology and Water Quality

MITIGATION MEASURES

The following mitigation measures will be implemented by CVFPB to avoid, minimize and mitigate environmental impacts by the proposed project. Implementation of these mitigation measures would reduce the potential environmental impacts of the proposed project to a less than significant level.

Air Quality

Mitigation Measure AQ-1: Implement FRAQMD's Standard Mitigation Measures

FRAQMD requires all projects within the District implement standard mitigation measures (below) (Indirect Source Review Guidelines, June 10, 2010). Where applicable, the following mitigation measures will be implemented by the Sutter Maintenance Yard (SMY) for the Project.

Standard Mitigation Measures:

1. Submittal of a Fugitive Dust Control Plan. Must be received prior to beginning construction work on the project.
2. Implement the Fugitive Dust Control Plan.
3. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation Ill, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0).
4. The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of onsite operation.
5. Limiting idling time to 5 minutes, this saves fuel and reduces emissions. (State idling rule: commercial diesel vehicles- 13 CCR Chapter 10 Section 2485 effective 02/01/2005; off road diesel vehicles- 13 CCR Chapter 9 Article 4.8 Section 2449 effective 05/01/2008).
6. Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
7. Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
8. Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (ARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the ARB or the District to determine registration and permitting requirements prior to equipment operation at the site.

Biological Resources

Mitigation Measure BIO-1: Pre-Construction Environmental Awareness Training
An Environmental Scientist will develop and administer an environmental awareness training program to all construction personnel before construction activities begin. All construction staff working on the project will be required to attend an on-site environmental awareness training given by the environmental staff prior to the commencement of construction activities. The training will include information regarding species identification, natural history, habitat, mitigation measures of special status species (e.g. giant garter snake (GGS), Swainson's Hawk, tricolored blackbird, etc.) and sensitive habitats, including vernal pools, which occur south of the proposed project site.

Mitigation Measure BIO-2: Biological Monitor
An Environmental Scientist will be onsite during ground disturbing activities. If a sensitive species is encountered during construction, the Environmental Scientist shall be contacted and activities shall cease until appropriate corrective measures have been completed or it has been determined that the species will not be harmed.

Mitigation Measure BIO-3: Pre-Construction Wildlife, Bird and Plant Surveys
Pre-construction surveys for wildlife, bird nests (including song bird nests), special status plants, and/or sensitive habitats will be conducted by a qualified biologist prior to construction activities. Additionally, pre-construction surveys shall be implemented as follows:

- Swainson's Hawk: If work is to be conducted during the nesting season (April 1-August 31), pre-construction surveys will be completed prior to construction work within one-half mile of the project site to identify any active nests (eggs or juveniles). Surveys will be completed in accordance with the Recommended Timing and Methodology for Swainson's Hawk nesting Surveys in California's Central Valley (SWA TAC 2000). If an active nest is identified, work will not occur within ¼ mile of the nest until the young has fledged the nest.
- Tricolored Blackbird and other special status raptors: If work is to be conducted during the nesting season (mid-March – early August), pre-construction surveys will be completed prior to construction work within 250 feet of the project site. If an active nest is identified, impacts will be avoided by establishment of appropriate buffers to minimize the impacts. The size of the buffers may be adjusted, depending on the project activity and stage of the nest, if a qualified biologist determines that activity within a reduced buffer would not be likely to adversely affect the adults or their young. No trees or other vegetation with an active nest will be removed until a qualified biologist confirms that the nest is no longer active.
- Valley Elderberry Longhorn Beetle: An Environmental Scientist will survey the vegetation prior to removal to determine if elderberry shrubs are present. If there are elderberry shrubs, the shrubs will be avoided and conservation measures will be implemented according to USFWS protocol.
- Giant Garter Snake: No more than 24 hours prior to construction activities, the project area will be surveyed for GGS by an Environmental Scientist. Surveys will

cover all upland habitat within 200 feet of GGS aquatic habitat and will be repeated if a lapse in construction activity of 2 weeks or greater occurs. CVFPB will report any sighting and any incidental take to USFWS immediately by telephone at (916) 414-6600 and to CDFW at (916) 358-4353. See also MM BIO-4.

- Western Pond Turtle: An Environmental Scientist will survey WPT habitat before work commences. If a western pond turtle is identified within the construction or project footprint area, work will not proceed until the turtle has moved out of the construction or project footprint area on its own.
- Prior to the start of construction, the project site will be surveyed by an Environmental Scientist to establish project boundary, delineate vegetation requiring removal, and mark sensitive biological resources to be avoided. The project boundary and vegetation clearing will not exceed the minimum necessary to facilitate construction activities.

Mitigation Measure BIO-4: Avoid and Minimize Impacts to Giant Garter Snake

- At least ~~10~~ 15 days prior to the commencement of ground-disturbing activities, de-watering activities will take place in the aquatic area directly adjacent to the eastern embankment, where the failed culvert meets the water. After 15 days, exclusionary fencing will be erected around the perimeters of the culvert replacement project site. Prior to fencing installation, the fence line shall be mowed (with a minimum height of 6 inches) in order to conduct a surface survey of potential burrows. Fencing shall be installed with a minimum of 6 inches buried in the ground and a minimum of 24 inches above ground. Fence staking shall be installed on the inside of the exclusion area. One-way escape funnels shall be installed every 50 – 100 feet and sealed along the fence line, to provide an escape for any giant garter snake that may within the exclusion area. The fencing shall enclose the entirety of the site, to the greatest extent feasible. There is open-water to the east of the site, where a cofferdam is to be installed during construction. CVFPB will work with CDFW and USFWS to determine best placement of exclusion fencing within this area. The fencing will be inspected before the start of each work day and maintained by the project proponents until completion of the project. The fencing will be removed only when the project activities within WPIC culvert replacement and staging area site are completed. Exclusion fencing will be maintained as well as any marked features of the construction and staging areas adjacent to sensitive biological resources.
- All construction activity within potential GGS habitat, including marshes, sloughs, ponds, irrigation canals, drainage ditches, and flooded rice fields, will occur from May 1 to ~~October 1~~ September 15. This includes in-water construction and work outside the active stream channel. If construction activity within GGS habitat starts prior to May 1 or may go beyond ~~October 1~~ September 15. USFWS and CDFW will be contacted and additional measures may be necessary to avoid take. If additional measures are deemed necessary they will be implemented.
- CDFW and USFWS will be notified prior to the start of construction.
- If vehicles will be left onsite overnight, they will be surveyed by a biological monitor in the morning to see if GGS are present. If a GGS if found, it will be left alone and

construction staff will wait to start up the engine until the snake has left the site on its own.

- Keep speeds to 20 mph on all roadways within the project footprint.
- Vegetation clearing will be confined to the minimal area necessary to facilitate construction activities. GGS habitat, including marshes, sloughs, ponds, irrigation canals, drainage ditches, and flooded rice fields, within or adjacent to the project site will be flagged and designated as environmentally sensitive areas. These areas will be avoided by all construction personnel.
- Any temporary fill and construction debris will be removed after completion of construction activities, and, wherever feasible, disturbed areas will be restored to pre-project conditions.
- Movement of heavy equipment will be confined to existing roadways, top of the eastern embankment and staging areas, where feasible, to minimize habitat disturbance.
- CVFPB shall coordinate with USFWS and CDFW to develop and implement an appropriate mitigation strategy to compensate for temporary habitat disturbance and reduce the potential for take of giant garter snake. Mitigation would likely include purchasing created giant garter snake habitat at a USFWS- and CDFW-approved mitigation bank. Appropriate mitigation ratios shall be developed during consultation with USFWS and CDFW. CVFPB shall obtain incidental take authorization if deemed necessary by USFWS and/or CDFW. The performance standard is anticipated to be no net loss of giant garter snake habitat.

Mitigation Measure BIO-5: Avoid and Minimize Impacts to Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Construction equipment will be required to stay at least 250 feet away from potential habitat of Vernal Pool Fairy and Tadpole Shrimps. Potential habitat at the project site includes the vernal pool south of Plumas Arboga Road. An Environmental Scientist will provided SMY staff with a map of the channel including delineation of the wetlands and a 250 foot buffer around the wetlands to avoid.

Mitigation Measure BIO-6: Avoidance of Wetlands by Construction Equipment

Construction equipment will avoid driving in the wetted portions of the channel and vernal. The staging area for equipment storage will be located outside of the wetted portions of the channel.

Mitigation Measure BIO-7: Revegetation to Compensate for Construction-Related Effects

Disturbed soil areas will be stabilized using appropriate erosion control BMPs during and at the completion of construction activities. If hydroseeding is used to cover disturbed areas, native grass/forb/herbaceous plant, sterile rye, or other non-invasive seed mixes will be used. If any trees need to be removed or trimmed, a certified arborist will be present to supervise tree removal and trimming to preserve tree health and ensure that appropriate methods are used. Any native willows, oaks and/or other native plantings to be removed will be replanted in or near the project area.

Cultural Resources

Mitigation Measure CULT-1: If historical or unique archaeological resources are accidentally discovered during project activities, all work would temporarily cease in the immediate area until the findings can be assessed by a qualified archaeologist and an appropriate course of action can be determined. If the find is found to be an historical or unique archaeological resource, time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation must be available (CEQA Guidelines §15064.5[f]).

Mitigation Measure CULT-2: If human remains are found, such remains would be subject to the provisions of California Public Resources Health and Safety Code Section 7050.5(b). The requirements and procedures would be implemented, including immediately stopping work in the vicinity of the find and notifying the County Coroner. A Department of Water Resources (DWR) archaeologist would also need to be contacted immediately. If the remains are determined to be those of a Native American, the process for notification of the California Native American Heritage Commission (NAHC) and consultation with the individual(s) identified by the NAHC as the "most likely descendent" is set forth in Section 5097.98 of the California Public Resources Code. Work in the vicinity of the find can restart after the remains have been investigated and appropriate recommendations have been made for their treatment and disposition.

Mitigation Measure CULT-3: If prehistoric archaeological resources or human remains are discovered during construction, DWR will consult with tribal representatives identified by the Native American Heritage Commission to determine whether the find is a tribal cultural resource and to identify culturally appropriate treatment. This consultation will take place concurrently with mitigation measures CULT-1 and/or CULT-2, as appropriate.

Hazards and Hazardous Materials

Mitigation Measure HAZ-1:
Diesel fuel and oil will be used, stored and disposed in accordance with standard protocols for handling of hazardous materials. All personnel involved in use of hazardous materials will be trained in emergency response and spill control.

Mitigation Measure HAZ-2:
During construction activities, SMY staff will prevent oil, grease, fuels, and other petroleum products, toxic chemicals, and any other substances that could be deleterious to aquatic life from contaminating the soil and/or entering waters of the state. SMY staff will immediately remove such substances from any place where they could enter waters of the state and/or adversely affect fish and wildlife resources. SMY staff will attempt to contain any releases or spills of such substances, and shall report any significant spills as soon as possible to the California Emergency Management Agency (Cal-EMA). In the event of a significant spill, work will cease immediately and workers will employ containment methods if it is safe to do so. CVFPB will make notifications to the appropriate agencies within the regulatory time frames.

Mitigation Measure HAZ-3:
A turbidity curtain placed in the water immediately adjacent of the project will reduce impacts to water quality, and in-water work will be avoided to the extent practicable.

Hydrology and Water Quality

Mitigation Measure BIO-7: Avoidance of Wetlands by Construction Equipment

Construction equipment will avoid driving in the wetted portions of the channel and vernal pools. The staging area for equipment storage will be located outside of the wetted portions of the channel.

STATEMENT OF NO SIGNIFICANT EFFECT

CVFPB prepared an Initial Study in support of this Mitigated Negative Declaration. Copies of the Initial Study/Mitigated Negative Declaration (IS/MND) were provided to the State Clearinghouse on October 27, initiating the 30-day public review period, which ~~will~~ ended on November 25, 2015.

Pursuant to Section 21082 of the California Environmental Quality Act, CVFPB has independently reviewed and analyzed the IS/MND for the proposed project and finds that the IS/MND reflects the independent judgment of CVFPB. As the lead agency for the project, CVFPB further finds that the project mitigation and conservation measures will be implemented as stated in the MND. With implementation of these mitigation and conservation measures, the proposed project as modified would have no significant effect on the environment.

I hereby approve this project:

Leslie Gallagher
Executive Officer
Central Valley Flood Protection Board

12.15.17
Date

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ACRONYMS AND ABBREVIATIONS

BMPs	Best Management Practices
CAAQS	California Ambient Air Quality Standards
Cal/EPA	California Environmental Protection Agency
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cfs	Cubic Feet per Second
CGS	California Geological Survey
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon Monoxide
CVFPB	Central Valley Flood Protection Board
dB	Decibels
dBA	A-weighted Decibels
DBH	Diameter Breast Height
DOC	California Department of Conservation
DPR	California Department of Pesticide Regulation
DPS	Distinct Population Segment
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Federal Endangered Species Act
ESU	Evolutionarily Significant Unit
FMO	Flood Maintenance Office
FRAQMD	Feather River Air Quality Management District

GGERP	Greenhouse Gas Emissions Reduction Plan
GGS	Giant Garter Snake
GHG	Greenhouse Gas
HCP	Habitat Conservation Plan
LOS	Levels of Service
LSAA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MRZ	Mineral Resources Zones
NAAQS	National Ambient Air Quality Standards
NACH	California Native American Heritage Commission
NCCP	Natural Community Conservation Planning
NMFS	National Marine Fisheries Service
NO_X	Nitrogen Oxides
NSVPA	Northern Sacramento Valley Planning Area
$PM_{2.5}$	Fine Particulate Matter
PM_{10}	Suspended Particulate Matter
PPV	Peak Particle Velocity
RCEM	Roadway Construction Emissions Model
ROG	Reactive Organic Gases
SMGB	State Mining Geology Board
SMY	Sutter Maintenance Yard
SO_2	Sulfur Dioxide
SR	State Route
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
VELB	Valley Elderberry Longhorn Beetle
WPIC	Western Pacific Interceptor Canal

PROJECT INFORMATION

a) Project Title: Western Pacific Interceptor Canal Culvert Replacement Project

b) Lead Agency Name and Address:
Central Valley Flood Protection Board
3310 El Camino Ave, Suite 170
Sacramento, CA 95821

c) Contact Person and Phone Number:
Andrea Buckley
Environmental Program Manager
Environmental Services and Land Management Branch Chief
Central Valley Flood Protection Board
Phone: 916-574-0332

d) Project Sponsor's Name and Address:
Central Valley Flood Protection Board
3310 El Camino Ave, Suite 170
Sacramento, CA 95821

e) Project Location: The WPIC failed drainage culvert is located on the eastern embankment of the WPIC, approximately 450 feet north of Plumas Arboga Road near the town of Arboga and Plumas Lake subdivision in Yuba County (Figure 1).

f) General Plan Designation: AE-80 which is defined as an Exclusive Agricultural (1 unit/80 acres) zoning district.

g) Zoning: Agriculture

h) Surrounding Land Uses and Setting: Surrounding land uses include agriculture and residential areas.

i) Other Public Agencies Whose Approval is Required: CA Department of Fish and Wildlife, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Sacramento Regional Water Quality Control Board.

1 INTRODUCTION

1.1 PURPOSE OF INITIAL STUDY

Pursuant to Section 15063 of the California Environmental Quality Act (CEQA) Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.), an Initial Study is a preliminary environmental analysis that is used by the lead agency as a basis for determining whether an EIR, a Mitigated Negative Declaration, or a Negative Declaration is required for a project. The CEQA Guidelines require than an Initial Study contain a project description, description of environmental setting, identification of environmental effects by checklist or other similar form, explanation of environmental effects, discussion of mitigation for significant environmental effects, evaluation of the project's consistency with existing, applicable land use controls, and the name of persons who prepared the study.

1.2 IMPACT ANALYSIS

Impact analysis sections were guided using environmental checklists to guide questions for analyses. Each section uses the environmental checklist from the 2015 CEQA Guidelines Appendix G.

1.3 ANTICIPATED PERMITS, APPROVALS AND DECISIONS

- U.S. Army Corps of Engineers Clean Water Act Section 404 permit
- Clean Water Act Section 401 Water Quality Certification from the California Regional Water Quality Control Board, Central Valley Region
- California Department of Fish and Wildlife Streambed Alteration Agreement
- National Historic Preservation Act Section 106 compliance
- California Endangered Species Act Incidental Take Permit
- U.S. Fish and Wildlife Service Federal Endangered Species Act compliance

2 PROJECT DESCRIPTION

This section describes the general project. Specific project details that impact environmental factors will be described under the environmental setting of the corresponding environmental factor section in the initial study.

2.1 DESCRIPTION OF PROJECT

The Western Pacific Interceptor Canal (WPIC), (also known as Western Pacific Railroad Intercepting Channel) is located in Yuba County north of Rio Oso and just east of Highway 70 (Figure 1). The culvert is located on Sacramento-San Joaquin Drainage District (SSJDD) property through the left (east) embankment of the WPIC. The proposed project is located within the boundaries of Reclamation District 784.

The purpose of this project is to remove and replace a failed drainage culvert located on the eastern side of the WPIC, approximately 450 feet north of Plumas Arboga Road. The culvert has a corroded inlet that has collapsed and a sinkhole exists in the embankment, in the vicinity of the damaged culvert. The sinkhole is approximately 11-feet wide by 11-

feet long and 10-feet deep, and spans from the inlet structure to the embankment crown.

This project will consist of the removal and replacement of an approximately 80 linear feet of 24-inch diameter corrugated metal pipe (CMP), replacement of the landside concrete headwall and installation of a new trash rack and flash board weir, installation of a new waterside concrete headwall, and the installation of a new gate riser structure with positive shutoff device at the waterside hinge of the embankment, ~~that extends through the embankment, the landside concrete headwall, the waterside concrete headwall with a flap gate, installation of a gate riser structure with positive shutoff device at the waterside hinge of the embankment,~~ gravel resurfacing of the existing haul road atop the embankment from Plumas Arboga Road approximately 450 feet to the project location, and native grass reseeding to prevent embankment erosion (Figure 2). DWR's Sutter Maintenance Yard (SMY) will be contracted by the CVFPB to perform construction activities.

The work will begin with the excavation and removal of the current deteriorated pipe, removal of the existing headwall~~s~~, and over-excavation of the area where erosion is occurring to determine site condition and to repair any potential voids. The pipe will be replaced with approximately 80 feet of 24-inch ~~double walled high-density polyethylene (HDPE) corrugated pipe~~ reinforced concrete pipe (RCP). The RCP pipe will be installed in accordance with California Code of Regulations (CCR) Title 23 standards for pipelines through a levee. The excavation will be backfilled using the excavated soil and any additional soil needed will be imported and meet CCR Title 23 standards for embankment fill. Compaction testing will be performed. Prior to placement of the 24-inch RCP the over-excavated area within the levee prism shall be backfilled to above the top of proposed pipe. Once the area is backfilled to an elevation above the top of pipe, a trench with vertical side walls will be excavated into the compacted material at a minimum width of 48 inches (two times the pipe diameter) and the RCP pipe will be installed. New precast or cast-in-place (CIP) headwall structures will be installed at the landside and waterside toes. The landside structure will include a flash board weir and trash rack. The waterside structure will include a flap gate. A new gate riser structure with a positive shutoff device will be installed within the waterside hinge of the embankment. ~~A new precast headwall with flap gate on the water side toe and new precast headwall on the land side toe will be installed in addition to a gate riser structure with a positive shutoff device at the water side hinge of the embankment.~~

Equipment will include: a dozer, excavator, vibratory compactor, water truck, dump trucks, backhoe and other typical light construction equipment will be used by SMY to complete the repair. Construction equipment is detailed in Section 8.

Proposed project activities are as follows:

- Site Preparation – SMY staff will perform site work. Only the vegetated areas within the project footprint (Figure 2) will be cleared of brush and trees and then graded. SMY staff will mobilize equipment and material to the site from the SMY facility and the nearby RD 784 equipment yard.

- Haul Road Surfacing – SMY staff will level and gravel the maintenance road atop the WPIC eastern embankment from Plumas-Arboga Road approximately 450 feet north to the centerline of the existing culvert. A grader and compactor will be used to level the road and compact gravel as an upgrade to the existing haul road.
- Staging Area – The upland berm located at the waterside toe of the embankment will be graded and compacted as a staging area for the project (Figure 2). Ramps off the embankment to the berm will be constructed with fill. Gravel surfacing will be placed for a haul road bypass down the ramps to the existing lower berm to allow cross traffic and staging.
- Dewatering – 15 days prior to ground disturbing activities, a temporary turbidity curtain immediately upstream (east of the embankment) of the concrete headwall will be installed in the water. A temporary small earth dam will be constructed immediately upstream of the inlet side of the old culvert headwall behind the turbidity curtain. The water in the culvert will be temporarily blocked by this dam for up to a week. The culvert will be allowed by gravity to drain until it is dry. Any excess inflow water to the pool in front of the dam will be pumped over the embankment with submersible pumps into the WPIC.
- Excavation and Removal - An excavator will be used to excavate a trench in the embankment in order to remove and dispose of the existing culvert. The excavated soil will be stockpiled on-site at the proposed stockpile location for the trench and sinkhole. The existing culvert will be taken to an appropriate State licensed disposal site. Approximately 150 cubic yards of soil and road base will be excavated in order to place the new culvert pipe.
- Culvert Pipe Installation - The approximate 80-foot-long 24-inch CMP culvert pipe will be replaced with a 24-inch ~~HDPE~~ RCP culvert pipe, the same size as the existing culvert. The culvert will be backfilled in accordance with CCR Title 23 standards for embankment fill using excavated soil and additional soil as needed. The fill will be compacted to the top of the embankment.
- Concrete Head Wall Structures– The old headwall will be dug out and disposed of at a State licensed disposal facility. A new landside headwall will be installed as a precast or cast in place concrete element depending on supply availability. Similar to the old headwall, the new headwall will have a flash board weir that can control the elevation of the upstream channel for rice production. A new gate riser structure with positive shutoff device will be installed in the embankment, on the waterside, behind the headwall to allow the culvert to be closed off manually. A new concrete outfall wall will also be installed. A flap gate will be added at the outlet headwall to prevent backflow coming from WPIC into surrounding fields during high flows.
- Pipe Gate – A new pipe gate shall be installed at the entrance onto the levee crown from Plumas Arboga Road.
- Site Restoration: – The site will be returned to the condition that existed prior to culvert replacement. The embankment will be reseeded with a native grass mix to prevent erosion and the haul road atop the embankment will be resurfaced with gravel from Plumas Arboga Road, approximately 450 feet, to the project area.

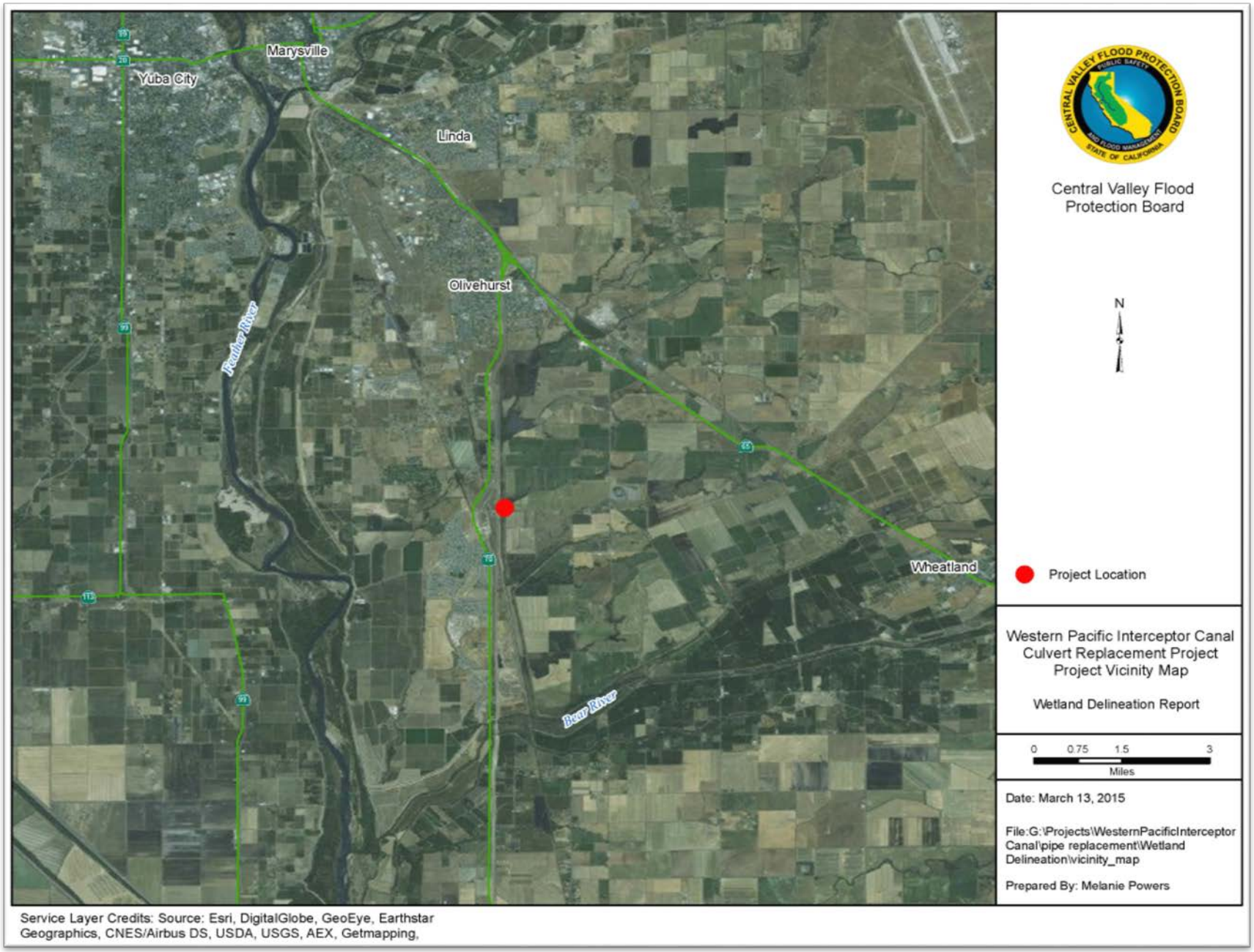
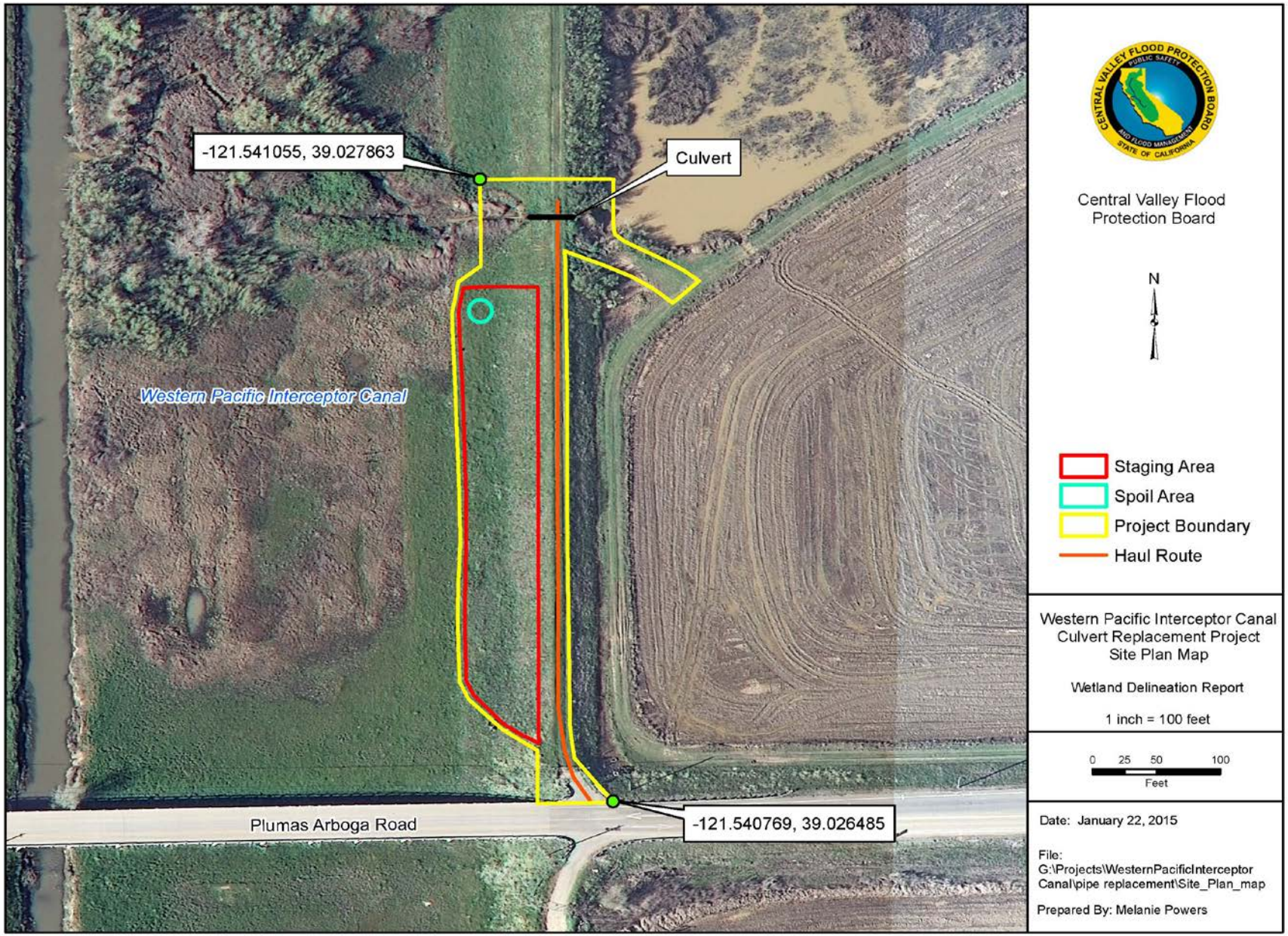


Figure 1. Western Pacific Interceptor Canal Culvert Replacement Project Vicinity



Service Layer Credits: CVFED LiDAR data
Date: October 18, 2010

Figure 2. Western Pacific Interceptor Canal Culvert Replacement Project Site Plan

Figure 3. WPIC damaged culvert to be replaced

Figure 4. WPIC headwall to be replaced

Figure 5. Looking west toward WPIC channel and proposed staging area in foreground.

Figure 6. Looking south on eastern embankment. Orange construction fencing approximate location of culvert.

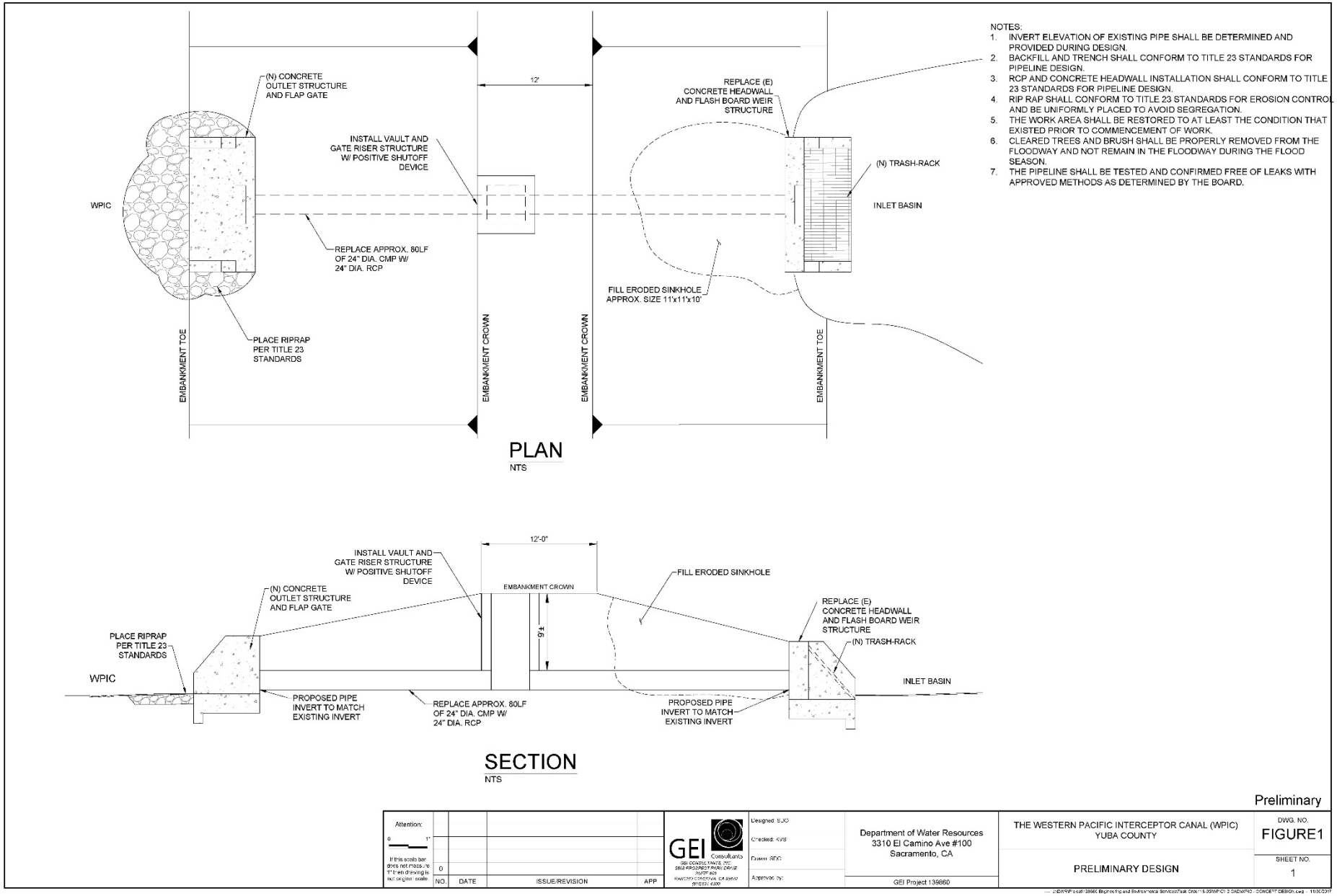


Figure 7. WPIC Culvert Replacement Plans and Cross Section

3 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed 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 and Soils
☐ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials	☒ Hydrology and Water Quality
☐ Land Use and Planning	☐ Mineral Resources	☐ Noise
☐ Population and Housing	☐ Public Services	☐ Recreation
☐ Transportation and Traffic	☐ Utilities and Service Systems	☒ Mandatory Findings of Significance

4 DETERMINATION

On the basis of the initial evaluation that follows:

☐ I find that the proposed project WOULD 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, the project impacts were adequately addressed in an earlier document or there will not be a significant effect in this case because revisions in the project have been made that will avoid or reduce any potential significant effects to a less than significant level. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.

Signature — Date: 12.15.17

Leslie Gallagher, Executive Officer — Printed Name

Central Valley Flood Protection Board — For

4.1 AESTHETICS

4.1.1 Environmental Setting

The scenic character of the proposed project area is characterized by agricultural land and nearby developed subdivisions. The WPIC is part of the Sacramento River Flood Control Project. The WPIC channel is located west of the proposed project site, while agriculture fields and wetlands are located east of the failed culvert location. The proposed project footprint is approximately 0.75 acres just north of Plumas-Arboga Road.

Visibility within the proposed project area consists mostly of the surrounding WPIC to the north, west and south, and agriculture fields to the east. In addition, developed subdivisions in the nearby community of Plumas Lake. The proposed project activities would require staging equipment and materials which would create a temporary impact (approximately 1 month) to the proposed project area's visual character.

4.1.2 Environmental Checklist and Discussion

AESTHETICS Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) 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?	☐	☐	☐	☒

Discussion

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

No impact. Construction materials and equipment will be visible during culvert replacement activities. The proposed project activities are not located in a scenic vista, nor would they change the scenic character of the area. The proposed project would not substantially damage scenic resources.

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 scenic resources, such as wild and scenic rivers or scenic highways in the vicinity of the proposed project. The proposed project would not substantially damage scenic resources.

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

Less than significant impacts. The character of the area is defined by rice fields to the east, and the WPIC to the west. Temporary construction activities and staging would not substantially degrade the existing visual character or quality of the site or the surroundings. Upon completion of the project, the visual character will be improved by the replacement of rusted and collapsed infrastructure will new infrastructure.

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

No impact. The proposed project is limited to culvert replacement. There are no new sources of substantial light or glare which would adversely affect day or nighttime views in the area.

4.2 AGRICULTURAL AND FORESTRY RESOURCES

4.2.1 Environmental Setting

The proposed project vicinity consists mostly of the WPIC channel, agriculture fields and developed subdivisions in the nearby community of Plumas Lake. Prime Farmland, by definition from California Department of Conservation is located within the vicinity, but is not located within the proposed project footprint. The proposed project footprint encompasses approximately 0.75 acres from the Plumas Arboga Road north approximate 450 feet (Figure 2).

The California Department of Conservation California Important Farmland Finder indicates there is no Prime Farmland, Farmland of Statewide Importance or Unique Farmland within the footprint. Culvert replacement activities would not create changes to zoning or effect agricultural uses (CDOC, 2014).

4.2.2 Environmental Checklist and Discussion

AGRICULTURE AND FORESTRY RESOURCES In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping Monitoring Program of the California Resources Agency, to nonagricultural 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?	☐	☐	☐	☒

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping Monitoring Program of the California Resources Agency, to nonagricultural use?
No impact. There is no Prime Farmland, Farmland of Statewide Importance or Unique Farmland located within the proposed project footprint. Culvert replacement activities would not alter the existing land use.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?
No impact. Areas within the vicinity of the proposed project are zoned for agricultural use. Yuba County does not participate in the Williamson Act, therefore there would be no conflict with a contract. Culvert replacement activities would not alter the existing land use.

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 activities are not located within forest land, timberland or timberland zoned land.

d) Result in the loss of forest land or conversion of forest land to non-forest use?
No impact. The proposed Project activities are not located within forest land.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?
No impact. The proposed Project activities do not involve changes to the existing

environment which could result in conversion of Farmland to non-agricultural use.

4.3 AIR QUALITY

4.3.1 Environmental Setting

The proposed project site is located within Yuba County, which is part of the Sacramento Valley Air Basin. The Feather River Air Quality Management District (FRAQMD) encompasses Yuba County and the proposed project area. SMY staff would drive approximately thirteen to sixteen (13-16) miles to the site during culvert replacement and construction activities at WPIC.

The California Air Resources Board (CARB) and the US Environmental Protection Agency (EPA) have set ambient air quality standards for California through the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS). The CAAQS and NAAQS established standards for six air pollutants (criteria pollutants): carbon monoxide (CO_2), nitrogen oxides (NO_x), ozone (O_3), fine particulate matter ($PM_{2.5}$), suspended particulate matter (PM_{10}), and sulfur dioxide (SO_2). As part of the CAAQS, CARB also adopted standards for hydrogen sulfide, sulfates, lead, vinyl chloride, and visibility reducing particles.

CARB and the EPA evaluate whether counties have met the CAAQS and NAAQS by using monitored pollutant data throughout California to create updated pollutant attainment status designations for each county. Each county is designated as attainment or nonattainment for each pollutant or is designated unclassified if there is not enough information. Table 1, below, describes the pollutant attainment status for Yuba County. Yuba County has not met State pollutant attainment standards for particulate matter (PM_{10}) or standards for Ozone. However, in April 25, 2013, CARB adopted *Resolution 13-14* for FRAQMD's *Yuba City-Marysville PM 2.5 Maintenance Plan and Redesignation Request* that concludes the area has reached attainment and to request CARB's approval for EPA to redesignate the Yuba City-Marysville PM2.5 nonattainment area to attainment for the PM2.5 NAAQS. The notice was published in the Federal Register December 9, 2014 and the rule became effective January 8, 2015.

Table 1. FRAQMD Area Designations for State and Federal Air Quality Standards

Designation/Classification		
Pollutants	State	Federal
1-Hour Ozone	S. Sutter: Serious Nonattainment The Balance of FRAQMD: Nonattainment-Transitional*	No Federal Standard
8-Hour Ozone	Nonattainment-Transitional *	S. Sutter: Severe Nonattainment Sutter Buttes (>2000ft): Nonattainment The Balance of FRAQMD: Unclassified/Attainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Attainment**	Attainment (As of Jan 8, 2015)***
Carbon Monoxide	Sutter County: Attainment Yuba County: Unclassified	No Federal Standard
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified/Attainment
Sulfates	Attainment	No Federal Standard
Lead	Attainment	No Federal Standard
Hydrogen Sulfide	Unclassified	No Federal Standard
Visibility Reducing Particles	Unclassified	No Federal Standard

*****The District has been re-designated from Nonattainment to Nonattainment Transitional for the State designation for ozone occurs by operation of law. The change was confirmed by the CARB Board of Directors on March 25, 2010. [HSC §40925.5]
******The District has been redesignated to attainment for the annual $PM_{2.5}$ CAAQS. The change was adopted on the March 25, 2010, by the CARB Board of Directors.
*** EPA approves California's request to redesignate the Yuba City-Marysville area to attainment for the 2006 24-hour $PM_{2.5}$ NAAQS and their plan for maintaining that standard for at least ten years

Table 2. FRAQMD Thresholds of Significance

Project Phase	Nitrogen Oxides (NO_x)	Reactive Organic Gases (ROG)	Particulate Matter less than 10 microns (PM_{10})	Particulate Matter less than 2.5 microns ($PM_{2.5}$)	Greenhouse Gases (CO_2, CH_4)
Operational	25 lbs/day	25 lbs/day	80 lbs/day	Not Established	Not Established
Construction	25 lbs/day multiplied by project length, not to exceed 4.5 tons/year*	25 lbs/day multiplied by project length, not to exceed 4.5 tons/year*	80 lbs/day	Not Established	Not Established

*NO_x and ROG Construction emissions may be averaged over the life of the project, but may not exceed 4.5 tons/year

The FRAQMD Guidelines recommends the Roadway Construction Emissions Model (RCEM) to calculate emission from linear construction projects and the SMAQMD Construction Mitigation Calculator to measure NOx reductions. The RCEM model calculates emissions based on fugitive dust and vehicle exhaust. SMAQMD's Construction Mitigation calculator calculates NOx reductions by comparing Project off-road vehicles with 50 or greater horsepower against the Average State Fleet. FRAQMD distinguishes between two types of projects, Type 1 and Type 2. Type 1 projects are land

use projects in which an operational phase exists. Type 2 projects have no operational phase. The proposed Project consisting of culvert replacement activities would be considered a Type 2 project (FRAQMD, 2010).

Emissions Calculation

Emissions from the proposed project were estimated using the RCEM. Data inputs for the RCEM includes construction duration, soil type, project length, total project area, use/no use of a water truck, amount of soil imported and exported, and the average truck capacity. An equipment list was used to zero out unnecessary equipment in the RCEM. Estimated Project emissions will not exceed FRAQMD's daily NOx threshold of 25lbs/day. Table 2 shows the estimated emissions for the proposed Project.

Table 2. Pollutants Emissions of Proposed Project

Project Phase	Nitrogen Oxides (NO_x)	Reactive Organic Gases (ROG)	Particulate Matter less than 10 microns (PM_{10})	Particulate Matter less than 2.5 microns ($PM_{2.5}$)
Total	0.2 tons	Less than 0.1 tons	0.1 tons	Less than 0.1 tons
	13.3 lbs/day	Less than 6.6 lbs/day	8.7 lbs/day (maximum)	2.6 lbs/day (maximum)
FRAQMD Thresholds	25 lbs/day multiplied by project length, not to exceed 4.5 tons/year*	25 lbs/day multiplied by project length, not to exceed 4.5 tons/year*	80 lbs/day	Not Established
Significant?	No	No	No	N/A

*NOx and ROG Construction emissions may be averaged over the life of the project, but may not exceed 4.5 tons/year
**FRAQMD has not established a TOS for GHGs. GHGs are discussed in the GHG section 6.7 of this environmental document.
***GHG emissions include equipment and concrete emissions. Equipment emissions were calculated using RCEM and concrete emissions were calculated using the Flowers and Sanjayam life cycle approached. Tons were converted to Metric Tons. The calculations can be found in Section 9.7.

4.3.2 Checklist and Discussion

AIR QUALITY **Where a**vailable, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) 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?	☐	☐	☐	☒

Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?
No Impact. FRAQMD has set Air Quality standards for the proposed project area. The proposed project would not conflict with or obstruct the air quality plan developed by FRAQMD.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
Less than significant impact. The proposed project would involve the use of construction equipment, and exhaust fumes from this equipment are a direct source of the criteria pollutants carbon monoxide (CO), particulate matter between 2.5 and 10 micrometers in diameter (PM_{10} and $PM_{2.5}$), NO_x, SO^2, and ROG. NO_x emissions would not exceed FRAQMD's 25lbs/day. However, FRAQMD requires that any project occurring in the district implement FRAQMD's Standard Mitigation Measures (below). Air quality impacts would be less-than-significant. See Appendix A for more detailed information on the Air

Quality analysis.

Mitigation Measure AQ-1: Implement FRAQMD's Standard Mitigation Measures
FRAQMD requires all projects within the District implement Standard mitigation measures (below) (Indirect Source Review Guidelines, June 10, 2010). Where applicable, the following mitigation measures will be implemented by SMY for the project.

Standard Mitigation Measures:

1. Submittal of a Fugitive Dust Control Plan. Must be received prior to beginning construction work on the project.
2. Implement the Fugitive Dust Control Plan.
3. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation Ill, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0).
4. The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of onsite operation.
5. Limiting idling time to 5 minutes, this saves fuel and reduces emissions. (State idling rule: commercial diesel vehicles- 13 CCR Chapter 10 Section 2485 effective 02/01/2005; off road diesel vehicles- 13 CCR Chapter 9 Article 4.8 Section 2449 effective 05/01/2008).
6. Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
7. Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
8. Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (ARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the ARB or the District to determine registration and permitting requirements prior to equipment operation at the site.

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 proposed project region is in nonattainment under an applicable federal or State ambient air quality standards. The emission levels of criteria air pollutants from construction equipment were estimated using the Roadway Construction Emissions Model (RCEM). The Project would not generate criteria air pollutants in quantities that exceed the threshold limits set by FRAQMD.

d) Expose sensitive receptors to substantial pollutant concentrations?
Less than significant impact. The closest community is Plumas Lake, with the closest residence located within a mile west of the WPIC. The FRAQMD Indirect Source Review Guidelines provide sensitive receptor examples to include schools, day care centers, park/playgrounds, hospitals or nursing centers, and residential dwelling units. The guidelines further state if a project is located within 1,000 feet of a sensitive receptor location, the impact should be included in an environmental analysis (FRAQMD, 2010). There are no hospitals or schools within close proximity to the project. The proposed project is located within 1,000 feet of a residential dwelling, which is located west of the WPIC. However, construction of the proposed project would not produce substantial pollution concentrations (see Appendix A). In addition implementation of FRAQMD's Standard Mitigation Measures will minimize potential impacts to sensitive receptors. Since construction of the proposed project is temporary in nature (lasting approximately 30 days) and construction emissions are less than FRAQMD's significance thresholds, the potential impacts to sensitive receptors would be less-than-significant.

e) Create objectionable odors affecting a substantial number of people?
No impact. The proposed project is limited to temporary construction activities. The proposed project would not create objectionable odors.

4.4 BIOLOGICAL RESOURCES

4.4.1 Environmental Setting

The area surrounding the proposed project footprint is characterized by riparian vegetation north and south on the water-side eastern embankment slope, open water and emergent vegetation to the east of the embankment, and the WPIC channel to the west. The WPIC channel surrounding the proposed project footprint is dominated by native and non-native herbaceous species with patches of Himalayan blackberry (*Rubus armeniacus*), and willow scrub communities.

The plant communities surrounding the proposed project footprint consist primarily of native and non-native herbaceous species including; medusa head (*Elymus caput-medusae*), perennial ryegrass (*Festuca perennis*), Baltic rush (*Juncus balticus*), Santa Barbara sedge (*Carex barbarae*), creeping wildrye (*Elymus triticoides*), mustard (*Brassica nigra*), soft chess brome (*Bromus hordeaceous*), yellow star-thistle (*Centaurea solstitialis*), wild chicory (*Cichorium intybus*), prickly lettuce (*Lactuca serriola*), perennial pepperweed (*Lepidium latifolium*) and curly dock (*Rumex crispus*). The riparian and willow scrub communities are found adjacent to the damaged culvert. The riparian community consists mainly of box elder (*Acer negundo*), Fremont cottonwood (*Populus fremontii*), arroyo willow (*Salix lasiolepis*), Goodding's black willow (*Salix gooddingii*), and an understory of California rose (*Rosa californica*), California blackberry (*Rubus ursinus*), Himalayan blackberry and poison oak (*Toxicodendron diversilobum*). The willow scrub community is dominated by sandbar willow (*Salix exigua*) and the emergent marsh to the east is dominated by tule (*Schoenoplectus acutus*) and cattail (*Typha* sp.)

There is a vernal pool just south of Plumas Arboga Road that contains multiple vernal pool indicative plant species including coyote thistle (*Eryngium castrense*), white navarretia (*Navarretia leucocephala*), popcorn flower (*Plagiobothrys stipitatus*), woolly marbles (*Psilocarphus brevissimus* var*. micranthus*), hyssop loosestrife (*Lythrum hyssopifolia*) and gum plant (*Grindelia camporum*). This area will not be impacted by the proposed project.

4.4.2 Description of Special Status Species and Their Habitat

CVFPB conducted several field reconnaissance visits to determine if special status species or habitats occur within or adjacent (within 500 feet) of the damaged culvert project footprint. Additionally, CVFPB conducted a records search of the USFWS species list for USGS Olivehurst 7.5-minute Quadrangles (USFWS 2013), CDFW's California Natural Diversity Database (CNDDB) for the project area (CDFW 2014) and a California Native Plant Society (CNPS) online inventory of rare and endangered plants for the Olivehurst 7.5-minute Quadrangles (CNPS 2013). Using the information obtained from the database records search and field reconnaissance, a list of special status species and habitat with the potential to support those species occurring in the project area was developed. Table 3 includes the scientific and common name for federal and State special status species, its status, a brief description of its habitat, and its potential for occurrence within the proposed Project area.

Table 3. USFWS and CNPS Special Status Species List for the Meridian USGS 7.5' Quadrangle (including CNDDB occurrences).

Sensitive Species/Habitat	Common Name	Status	Habitat	Potential for Occurrence
BIRDS				
Agelaius tricolor	Tricolored Blackbird	SE Emergency Listing	Central Valley; nest in dense colonies of cattails, tules, willows, blackberries and shrubs. Breeds mid-April - late July.	~~Moderate~~ High: Adjacent to the project footprint, there are blackberry, and sandbar willow patches that could provide nesting habitat for the species. There is foraging habitat within the WPIC and in the adjacent agricultural fields. There are several previous CNDDB sightings adjacent to WPIC channel.
Buteo swainsoni	Swainson's Hawk	ST	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands and irrigated pastures. Breeds March - late August.	Moderate: Adjacent to the project footprint, there is riparian habitat including large trees that could serve as nest trees for the species. There is foraging habitat within the channel and in the adjacent agricultural fields. There are several previous CNDDB sightings adjacent to WPIC channel.
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FT/SE	Large contiguous patches of multilayered riparian habitat greater than 20 hectares.	None: Lack of adequate and suitable habitat at or adjacent to the proposed project area. No CNDDB species occurrences within 1-mile of the project.
INVERTEBRATES				
Branchinecta lynchi	Vernal Pool Fairy Shrimp	FT	Valley-foothill grassland habitats with vernal pools.	None: There is one vernal pool south of the project site that may provide habitat for this species, but this pool is across Plumas Arboga road from the proposed project and will not be impacted. There are no CNDDB occurrences within 1-mile of the project site.
Desmocerus californicus dimorphus	Valley Elderberry Longhorn Beetle	FT	VELB occur in association with elderberry shrubs.	Low: No elderberry shrubs have been identified at or within 100 feet of the project site. There are no CNDDB occurrences within 1-mile of the project site.

Sensitive Species/Habitat	Common Name	Status	Habitat	Potential for Occurrence
Lepidurus packardi	Vernal Pool Tadpole Shrimp	FE	Unplowed grass-bottomed swales and pools; some mud-bottomed and highly turbid.	None: There is one vernal pool south of the project site that may provide habitat for this species, but this pool is across Plumas Arboga road from the proposed project and will not be impacted There are no CNDDB occurrences at the project site but there is one within 1-mile of the project site, on the west side of the west levee.
Linderiella occidentalis	California Linderiella	NL	Vernal pools and other seasonal wetlands.	None: There is one vernal pool south of the project site that may provide habitat for this species, but this pool is across Plumas Arboga road from the proposed project and will not be impacted. There are no CNDDB occurrences at the project site but there is one CNDDB occurrence within one-mile of the project site. This species used to be listed by USFWS as a Species of Concern. However the Sacramento USFWS no longer maintains a Species of Concern List therefore this species is not addressed further in this document.
Branchinecta conservatio	Conservancy Fairy Shrimp	FE/SE/X	Large, long-lasting, cool-water vernal pools with moderately turbid water	None: No habitat present at proposed project area.
Elaphrus viridis	Delta Green Ground Beetle	FT	Margins of vernal pools in California's Central Valley	None: No habitat present at proposed project area.
Ambystoma californiense	California Tiger Salamander, Central Population	FT	Grasslands and low foothills with pools or ponds for breeding	None: Lack of adequate and suitable habitat. No CNDDB species occurrences within 1-mile of the project.
PLANTS				
Monardella venosa	Veiny Monardella	CNPS 1B.1	Found on heavy clay soils in cistmontane woodland and valley/foothill grasslands.	None: Species thought to be extinct when surveys were conducted in the 1980's. Since 1992, one population is known to occur in Butte County and the one in Tuolomne County was relocated. There is continual disturbance throughout the channel.

Sensitive Species/Habitat	Common Name	Status	Habitat	Potential for Occurrence
Sagittaria sanfordia	Sanford's Arrowhead	CNPS 1B.2	Marshes and swamps in the Central Valley.	Low: There are emergent marshes adjacent to the project site. There is one CNDDB occurrence from a 1955 collection that was mapped as best guess around 3 air miles northwest of the Rio Oso Post Office. There is continual disturbance adjacent to the project site.
REPTILES				
Emys marmorata	Western Pond Turtle	SSC	Permanent ponds, lakes, streams or permanent pools with intermittent streams. Require submerged logs, rocks, floating vegetation or mud banks for basking.	Low: There are well watered areas with an abundance of herbaceous aquatic vegetation that may provide habitat for WPT. There are no CNDDB occurrences within 1-mile of the project site. Minimal basking habitat exists at the project site.
Thamnophis gigas	Giant Garter Snake	FT/ST	Adequate water during the active season, emergent, herbaceous wetland vegetation, grassy banks and uplands for cover and winter refugia.	Moderate: There is active rice farming and multiple wetlands with tule, cattail and other emergent vegetation that may provide habitat for GGS within and adjacent to the proposed project site. There is one CNDDB species occurrences just below the confluence of WPIC and Bear River, approximately 5 miles south of the project area.
FISH				
Oncorhynchus mykiss	California Central Valley Steelhead DPS	FT/X	Central Valley rivers; Delta, San Francisco Bay estuary. Requires cold, freshwater streams with suitable spawning gravel.	None: Critical habitat is designated in a segment of Bear River for this species. Bear River, which is located at the southern end of WPIC, is out of the project area. There is minimal to no access for fish into the low flow channels in WPIC from Bear River. Construction activities will have no impact on this species.
Oncorhynchus tshawytscha	Central Valley Spring-run Chinook Salmon Evolutionary Significant Unit (ESU)	FT/ST/X	Central Valley rivers; Delta, San Francisco Bay estuary. Requires cold, freshwater streams with suitable spawning gravel.	None: Critical habitat is designated in a segment of Bear River for this species. Bear River, which is located at the southern end of WPIC, is out of the project area. There is minimal to no access for fish into the low flow channels in WPIC from Bear River. Construction activities will have no impact on this species.

(FE) Federally Listed Endangered
(FT) Federally Listed Threatened
(SE) State Listed Endangered - CDFW
(ST) State Listed Threatened - CDFW
(SSC) Species of Special Concern - CDFW
(CNPS) California Native Plant Society
(X) Critical Habitat
(NL) Not Listed

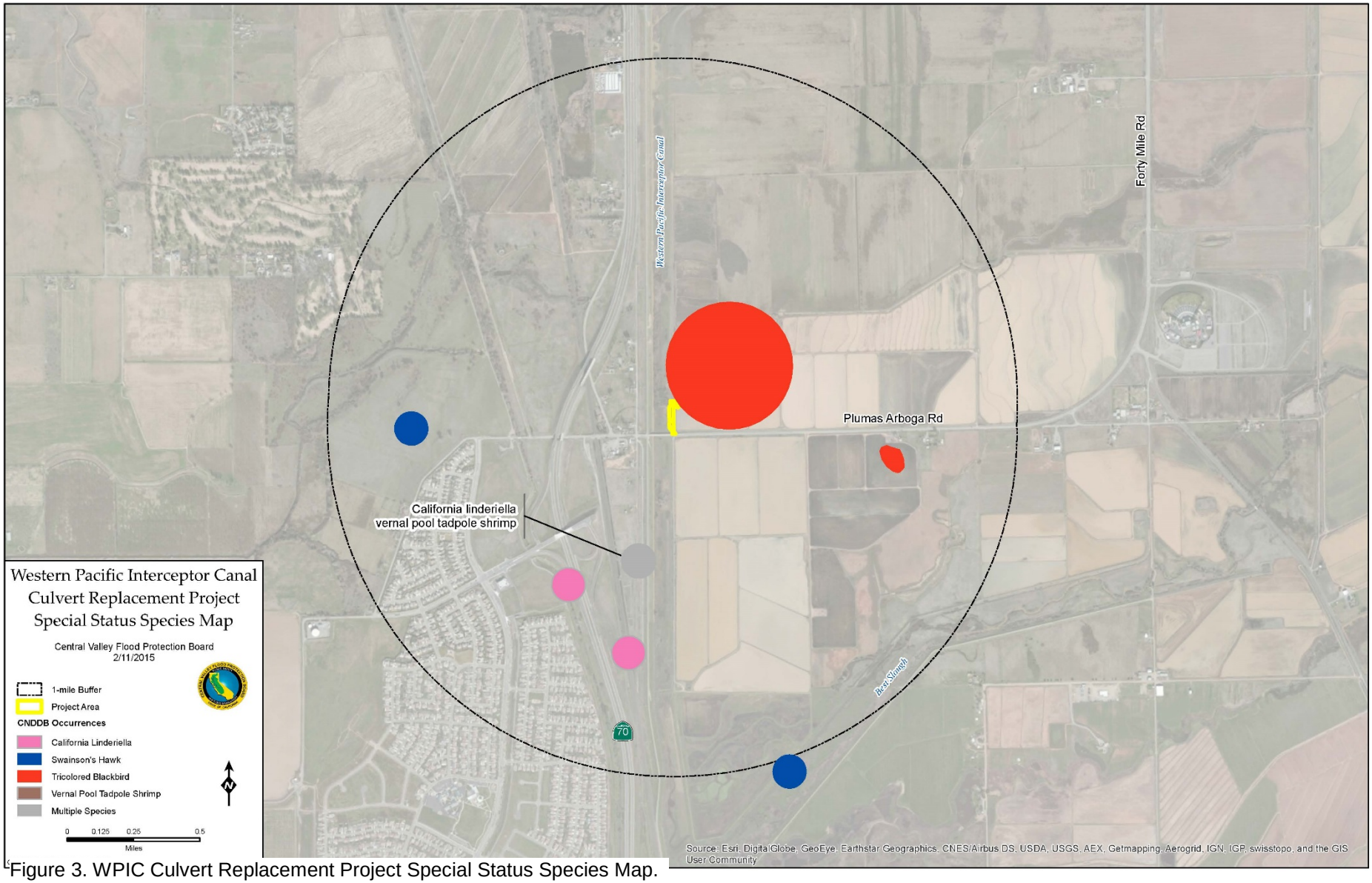


Figure 3. WPIC Culvert Replacement Project Special Status Species Map.

The following sections describe the special-status species with a potential to occur in the project area. Species that have no potential of occurrence are not included in the discussion. In addition, species listed on the CNPS inventory of rare and endangered plants are also described below.

4.4.3 Birds

4.4.3.1 Swainson's Hawk

The Swainson's Hawk is State listed as Threatened by CDFW under CESA. It is a long-range migratory raptor, flying as far south as Argentina, where it overwinters. The Swainson's Hawk returns to the Central Valley around March 1 and has usually selected a nest site by the March 31. In California, Swainson's Hawks range throughout the Central Valley, with the highest nesting densities found in Yolo, Sacramento and San Joaquin counties. Preferred habitat features include large open native grasslands, pastures, or agriculture fields with low to moderate vegetation heights for foraging (Schlorff and Estep 1993). The Swainson's Hawk starts nesting in April or May and continues until July through mid-September. Preferred nesting habitats are in lone trees or utility poles in large flatlands with valleys, plateaus, large flood plains and low rolling hills (Wheeler 2003, Bloom 1980). In the Central Valley, the majority of Swainson's Hawks tend to nest within a mile of riparian habitat (Bloom 1980). The average clutch size is 2 to 3 eggs, with a range of 1 to 4, and the incubation period is about 28 days. The young fledge at about 38 to 46 days after hatching and typically remain with their family until fall migration in late August (Wheeler 2003).

There is one CNDDB occurrence within 1-mile of the project site, and 1 just outside the 1-mile buffer. No active nests were observed in the project area during biological reconnaissance surveys. There is suitable nesting and foraging habitat surrounding the proposed Project footprint. The proposed Project will remove minimal amount of vegetation on the water-side slope of the eastern embankment. Equipment and people may disturb nesting birds if active nests are present during construction activities, therefore there is a potential that the proposed project may impact Swainson's Hawk.

4.4.3.2 Tricolored Blackbird

The Tricolored Blackbird is State listed as Endangered by CDFW under CESA through an emergency listing process effective December 29, 2014 – June 30, 2015. The Tricolored Blackbird is a permanent resident of California, but makes extensive migrations during the breeding season and in winter. Major wintering concentrations occur in and around the Sacramento-San Joaquin River Delta and coastal areas. The Tricolored Blackbird typically breeds from mid-March to early August, but can breed as late as September to October as seen in some populations in the Central Valley and at Point Reyes (Beedy 2008). Tricolored Blackbird select breeding sites that include open accessible water, a protected nesting substrate (including either flooded or thorny/spiny vegetation), and sites within a few kilometers of suitable foraging space that provides adequate insect prey (Beedy and Hamilton 1999). Satellite colonies can form near large nesting colonies if suitable habitat is present.

There are large patches of Himalayan blackberry bushes, sand bar willow and emergent

marsh species growing adjacent to the project site that could potentially serve as nesting areas for the Tricolored Blackbird. Suitable foraging habitat occurs adjacent to the project site. No nesting colonies have been observed at the project site. There are several CNDDB occurrences within 1-mile of the project site, including one large colony that was observed in 2012 to the east and immediately adjacent to the proposed project location. (Figure 3).

4.4.4 Herps and Reptiles

4.4.4.1 Giant Garter Snake

The Giant Garter Snake (GGS) is federally listed as Threatened by USFWS under ESA, and State Threatened by CDFW under CESA. While historically the GGS ranged in wetlands throughout the Central Valley to the Sierra Nevada foothills, the current distribution ranges from Chico to central Fresno County (USFWS 2006).

The following are essential habitat components for the GGS: (1) adequate water during the snake's active season (early spring through mid-fall) to maintain dense populations of food organisms, such as fish and amphibians; (2) emergent, herbaceous wetland vegetation with muddy bottoms, such as cattails and bulrushes, for escape cover during the active season; and (3) upland habitat with grassy banks and openings in waterside vegetation for basking during the active season and shielding from flood waters during the inactive winter (USFWS 2009). GGS is found in agricultural wetlands such as irrigation and drainage canals; rice fields; sloughs; ponds; small lakes; low gradient streams; and adjacent uplands in the Sacramento Valley (USFWS 2006). As a highly aquatic species, GGS is typically absent from large rivers for a number of reasons including presence of large predatory fish, dominance of adjacent uplands by thick riparian vegetation which lacks sufficient basking sites, relatively rapid flows, and heavy flooding (Brode 1988; Hansen 1988).

There is one CNDDB occurrence of GGS at the confluence of WPIC and the Bear River, approximately 4 miles south of the proposed project location. Based on a survey conducted in July 2014 by DWR Environmental Scientists, portions of WPIC including the low flow channels and emergent marshes may provide suitable habitat for GGS.

4.4.4.2 Western Pond Turtle

The western pond turtle (WPT) is listed as a Species of Special Concern by the CDFW. WPT is found in Pacific-slope drainages to an elevation of approximately 4,600 feet. They are found along ponds, marshes, rivers, streams, and irrigation ditches that typically have muddy or rocky bottoms and grow aquatic vegetation. Preferred habitat includes well watered areas with an abundance of herbaceous aquatic vegetation (Stebbins 2003). The species requires basking sites such as downed partially submerged logs, mudbanks, or mats of floating vegetation. The species prefers habitats with stable banks and open areas to bask in, as well as underwater cover (i.e., refugia) provided by logs, large rocks, bulrushes, or other vegetation. WPT generally leaves the aquatic site only to reproduce and to hibernate, which typically takes place under leaf litter from October/November to March/April. Egg-laying typically occurs in May and June, and may take place up to 0.5 kilometers (roughly 1,640 feet) from water (Stebbins 2003).

There are no CNDDB occurrences within 1-mile of the project site and no WPT were observed in the project area during biological reconnaissance surveys. There is suitable habitat for WPC throughout the project site.

4.4.5 Invertebrates

4.4.5.1 Valley Elderberry Longhorn Beetle

The Valley Elderberry Longhorn Beetle (VELB) is federally listed as Threatened by USFWS under ESA and critical habitat has been designated for the species. The VELB is found only in association with its host plant, the elderberry shrub (*Sambucus nigra* subsp. *caerulea*). To function as habitat for the VELB, host elderberry shrubs must have stems that are 1 inch or greater in diameter at ground level. The beetles are rarely seen because they spend most of their life cycle as larvae within the stems of the shrubs. The presence of cylindrical exit holes approximately 0.25 inches (0.635 centimeters) in diameter in elderberry stems are indications of VELB habitat use. The holes may be located on the stems from a few inches to about 9 to 10 feet (2.7 to 3 meters) above the ground and are sometimes the only indicator of beetle presence (Barr 1991). In the Central Valley, the elderberry shrub is found primarily in riparian vegetation.

There are no CNDDB occurrences within 1-mile of the project site and no elderberry shrubs were observed in the project area during biological reconnaissance surveys. There is suitable habitat for elderberry shrubs throughout the proposed project site.

5.4.5.2 Vernal Pool Fairy Shrimp

The Vernal Pool Fairy Shrimp is federally listed as Threatened by USFWS under ESA and critical habitat has been designated for the species. The Vernal Pool Fairy Shrimp inhabits vernal pools in grass or mud bottomed flats or basalt flow depression pools in unplowed grasslands. Preferred habitat features include small vernal pools usually less than 0.05 acres in size at elevations from 33 to 4,003 feet (10 to 1,220 meters) with clear to tea colored water, low salinity, low dissolved solids, and water temperatures ranging from 40°F to 73°F (4.5°C to 23°C) (USFWS 2005). The life cycle of the Vernal Pool Fairy Shrimp is controlled by water temperature. At the optimal water temperature of 68°F (20°C), the Vernal Pool Fairy Shrimp can reach sexual maturity in 18 days and complete its full life cycle in 9 weeks. The Vernal Pool Fairy Shrimp is able to complete its full life cycle when water is available, however if water dries up, the eggs can remain dormant in the soil. The typical life span is 147 days (USFWS 2005).

There are no CNDDB occurrences within 1- mile of the project site. The vernal pool just south of the proposed project site may provide suitable habitat for the Vernal Pool Fairy Shrimp.

4.4.5.3 Vernal Pool Tadpole Shrimp

The Vernal Pool Tadpole Shrimp is federally listed as Endangered by USFWS under ESA and critical habitat has been designated for the species. Preferred habitat features of the Vernal Pool Tadpole Shrimp include clear to turbid vernal pools 6.5 square feet to 88 acres in size from 10 to 500 feet (3 to 150 meters) in elevation with low dissolved solids,

low alkalinity, pH between 6.2 and 8.5, and water temperatures between 50°F and 84°F (10°C and 29°C). After the first winter rains, dormant eggs can hatch within 4 days which repopulates the vernal pool. Vernal Pool Tadpole Shrimp mature in about 25 days and first reproduce at about 54 days. Some females can have up to 6 clutches with 32 to 61 eggs per clutch in one wet season. Optimal hatching temperature is between 50°F and 59°F (10°C to 15°C). Some eggs hatch immediately where as others remain dormant in the soil (USFWS 2005).

There is one CNDDB occurrence within 1-mile of the project site, found just south of Plumas Arboga Road. There is one vernal pool outside of the project area that may provide habitat for Vernal Pool Tadpole Shrimp.

4.4.6 Plants

4.4.6.1 Sanford's Arrowhead (Sagittaria sanfordii)

Sanford's Arrowhead is listed by the California Native Plant Society at 1B.2 meaning it is rare, threatened or endangered in California and elsewhere. It grows in shallow, freshwater ponds, marshes and ditches at elevations lower than approximately 2,100 feet (650 meters) in association with the water plantain (*Alisma plantago-aquatica*), water primrose (*Ludwigia peploides*), and various species of cattail (*Typha* spp.). Sanford's arrowhead is a perennial rhizomatous herb that blooms from May through October. It is a member of the water plantain family (Alismataceae), and the rhizome of Sanford's arrowhead has been a source of food to native cultures and waterfowl. It is endemic to California, but has mostly disappeared from the Central Valley and is no longer present in southern California (NBC 2015).

There is one CNDDB occurrence from a 1955 collection that was mapped as best guess around 3 air miles northwest of the Rio Oso Post Office. No Sanford's arrowhead plants were observed in the project area during biological reconnaissance surveys. There are emergent marshes adjacent to the proposed project site that could provide suitable habitat for the Sanford's arrowhead.

5.4.2 Environmental Checklist and Discussion

BIOLOGICAL RESOURCES Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US 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?	☐	☐	☐	☒

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

Less Than Significant with Mitigation Incorporated. Culvert replacement activities including excavation and minimal vegetation removal could potentially have significant impacts to Swainson's Hawk, Tricolored Blackbird, Giant Garter Snake, Western Pond Turtle, Valley Elderberry Longhorn Beetle, Vernal Pool Fairy Shrimp, Vernal Pool Tadpole Shrimp, and Sanford's Arrowhead but the project will minimize these impacts through mitigation measures.

Birds

Construction activities could result in the loss or disturbance of active nests of special status bird species including Swainson's Hawk and Tricolored Blackbird. The proposed project will remove minimal amount of vegetation on the water-side slope of the eastern embankment. Equipment and people may disturb nesting birds if active nests are present during construction activities, therefore there is a potential that the proposed project may impact Swainson's Hawk. The proposed project will not remove vegetation within the channel, therefore there is little potential that the proposed project may impact the Tricolored Blackbird. In addition to these special status species, a number of other bird species could nest in the project vicinity including raptors and songbirds. The nests of all raptor species are protected under Section 3503.5 of the California Fish and Game Code. Nest disturbance resulting from construction activities has the potential to cause nest abandonment of the loss of eggs or chicks. The loss or disturbance of active nests would be potentially significant without mitigation measures in place. Migratory birds, their chicks, eggs and active nests are protected the federal Migratory Bird Treaty Act (MBTA) of 1918. The law states that it is unlawful to harm, harass, possess or kill a migratory bird (as identified under the MBTA), its eggs, chicks or active nest.

Herps

Construction activities could result in direct impacts to herps including GGS and WPT. Equipment such as a backhoe and excavator will be used to remove the damaged culvert. Vehicles will be driving on the embankment and may be operated within suitable habitat for GGS and WPT during construction activities. This may directly impact species if they are present at the project site. Construction activities are temporary in nature, lasting approximately 30 days. The direct impacts to GGS and WPT would be potentially significant without mitigation measures in place.

Invertebrates

Construction activities could result in indirect impacts to invertebrates including VELB, Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp. Although no elderberry shrubs (the sole host plant to VELB) were identified during biological reconnaissance surveys, there is suitable habitat for the elderberry shrub within the project footprint. Vegetation removal has the potential to damage elderberry shrubs, if found at the project site, which could impact VELB. Equipment such as a backhoe and excavator will be used to remove the damaged culvert. These vehicles and other construction equipment may be driving

near suitable habitat of Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp during construction work, therefore there is a potential that the proposed project may impact Vernal Pool Fairy Shrimp.

Mitigation Measure BIO-1: Pre-Construction Environmental Awareness Training
An Environmental Scientist will develop and administer an environmental awareness training program to all construction personnel before construction activities begin. All construction staff working on the project will be required to attend an on-site environmental awareness training given by the environmental staff prior to the commencement of construction activities. The training will include information regarding species identification, natural history, habitat, mitigation measures of special status species (e.g. GGS, Swainson's Hawk, tricolored blackbird, etc.) and sensitive habitats, including vernal pools, which occur south of the proposed project site.

Mitigation Measure BIO-2: Biological Monitor
An Environmental Scientist will be onsite during ground disturbing activities. If a sensitive species is encountered during construction, the Environmental Scientist shall be contacted and activities shall cease until appropriate corrective measures have been completed or it has been determined that the species will not be harmed.

Mitigation Measure BIO-3: Pre-Construction Wildlife, Bird and Plant Surveys
Pre-construction surveys for wildlife, bird nests (including song bird nests), special status plants, and/or sensitive habitats will be conducted by a qualified biologist prior to construction activities. Additionally, pre-construction surveys shall be implemented as follows:

- Swainson's Hawk: If work is to be conducted during the nesting season (April 1-August 31), pre-construction surveys will be completed prior to construction work within one-half mile of the project site to identify any active nests (eggs or juveniles). Surveys will be completed in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (SWA TAC 2000). If an active nest is identified, work will not occur within ¼ mile of the nest until the young has fledged the nest.
- Tricolored Blackbird and other special status raptors: If work is to be conducted during the nesting season (mid-March – early August), pre-construction surveys will be completed prior to construction work within 250 feet of the project site. If an active nest is identified, impacts will be avoided by establishment of appropriate buffers to minimize the impacts. The size of the buffers may be adjusted, depending on the project activity and stage of the nest, if a qualified biologist determines that activity within a reduced buffer would not be likely to adversely affect the adults or their young. No trees or other vegetation with an active nest will be removed until a qualified biologist confirms that the nest is no longer active.
- Valley Elderberry Longhorn Beetle: An Environmental Scientist will survey the vegetation prior to removal to determine if elderberry shrubs are present. If there are elderberry shrubs, the shrubs will be avoided and conservation measures will be implemented according to USFWS protocol.
- Giant Garter Snake: No more than 24 hours prior to construction activities, the

project area will be surveyed for GGS by an Environmental Scientist. Surveys will cover all upland habitat within 200 feet of GGS aquatic habitat and will be repeated if a lapse in construction activity of 2 weeks or greater occurs. CVFPB will report any sighting and any incidental take to USFWS immediately by telephone at (916) 414-6600 and to CDFW at (916) 358-4353. See also MM BIO-4.

- Western Pond Turtle: An Environmental Scientist will survey WPT habitat before work commences. If a western pond turtle is identified within the construction or project footprint area, work will not proceed until the turtle has moved out of the construction or project footprint area on its own.
- Prior to the start of construction, the project site will be surveyed by an Environmental Scientist to establish project boundary, delineate vegetation requiring removal, and mark sensitive biological resources to be avoided. The project boundary and vegetation clearing will not exceed the minimum necessary to facilitate construction activities.

Mitigation Measure BIO-4: Avoid and Minimize Impacts to Giant Garter Snake

- At least ~~10~~ 15 days prior to the commencement of ground-disturbing activities, de-watering activities will take place in the aquatic area directly adjacent to the eastern embankment, where the failed culvert meets the water. After 15 days, exclusionary fencing will be erected around the perimeters of the culvert replacement project site. Prior to fencing installation, the fence line shall be mowed (with a minimum height of 6 inches) in order to conduct a surface survey of potential burrows. Fencing shall be installed with a minimum of 6 inches buried in the ground and a minimum of 24 inches above ground. Fence staking shall be installed on the inside of the exclusion area. One-way escape funnels shall be installed every 50 – 100 feet and sealed along the fence line, to provide an escape for any giant garter snake that may within the exclusion area. The fencing shall enclose the entirety of the site, to the greatest extent feasible. There is open-water to the east of the site, where a turbidity curtain is to be installed during construction, the exclusion fencing will be installed on-top of the cofferdam, to prevent snakes from potentially entering the project area. CVFPB will work with CDFW and USFWS to determine best placement of exclusion fencing within this area. The fencing will be inspected before the start of each work day and maintained by the project proponents until completion of the project. The fencing will be removed only when the project activities within WPIC culvert replacement and staging area site are completed. Exclusion fencing will be maintained as well as any marked features of the construction and staging areas adjacent to sensitive biological resources.
- All construction activity within potential GGS habitat, including marshes, sloughs, ponds, irrigation canals, drainage ditches, and flooded rice fields, will occur from May 1 to ~~October 1~~ September 15. This includes in-water construction and work outside the active stream channel. If construction activity within GGS habitat starts prior to May 1 or may go beyond ~~October 1~~ September 15, USFWS and CDFW will be contacted and additional measures may be necessary to avoid take.
- CDFW and USFWS will be notified prior to the start of construction.
- If vehicles will be left onsite overnight, they will be surveyed by a biological monitor in the morning to see if GGS are present. If a GGS if found, it will be left alone and

construction staff will wait to start up the engine until the snake has left the site on its own.

- Keep speeds to 20 mph on all roadways within the project footprint.
- Vegetation clearing will be confined to the minimal area necessary to facilitate construction activities. GGS habitat, including marshes, sloughs, ponds, irrigation canals, drainage ditches, and flooded rice fields, within or adjacent to the project site will be flagged and designated as environmentally sensitive areas. These areas will be avoided by all construction personnel.
- Any temporary fill and construction debris will be removed after completion of construction activities, and, wherever feasible, disturbed areas will be restored to pre-project conditions.
- Movement of heavy equipment will be confined to existing roadways, top of the eastern embankment and staging areas, where feasible, to minimize habitat disturbance.
- CVFPB shall coordinate with USFWS and CDFW to develop and implement an appropriate mitigation strategy to compensate for temporary habitat disturbance and potential take of giant garter snake. Mitigation would likely include purchasing created giant garter snake habitat at a USFWS- and CDFW-approved mitigation bank. Appropriate mitigation ratios shall be developed during consultation with USFWS and CDFW. CVFPB shall obtain incidental take authorization if deemed necessary by USFWS and/or CDFW. The performance standard is anticipated to be no net loss of giant garter snake.

Mitigation Measure BIO-5: Avoid and Minimize Impacts to Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Construction equipment will be required to stay at least 250 feet away from potential habitat of Vernal Pool Fairy and Tadpole Shrimps when the pool is flooded. Potential habitat at the project site includes the vernal pool south of Plumas Arboga Road. An Environmental Scientist will provided SMY staff with a map of the channel including delineation of the wetlands and a 250 foot buffer around the wetlands to avoid.

Mitigation Measure BIO-6: Avoidance of Wetlands by Construction Equipment

Construction equipment will avoid driving in the wetted portions of the channel and vernal. The staging area for equipment storage will be located outside of the wetted portions of the channel.

Mitigation Measure BIO-7: Revegetation to Compensate for Construction-Related Effects

Disturbed soil areas will be stabilized using appropriate erosion control BMPs during and at the completion of construction activities. If hydroseeding is used to cover disturbed areas, native grass/forb/herbaceous plant, sterile rye, or other non-invasive seed mixes will be used. If any trees need to be removed or trimmed, a certified arborist will be present to supervise tree removal and trimming to preserve tree health and ensure that appropriate methods are used. Any native willows, oaks and/or other native plantings to be removed will be replanted in or near the project area. Any emergent vegetation temporarily disturbed during construction activities would be replanted on or near the project site.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?
Less Than Significant. The proposed project consists of culvert removal and replacement. However, minimal vegetation removal will be necessary to complete project activities. Construction will be temporary and will only over a 3-week period. The culvert replacement is necessary to maintain channel capacity and to provide adequate water flow through the channel.

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?
Less Than Significant Impact With Mitigation Incorporated. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment. Only vegetation required to be removed for construction activities will be removed. No direct removal, filling, hydrological interruption, or other means will occur as part of this project.

The proposed project would use construction equipment that will be driving at the toe of the eastern embankment. There is one vernal pool within the vicinity of the proposed project footprint, just south of Plumas Arboga Road. Mitigation Measure BIO-6, which states no equipment can be driven or stored within the wetted portion of the channel including wetlands, would ensure that the proposed project would not have an impact on federally protected wetlands as defined by Section 404 of the Clean Water Act. Construction work will not trigger the need for a permit under Section 404 of the Clean Water Act because vehicles will avoid wetlands and all vegetation removal will occur above ground level. Emergent vegetation is present in the wet areas just east of the damaged culvert. Mitigation Measure BIO-7 would reduce potential temporary impacts to emergent vegetation resulting from construction activities, like removal and replacement of the headwall.

Mitigation Measure BIO-6: Avoidance of Wetlands by Construction Equipment
Construction equipment will avoid driving in the wetted portions of the channel and vernal. The staging area for equipment storage will be located outside of the wetted portions of the channel.

Mitigation Measure BIO-7: Revegetation to Compensate for Construction-Related Effects
Disturbed soil areas will be stabilized using appropriate erosion control BMPs during and at the completion of construction activities. If hydroseeding is used to cover disturbed areas, native grass/forb/herbaceous plant, sterile rye, or other non-invasive seed mixes will be used. If any trees need to be removed or trimmed, a certified arborist will be present to supervise tree removal and trimming to preserve tree health and ensure that appropriate methods are used. Any native willows, oaks and/or other native plantings to be removed will be replanted in or near the project area. Any emergent vegetation temporarily

disturbed during construction activities would be replanted on or near the project site.

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. The project site provides nesting and habitat for numerous native wildlife species. The proposed project may have a temporary effect on the movement of wildlife species during construction work.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
Less Than Significant. Yuba County has a policy in their General Plan stating "building placement, grading, and circulation should be planned to retain as much existing native vegetation as feasible, with a priority on preserving existing oak trees that have a diameter breast height (DBH) of 6 inches or greater and all other trees that have a DBH of 30 inches or greater" (YCGP, 2011). The proposed project may include removal of small trees, less than 4 inches DBH. Native trees greater than 4 inches DBH may be limbed up to 6 feet from the ground surface and the crowns will be retained. All native trees will be retained within the proposed project footprint when feasible. No existing oak trees greater than 4 inches DBH will be removed as part of the project, therefore there is less than significant impact.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?
No Impact. The project area is within the Yuba-Sutter Natural Community Conservation Planning (NCCP) and Habitat Conservation Planning (HCP) plan area. A final Yuba-Sutter NCCP/HCP planning agreement was signed by all participating parties in 2012 and work on an HCP/HCCP should be forthcoming (although no set date has been established) (Yuba County et al. 2011). Since no NCCP or HCP has been completed or currently exists (Yuba Sutter RCP 2014), project work does not conflict with any applicable NCCP or HCP.

4.5 CULTURAL RESOURCES

4.5.1 Environmental Setting

The project is situated on the floor of the Central Valley at an elevation of approximately 50 feet above mean sea level in a rural agricultural setting. Soils within the project area consist of Hollenbeck Silty Clay Loams (deep soils formed in clay alluvium). Vegetation within the project area consists of annual forbs and grasses, with riparian plants including Himalayan blackberry and willow growing at the outlet of the culvert to be replaced. The surrounding area is primarily agricultural fields cultivated in rice and row crops.

4.5.2 Records Search

A record search was conducted on June 5, 2014 by North Central Information Center of the California Historical Resources Information System (CHRIS) at Sacramento State University. The search encompassed a ¼ mile radius around the proposed project area. No archaeological resources have been previously recorded within the proposed project area or within the ¼ mile search radius. One built environment resource, the Western Pacific Railroad (P-58-001372) has been recorded within the ¼ mile search radius. Two historic-era built environment resources have been noted but not recorded overlapping the project area: the WPIC and Reclamation District 784 (RD 784).

Three cultural resources surveys have been conducted within ¼ mile of the proposed project area. Two of these were along Plumas Arboga Road, adjacent to the south of the proposed project area. The proposed project area has not been previously surveyed for cultural resources.

4.5.3 Tribal Engagement

A sacred lands file search was conducted by the Native American Heritage Commission (NAHC) on June 2, 2014. The search found that there are no known sacred lands within the project area. Subsequent correspondence with 14 individuals representing seven tribal governments did not identify any tribal cultural resources within the project area.

4.5.4 Field Survey

The field survey was conducted on January 9, 2015 by DWR Archaeologist Monica Nolte.

No prehistoric or historic archaeological resources were identified within or adjacent to the proposed project area. There are two built environment features within or adjacent to the proposed project area that are more than 50 years old. These are the eastern levee of the WPIC and Plumas Arboga Road. The WPIC forms the eastern boundary of RD 784. Both RD 784 and the WPIC were recommended ineligible for the NRHP by JRP Historical Consulting Services in 1994 but were not formally recorded at that time. Ms. Nolte documented the section of levee within the project area.

Based on research conducted by Ms. Nolte and presented in her April 2015 Archaeological Survey Report for the proposed project, the east embankment of the WPIC was likely constructed in the 1920s and has been maintained since that time. Plumas Arboga Road was constructed prior to 1885 but has been improved multiple times

and has the appearance of a modern paved county road. Ms. Nolte recommends both the embankment and road as ineligible for the California Register of Historical Resources (CRHR) and the National Register of Historic Places (NRHP).

The current proposed project would not have an effect on Plumas Arboga Road or on the WPIC and is not likely to impact any unknown archaeological sites. The project footprint is within geologically recent soil and has no potential to encounter paleontological resources.

4.5.5 Environmental Checklist and Discussion

CULTURAL RESOURCES

Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 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?	☐	☒	☐	☐
e) Cause a substantial adverse change in the significance of tribal cultural resources, as defined under Assembly Bill (AB) 52?	☐	☒	☐	☐

a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?
No Impact. No historical resources are present in the proposed project area.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?
Less Than Significant With Mitigation Incorporated. No archaeological resources are known to exist in or around the proposed project site. The probability that proposed project implementation could impact buried archaeological deposits is considered to be low given that proposed project activities would be limited to a maximum of eight feet deep below the crest of the existing embankment. This soil has previously been disturbed for construction of the WPIC levee and existing culvert. Therefore, there is little chance that intact archaeological resources will be encountered during project construction.

Mitigation Measure CULT-1: If historical or unique archaeological resources are accidentally discovered during project activities, all work would temporarily cease in the immediate area until the findings can be assessed by a qualified archaeologist and an appropriate course of action can be determined. If the find is found to be an historical or unique archaeological resource, time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation must be available (CEQA Guidelines §15064.5[f]).

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

No Impact. The proposed project is located in Holocene aged sediments which formed after the end of the last glacial maximum. Project activities would not extend past the Holocene alluvium into older geologic units. Thus, there is no possibility of the presence of paleontological resources. The proposed project is also in a location that is similar geologically to the surrounding area and is not unique geologically.

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

Less Than Significant With Mitigation Incorporated. It is not anticipated that proposed project implementation would disturb any human remains, including those interred outside of formal cemeteries. The presence of human remains is unlikely given that no archaeological sites have been identified in the proposed project area and there would be minimal ground disturbance.

Mitigation Measure CULT-2: If human remains are found, such remains would be subject to the provisions of California Public Resources Health and Safety Code Section 7050.5(b). The requirements and procedures would be implemented, including immediately stopping work in the vicinity of the find and notifying the County Coroner. A DWR archaeologist would also need to be contacted immediately. If the remains are determined to be those of a Native American, the process for notification of the California Native American Heritage Commission (NAHC) and consultation with the individual(s) identified by the NAHC as the “most likely descendent” is set forth in Section 5097.98 of the California Public Resources Code. Work in the vicinity of the find can restart after the remains have been investigated and appropriate recommendations have been made for their treatment and disposition.

e) Cause a substantial adverse change in the significance of tribal cultural resources, as defined under Assembly Bill (AB) 52?

Less Than Significant With Mitigation Incorporated. AB 52 defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe”. Consultation with Native American tribal representatives did not identify any tribal cultural resources within the project area or immediate vicinity.

Mitigation Measure CULT-3: If prehistoric archaeological resources or human remains are discovered during construction, DWR will consult with tribal representatives identified by the Native American Heritage Commission to determine whether the find is a tribal cultural resource and to identify culturally appropriate treatment. This consultation will take place concurrently with mitigation measures CULT-1 and/or CULT-2, as appropriate.

4.6 GEOLOGY AND SOILS

4.6.1 Environmental Setting

The WPIC is located in Yuba County north of Rio Oso and just east of Highway 70. The WPIC is part of the Sacramento River Flood Control Project. The primary soils in this vicinity as identified by the United States Department of Agriculture (USDA) National Resource Conservation Service (www.ca.nrcs.usda.gov) Soil Survey of Yuba County California (USDA, 2014) is Hollenbeck silty clay loam. Hollenbeck silty clay loam is defined as a Chromic Haploxererts fine present on 0 to 1 slopes. The Hollenbeck is moderately well draining, slow runoff with slow permeability. Major uses for the Hollenbeck soil typically are used to grow irrigated crops such as tomatoes, sugar beets, beans, small grains and irrigated pasture.

The Department of Conservation (DOC), California Geological Survey (CGS) released revised Alquist-Priolo (AP) Maps on September 21, 2012. Based on the AP Map issued by the State Geologist, there are no fault zones or active faults located on or in the immediate vicinity of the proposed project site.

The Bear Mountain Fault System, associated with the Foothills Fault System, is the closest fault system near the proposed project, which is located in the western Sierra Nevada. As found on the AP maps for the Bangor Quadrangle, the northern Bear Mountain fault zone includes the Swain Ravine, Spenceville and Dewitt segments. The closest fault segment, the Swain Ravine Fault is situated approximately 10 miles northeast of the proposed project site. The Cleveland Hills Fault is a north trending, west-dipping normal fault believed to be an extension of the Swain Ravine (CDOC, 1983).

The Bear River fault zone is a result of eastward plate convergence and subduction in the early Mesozoic. Within the Swain Ravine fault zone, the Cleveland Hills Fault is situated south of Oroville, east of Palermo and is a subtle west facing scarp coincident with the 1975 Oroville Earthquake. The Oroville earthquake, measuring Mw 5.7 created surface rupture (normal-down to the west, max vertical 4-5 centimeters) along the Cleveland Hills Fault. Oblique right-lateral slippage of 3 to 4 centimeters was also measured. Woodward Clyde (CDOC, 1983) estimated the rate of slip at approximately 0.005 millimeters per year.

Liquefaction is a soil strength and stiffness loss phenomenon that typically occurs in loose, saturated, cohesionless soils as a result of strong ground shaking during earthquakes. The potential for liquefaction at a site is usually determined based on the results of a subsurface geotechnical investigation and the groundwater conditions beneath the site. Hazards to structures associated with liquefaction at a site include bearing capacity failure, lateral spreading, and differential settlement of soils below foundations, which can contribute to structural damage or collapse.

5.6.2 Environmental Checklist and Discussion

GEOLOGY AND SOILS Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

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) Landslides?
No Impact. Yuba County is not an Earthquake Fault Zone, and there are no known faults in the proposed project area. No major ground disturbance will occur as part of the proposed project. The proposed project would have no impact on earthquake faults, ground shaking, seismic-related ground failure, including liquefaction, or landslides. The proposed project vicinity is dominated by agriculture and there are no structures located within the WPIC.

b) Result in substantial soil erosion or the loss of topsoil?
Less Than Significant Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment. Replacing the culvert would maintain design flows to ensure water conveyance. Exposed topsoil will be reseeded with native grasses which will reduce erosion. The potential soil erosion or loss of topsoil would be minimal and not substantial.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
No Impact. The proposed project footprint has 2 soil types within the approximate 0.73 acres (USDA 2014). The soil consists of Hollenbeck silty clay loam, 0 to 1 percent slopes and Hollenbeck silty clay loam, 0 to 1 slopes, occasionally flooded. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. These soils would not cause instability which result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
No Impact. The proposed project is not located within expansive soils. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project would not create 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?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. There are no residences located within the WPIC footprint and the proposed project does not involve septic tanks or the use of sewer systems.

4.7 GREENHOUSE GAS EMISSIONS

4.7.1 Environmental Setting

Greenhouse gases (GHGs) are a topic of on-going study for effects on the climate system, specifically, climate change. The term "climate change" refers to any significant change in the measures of climate lasting for an extended period of time. These changes include major changes in temperature, precipitation, or wind patterns, among others, that occur over several decades or longer (USEPA Glossary).

Recent review of research conducted by the Intergovernmental Panel on Climate Change (IPCC 2014) shows that there is a warming trend in the earth's climate system. The atmosphere and ocean have warmed (increased in temperatures), amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases (GHGs) have increased. According to the United Nations Framework Convention on Climate Change (UNFCCC) glossary, GHGs are any gas that absorbs infrared radiation or trap heat in the atmosphere near the earth's surface. These gases include, but are not limited to, water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrochlorofluorocarbons (HCFCs), ozone (O_3), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)." The ability to trap heat in the atmosphere is known as the greenhouse effect. A rise in the atmospheric concentrations of GHGs causes a gradual increase in temperature in the lower atmosphere.

Since 1850, the amount of human induced (anthropogenic) GHGs in the atmosphere are higher than any other time period in recorded history. GHGs such as CO_2, NH_4, and CH_4 are now considered major sources in the atmosphere that may influence climate change, specifically warming of the atmosphere. Since increased GHGs are a result of population and economic growth, there is a need for governments to form methods, policies or regulations to help with reducing emissions and do so in a technical and economically feasible way. In California, legislature enacted Assembly Bill 32 (AB 32) – known as the Global Warming Solutions Act of 2006 – declaring that global warming poses a serious threat to the economic well-being, public health, natural resources, and environment of California.

The Global Warming Solutions Act of 2006 required the California Air Resources Board (CARB) to develop regulations and policies to regulate sources of emissions of GHGs that cause global warming. CARB was directed to create a program that would reduce statewide emissions to 1990 levels by 2020, a reduction of approximately 21.7% below emissions expected under a "business as usual scenario." These reductions were to be met by adopting regulations that maximize feasible technology and are cost effective while improving efficiency in land use sectors (i.e. energy, transportation, waste).

In addition, AB 32 directed CARB to develop a scoping plan to help lay out California's strategy for meeting the goals. This scoping plan was to be updated every 5 years and would be funded through fees collected annually from large emitters of GHGs such as oil refineries, electricity power plants, cement plants, and food processors.

Senate Bill 97 (SB 97) approved by legislature in 2007, was an act relating to the California Environmental Quality Act (CEQA) that addressed GHGs. Specifically, SB 97 required "Office of Planning and Research to prepare and develop proposed guidelines for the implementation of CEQA by public agencies." The Amendments to the CEQA Guidelines were implemented March 18, 2010.

Section 15064.4 "Determining the Significance of Impacts from Greenhouse Gas Emissions" requires "a lead agency to make a good faith effort, based on scientific and factual data to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." The lead agency has the discretion for choosing use of models and methodologies to quantify GHGs or rely on a qualitative analysis or performance based standards.

Thresholds of significance

The significance GHGs were determined by answering questions relating to GHG emissions in the CEQA Guidelines, Appendix G. Appendix G asks:

a) Will the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
b) Will the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

In addition, the 2030 General plan for Yuba County, the Feather River Air Quality Management District (FRAQMD), and Sacramento Air Quality Management District (SMAQMD) were consulted with to determine if any applicable GHG reduction measures, climate action plans, or significance thresholds apply. Through research and discussion, the 2030 General plan recommended that FRAQMD's emission control practices (i.e. standard mitigation measures) be used for reducing construction emissions. To date, FRAQMD has not established or adopted a Threshold of Significance (TOS) for use in their air district in regards to GHGs. For purposes of a significance threshold, FRAQMD suggested use of SMAQMD's most recently adopted recommended TOS for GHGs. SMAQMD adopted Resolution 2014-028 on October 23, 2014 with the intent to provide recommended thresholds for the purpose that 90% of GHGs in SMAQMD's jurisdiction were reviewed to assess additional need of mitigation as well as to show consistency with AB 32 and the Scoping plan goals to meet 1990 level GHG reductions by 2020. SMAQMD's recommended threshold is 1,100 Metric Tons CO_2 equivalents per year ($MTCO_2e$/year) and will be used as the TOS for this Project.

Methods and Assumptions

FRAQMD and SMAQMD recommend use of the RCEM for calculating project emissions. Project parameters were directly input into the data section of the model which calculates emissions based on construction equipment, amount of workers required, and the amount of soil to be transported per construction period (i.e. grubbing/land clearing, grading/excavation, drainage utilities/subgrading, and paving). About 60 cubic yards (cy) of Aggregate Base (AB) will be brought onsite for purposes of creating a staging area. Material from excavation will be re-used and graded while about 40 cy of concrete will be

brought in for the pipe and headwall installation. It is not expected that any additional material will be required to complete the project. Since concrete emissions could not be estimated using the RCEM, emission factors from Flower and Sanjayan 2007 "Greenhouse Gases Emissions Due to Concrete Manufacture" was used to account for this material (see Appendix A, Section 9.6). The concrete emissions and construction emissions were added together to calculate total GHG emissions.

No Action
Under no action, the culvert would continue to be a safety and flood risk with the potential to cause additional erosion. This additional erosion could erode plants that sequester carbon, causing the release of carbon into the atmosphere, which would indirectly contribute a minimal amount of GHGs to the Greenhouse effect.

Action
GHG emissions from Construction activities for the Project will not exceed SMAQMD's recommended thresholds of 1,100 MTCO2e/year. Table 1 displays estimated emissions for the Project. This figure is well below SMAQMD's recommended threshold.

Table 1 - Estimated GHG Emissions

SMAQMD's GHG Thresholds	1,100 MTCO2e/year
Project Construction Emissions Total	30.50 MTCO2e*

*Significance thresholds were converted from tons to Metric tons for comparing to TOS

Construction emissions for the project will be reduced by implementing FRAQMD's Standard Mitigation Measures (see AQ Section). Furthermore, CVFPB will monitor project emissions to ensure compliance with GHG threshold. If any additional emissions cause an exceedance of SMAQMD's recommended TOS, then a GHG reduction plan would be implemented. The GHG reduction plan would consist of feasible mitigation measures that can be implemented as individual measures or in combination with each other to reduce a project's impacts to less than significant. These options include:

1. Implement a GHG Reduction Plan that consists of feasible mitigation measures to implement if GHG emissions exceed 1,100 MTCO2e/year. These measures could include:
- o Purchase of low carbon fuel
- o Purchase of CO2 offsets to mitigate GHG emissions to less than 1,100 MT
- o Funding of District incentive programs

Determination
Construction emissions will not exceed applicable TOS, or conflict with any policies, plans or regulations meant to reduce GHG emissions. Emissions will be monitored to ensure compliance with TOS and mitigation measures will be implemented as necessary. As a result, impacts are considered less-than-significant.

4.7.2 Checklist and Discussion

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

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
Less than significant. The proposed Project GHG emissions are far beneath SMAQMD's recommended threshold of significance for GHGs. In addition, FRAQMD's Standard Mitigation Measures will be implemented for the Project. CVFPB 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.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?
No impact. Since Project GHG emissions are less than SMAQMD's TOS recommendations, the Project is in compliance with all applicable plans and policies. SMAQMD's recommended TOS was created for the purpose that 90% of GHGs in SMAQMD's jurisdiction were reviewed to assess additional need of mitigation as well as to show consistency with AB 32 and the Scoping plan goals to meet 1990 level GHG reductions by 2020. Therefore, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

4.8 HAZARDS AND HAZARDOUS WASTE

4.8.1 Environmental Setting

State agencies regulating hazardous materials are the California Environmental Protection Agency (Cal/EPA) and the Office of Emergency Services (OES). The California Highway Patrol and California Department of Transportation (DOT) enforce regulations for hazardous materials transport. Within the Cal/EPA, the California Department of Toxic Substances Control (DTSC) has primary regulatory authority for hazardous materials regulation enforcement. State hazardous waste regulations are contained primarily in the California Code of Regulations Title 22. The California Occupational Health and Safety Administration (Cal OSHA) has developed rules and regulations regarding worker safety around hazardous and toxic substances.

The DTSC defines the Hazardous Waste and Substance Sites List (also known as the "Cortese Sites" List) as a planning document used by State, local agencies and developers to comply with the California Environmental Quality Act by providing information about the location of hazardous material sites. The proposed project area was researched for Cortese Sites using the EnviroStor software program provided on DTSC's website (DTSC, 2014). No Cortese Sites were located within or immediately adjacent to the proposed project footprint (DTSC, 2014).

4.8.2 Environmental Checklist and Discussion

HAZARDS AND HAZARDOUS WASTE Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard 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?	☐	☐	☐	☒

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
No Impact. There are no known hazardous materials within the project area. During the construction period, diesel fuel and oil may be used. The project site would not require long-term storage, treatment, disposal, or transport of hazardous materials.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
Less Than Significant With Mitigation Incorporated. Construction vehicles on site may require emergency maintenance that may result in the release of oil, diesel, transmission fluid or other materials. These materials would not be used in quantities or be stored in a manner that would pose a significant hazard.

Mitigation Measure HAZ-1:
Diesel fuel and oil will be used, stored and disposed in accordance with standard protocols for handling of hazardous materials. All personnel involved in use of hazardous materials will be trained in emergency response and spill control.

Mitigation Measure HAZ-2:
During construction activities, SMY staff will prevent oil, grease, fuels, and other petroleum products, toxic chemicals, and any other substances that could be deleterious to aquatic life from contaminating the soil and/or entering waters of the state. SMY staff will immediately remove such substances from any place where they could enter waters of the state and/or adversely affect fish and wildlife resources. SMY staff will attempt to contain any releases or spills of such substances, and shall report any significant spills as soon as possible to the California Emergency Management Agency (Cal-EMA). In the event of a significant spill, work will cease immediately and workers will employ containment methods if it is safe to do so. DWR will make notifications to the appropriate agencies within the regulatory time frames.

Mitigation Measure HAZ-3:
A turbidity curtain placed in the water immediately adjacent of the project will reduce impacts to water quality, and in-water work will be avoided to the extent practicable.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
No Impact. There are several schools within the community of Plumas Lake, but none are located within one-quarter mile of the project site. The proposed project would not create hazardous emissions or handle hazardous or acutely hazardous materials, substances

or waste.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
No Impact. Review of the California Department of Toxic Substances Control EnviroStor database determined that the project site is not included on any lists of hazardous material sites. The proposed project would not 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?
No Impact. The closet public use airport, Yuba County Airport, is located in Olivehurst, approximately 3-miles from the project area. The proposed project would not 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?
No Impact. The closest private use airport is located approximately 5 miles south of the project site. The proposed project would not 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?
No Impact. The proposed project consists of replacing a drainage culvert and would not impair or physically interfere with an adopted emergency response or evacuation plan and SMY personnel are required to be trained in emergency response and spill containment.

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?
No Impact. The project would not expose people or structures to a significant risk of loss, injury or death due to wildland fires. As a standard safety practice during construction activities, SMY would have fire prevention equipment on site including fire extinguishers and shovels.

4.9 HYDROLOGY AND WATER QUALITY

4.9.1 Environmental Setting

The Bear River Drainage area is 550 square miles, with the headwaters originating in the vicinity of Emigrant Gap and Lake Spaulding in the Sierra Nevada foothills. Main tributaries of the Bear River are Greenhorn, Wolf, Rock, Dry Creek and WPIC. Large water bodies along the Bear River include Rollins Reservoir, Camp Far West Reservoir, Dutch Flat Afterbay and Drum Afterbay. Bear River flows downstream of Camp Far West Reservoir are derived from Dry Creek and WPIC.

Flows in the WPIC are derived from Reeds and Hutchinson Creeks, Best Slough/North Dry Creek, and agricultural runoff (Jones and Stokes, 2004). The WPIC conveys water to the Bear River (CVFMPP, 2010). The project area is located approximately 4 miles north of the Bear River within the flowage area of the WPIC. The WPIC collects excess irrigation and storm water from north and northeast Yuba County and conveys the drainage water to the Bear River which feeds the Feather River. The culvert to be replaced receives runoff from agriculture lands located directly east of the WPIC. The culvert conveys the runoff into the WPIC.

As found in the Federal Emergency Management Agency, Flood Insurance Rate Maps, the proposed project footprint is located entirely in the AE flood zone. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so the 1% annual chance flood can be carried without substantial increases in flood heights (FEMA, 2014).

4.9.2 Environmental Checklist and Discussion

HYDROLOGY AND WATER QUALITY Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
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)?	☐	☐	☐	☒

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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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 which 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) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

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

Less Than Significant Impact With Mitigation Incorporated. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project would use equipment that will be driving adjacent to the toe of the eastern embankment and may be stored in the dry portions of the WPIC channel. Mitigation Measure BIO-4 would ensure that the proposed project would not violate water quality standards or discharge requirements. In addition, installation of the turbidity curtain in the wetted area just east of the damaged culvert will provide added water quality protection.

Mitigation Measure BIO-6: Avoidance of Wetlands by Construction Equipment

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)?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project would not draw from a groundwater aquifer. The proposed project would not deplete groundwater supplies or interfere with groundwater recharge.

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?
Less Than Significant. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. Replacing the damaged culvert would ensure proper water conveyance which would help facilitate the existing drainage pattern and checklis

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 consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. Replacing the damaged culvert ensure proper water conveyance which would help facilitate the existing drainage pattern and not cause a substantial increase to the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

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 would not 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?
Less Than Significant. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. Construction activities would not 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?

No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project would not result in house placement within the 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 which would impede or redirect flood flows?

No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The project would not include placement of new structures that would impede or redirect flows in the 100-year flood hazard area.

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?

Less Than Significant. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. Replacement of the damaged culvert would ensure proper water conveyance. The proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. The proposed project is located in a geographically flat region of Yuba County and is not located in a coastal area. The proposed project would not expose people or structures to inundation by tsunami, seiche or mudflow.

4.10 LAND USE PLANNING

4.10.1 Environmental Setting

Yuba County has three physiographic regions; 1. The valley floor is the most developed part of the County and is home to most of its residents and businesses, with the County's cropland focused on fertile soils of the valley floor. 2. The foothills have some developed rural communities, as well as agricultural, forestland, and natural open spaces. 3. Mountian areas have a large amount of public land with open-space oreinted uses, as well as some small, rural comunities and a variety of agriculture and forestry (YCGPCD, 2011).

Yuba County includes the following cities; Marysville (County Seat) and Wheatland. Unincorporated communities on the valley floor include Linda, Oliviehurst, and Plumas Lake. In the foothill and mountian areas are the communities of Loma Rica, Browns Valley Brownville, Challenge, Oregon House, Dobbins, Log Cabin, Rackerby, Camptonville, Smartsville, Strawberry Valley, Camp Far West, and Collins Lake (YCGPCD, 2011).

The zoning designation for the proposed project and the majority of the county is defined as "Natural Resources" in the Yuba County General Plan (YCGPLU, 2014). The Natural Resources (NR) intent is to conserve and provide natural habitat, watershed, scenic resources, cultural resources, recreational amenities, agricultural and forest resources, wetlands, woodlands, minerals, and other resources for sustainable use, enjoyment, extraction and processing. Allowable uses include mining; agriculture, including viticulture and other types of cultivation; forestry; natural open space and nature preserves; mitigation banks, parks and recreational uses, and other natural-resource orientated uses; public facilities and infrastructure, including levees, levee borrow areas, and related facilities; and residential uses that are secondary to the primary natural resource-oriented use (YCGPCD, 2011).

Yuba County, Sutter County, Yuba City, Live Oak, Wheatland, the California Department of Fish and Wildlife and United States Fish and Wildlife Service are in the process of creating a Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP). The Yuba-Sutter NCCP/HCP is currently in the planning phase and a completion date is unknown. The Yuba-Sutter NCCP/ HCP would identify and provide regional or area wide protection of plants, animals and their habitats, while allowing for compatible and appropriate economic activity (YCNCCPHCP, 2014).

The WPIC culvert replacement project is located near the community of Plumas Lake, with the closest residences located approximately 600 feet west of the project. Surrounding land uses include primarily agriculture including rice fields, row crops and orchards.

4.10.2 Environmental Checklist and Discussion

LAND USE PLANNING Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 the 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?	☐	☐	☐	☒

a) Physically divide an established community?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. Construction work would not 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 the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. Proposed activities would not conflict with any land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?
No Impact. The proposed project is located within the planning area of the Yuba-Sutter NCCP/HCP which at the time of this document release, was in development. The joint plan is being designed to protect open space in the valley and lower foothill portion of both counties. No date for completion has been offered by NCCP/HCP website (YCNCCPHCP, 2014).

4.11 MINERAL RESOURCES

4.11.1 Environmental Setting

The State Mining and Geology Board (SGMB), in concert with the California Department of Conservation (DOC), the California Geological Survey (CGS) and the Office of Mine Reclamation (OMR), and its stakeholders, has been fully engaged in implementing the legislative mandates of the Alquist-Priolo Earthquake fault Zoning Act (AP Act), Seismic Hazards Mapping Act (SHMA), and the Surface Mining and Reclamation Act of 1975 (SMARA). Local lead agencies (cities and counties with surface mines within their jurisdictions) have primary responsibility for implementing SMARA. Each of these lead agencies must have a surface mining ordinance certified by the SGMB as being in accordance with SMARA. SHMA programs and mandates closely resemble those of the AP Act. During the 2012-2013 reporting period, no new SHMA maps were produced by the CGS to be considered and commented on by the SMGB (SMGB, 2014).

According to the Yuba County General Plan "Geology and Soils" *General Plan Update Report*, a portion of Yuba County falls within the Mineral Resources Zone described in SMARA Mineral Land Classification Special Report 132. The classification designates lands needed for their mineral content. The classification system ensures Yuba County consideration of statewide or regionally significant mineral deposits in planning and development administration. The mineral designations prevent incompatible land use development in areas determined to have significant mineral resource deposits (YCGP, 2011).

SMARA uses four categories referred to as mineral resource zones (MRZ) to classify the likelihood for the presence of significant mineral deposits for an area. MRZ-1 means that there is little likelihood for the presence of significant mineral deposits. MRZ-2 means the area has at least $17.1 million worth (2009 threshold value) of suitable material that could be extracted and marketed profitably under present technological conditions. MRZ-3 means that there are areas containing mineral deposits but its significance requires further evaluation. MRZ-4 means that there is inadequate data for the area.

Mineral resources zones in Yuba County occur primarily near the Yuba River, extending from Marysville on the west to approximately Smartsville on the east. Sand gravel resources in MRZ-2 along the Yuba River are made up of alluvial deposits from Tertiary to recent times, deposited as the Yuba River carried large volumes of sand, gravel, and silt in the Central Valley. Other deposits classified as MRZ-2 include Jurassic metavolcanic rocks, Tertiary stream channel deposits, and the Yuba River dredge field of recent deposits, mined both for aggregate materials and gold (YCBR, 2008). The Yuba County General Plan established Policy NR8.3 to protect mineral resource and prevent introduction of incompatible land uses in areas with ongoing, viable mining operations (YCGP, 2011). WPIC is not located in an MRZ and no current mining operations occur at or near the proposed project site (YCGP, 2011).

4.11.2 Environmental Checklist and Discussion

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

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 consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project footprint is not located within an area designated by SMARA as a mineral resource. The proposed project would not result in loss of a known mineral resource.

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. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project footprint is not located within an area designated by Yuba County's General Plan as a mineral resource. The proposed project would not result in loss of a locally-important mineral resource recovery site.

4.12 NOISE

4.12.1 Environmental Setting

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

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is expressed in terms of inches per second. The PPV is most frequently used to describe physical vibration impacts on buildings. Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include structures, people (such as residents, the elderly, and sick people), and vibration-sensitive equipment.

The Public Health and Safety Element of the Yuba County General Plan includes noise policies that will be used to guide decisions concerning land use and the location of roads, industrial developments, agricultural operations, and other common sources of noise. In addition, Yuba County Ordinance 8.20.140, was established for permitted ambient noise levels in different zones (single family, commercial, etc.), as seen in Table 5, below.

Table 5. Yuba County Ambient Base Levels.

Zone	Time	Ambient Level	Maximum Noise Level Permitted
Single family Residential	10:00 p.m. to 7:00 a.m.	45	55
	7:00 p.m. to 10:00 p.m.	50	60
	7:00 a.m. to 7:00 p.m.	55	65
Multi-family Residential	10:00 p.m. to 7:00 a.m.	50	60
	7:00 a.m. to 10:00 p.m.	55	65
Commercial -BP	10:00 p.m. to 7:00 a.m.	55	65
Commercial	7:00 a.m. to 10:00 p.m.	60	70
M-1	Anytime	65	75
M-2	Anytime	70	80

(YCOC, 2014)

The maximum allowable noise exposure from transportation noise sources for noise-sensitive land uses, as found in the YBGP are below.

Table 6. Maximum Allowable Noise Exposure

Maximum Allowable Noise Exposure from Transportation Noise Sources at Noise-Sensitive Land Uses

Land Use	Interior Spaces		Outdoor Activity Areas (dBA L_{DN}) 55 60 65 70 75 80
	dBA L_{DN}	dBA L_{EQ}	
Residences	45	-	
Hotels, Motels	45	-	
Schools, Libraries, Museums, Places of Worship, Hospitals, Nursing Homes	45	45	
Theaters, Auditoriums, Concert Halls, Amphitheaters	35	-	
Outdoor Spectator Sports	-	-	
Playgrounds, Parks	-	-	
Golf Courses Riding Stables, Water Recreation, Cemeteries	-	-	
Office Buildings, Retail, and Commercial Services	45	-	
Industrial, Manufacturing, Utilities, Agriculture	-	-	

Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise requirements.

Conditionally Acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.

Clearly Unacceptable – New construction or development clearly should not be undertaken.

(YCGP, 2011)

Noise Sensitive Receptors

Noise sensitive receptors in the vicinity of proposed project consist of residential structures located mostly west of the project. The closest house is approximately 600 feet southwest of the proposed project footprint.

4.12.2 Environmental Checklist and Discussion

NOISE Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
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?	☐	☐	☐	☒

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

Less Than Significant. As found in the Yuba County noise ordinance, the single family residential home threshold varies depending on time of day. Construction activities would only occur during day business hours, which fall between 7:00 a.m. to 7:00 p.m. The dBA for Yuba County during these hours fall within 55 for ambient levels, and a maximum noise level permitted is 65. Construction activities may cause construction type equipment noise, but once completed, would not result in stationary noise sources. The closest community is Plumas Lake, with the closest residences located within a mile southwest of the WPIC.

The proposed project footprint is located on an embankment, with limited barriers. Sound levels can drop 6 dB from a single point source for each doubling of distance. This applies to the temporary mobile noise sources such as the construction type equipment that may

be used for the WPIC debris removal and vegetation management.

There are residences located adjacent of the proposed project within 600 feet to the west. Noise created from construction activities would be temporary. Sound levels would decrease with the distance between the proposed project and the residences. Noise standards established by the Yuba County General Plan and the Yuba County Ordinance Code would not be exceeded. Lastly, CVFPB would adhere to all applicable local, state and federal regulations regarding noise attenuation and ensure that all engine-driven equipment would be fitted with adequate mufflers. There would not be exposure of persons to or generation of noise levels in excess of standards established by the local general plan or noise ordinance.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
No Impact. The construction activities would not use equipment that is associated with vibration generation. There would be no exposure to persons 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?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The work is expected to last 3-weeks, and is temporary in nature. The project would not create a substantial permanent increase in ambient noise levels in the project vicinity above existing levels.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
*Less Than Significant***.** The proposed project would temporarily use machinery for the replacement of the damaged culvert. However, CVFPB would comply with all applicable local, state and federal regulations regarding noise attenuation and ensure that all engine-driven equipment would be fitted with adequate mufflers. The proposed project would not create a substantial temporary or periodic increase in ambient noise level in the project vicinity above existing levels.

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?
No Impact. The proposed project is not located within an airport land use plan. The two closest airports are Yuba County Airport located approximately 3 miles northwest of the proposed project and Beale Air Force Base located approximately 8 miles northeast of the proposed project.

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?

No Impact. The WPIC is not located within the vicinity of a private airstrip. There would not be people residing or working in the proposed project area exposed to excessive noise levels.

4.13 POPULATION AND HOUSING

4.13.1 Environmental Setting

The population in the Yuba County will continue to increase steadily, and growth over the 2014-2019 period, is expected to average 1.0 percent per year (Yuba County Economic Forecast, 2014). The closest residence is located approximately 600 feet west of the proposed project site and the closest residential community is Plumas Lake. The 2010 United States Census reported that Plumas Lake had a population of 5,853 persons with a population density was 698.3 people per square mile (269.6/km²) (USCB, 2010).

Yuba County approved the Plumas Lake Specific Plan on September 21, 1993. As found in the specific plan, the area was determined to have 13,027 total residences. The United States Census states 1,924 residences were occupied in 2010 (USCB, 2010). No residences are located within the proposed project area and construction work will not induce population growth or displace any existing housing.

4.13.2 Environmental Checklist and Discussion

POPULATION AND HOUSING Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

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. The proposed project is not inducing a direct or indirect substantial growth in the area as the construction activities are limited to replacement of a failed drainage culvert, and re-grading the embankment road within the project footprint. Implementation of the work would not have an effect on current and/or planned population grown patterns in Yuba County since the work is not increasing the infrastructure for new homes, businesses, or other buildings.

b) Displace substantial numbers of existing housing, necessitating the

construction of replacement housing elsewhere?
No Impact. The proposed project footprint consists primarily of the eastern embankment of the WPIC. There are existing residences located west of the project footprint in the community of Plumas Lake. The proposed construction activities would be located in the WPIC. The proposed project would not displace, divide or disrupt an existing housing or established community.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint and would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. In addition, the proposed project vicinity is located near Plumas Lake which Yuba County has designated as an area that has an approved Master Plan to create additional planned homes to be built when financially capable.

4.14 PUBLIC SERVICES

4.14.1 Environmental Setting

Fire Protection

Fire protection and emergency services are provided by the Linda Fire Protection District. Station #3 is located at 1765 River Oaks Boulevard, Plumas Lake, California, 95961, and has two wild land engines and two structure engines. The station is staffed with six full-time firefighters, working three shifts and augmented with on-call firefighters from the Plumas Lake community (LFPD, 2014).

Police Protection

Law enforcement services would be provided by the Yuba County Sheriff's Department and California Department of Highway Patrol. The closest field station is located in the Linda Fire Station, see address above (YCSD, 2014). The California Department of Highway Patrol's nearest office location to Plumas Lake is Station #285, Yuba-Sutter, 1619 Poole Road, Yuba City, California, 95993 (CHP, 2014).

Schools

The closest schools to the proposed project site are Rio Del Oro (K-5), Cobblestone (K-5) and Riverside Meadows Middle School (6-8) in Plumas Lake, Arboga. Elementary School located in Arboga and Wheatland High School located in in Wheatland.

Parks

There are approximately twelve parks located within the vicinity of the proposed project Olivehurst Public Utility District maintains the parks, with the district office located in Olivehurst approximately 9 miles from the proposed project site (OPUD, 2014).

Emergency Services

Emergency Services at the proposed project site are provided by the police and fire protection organizations listed above. In the unincorporated County, fire protection services would be provide by the California Department of Forestry and Fire Protect (CAL FIRE), the US Forest Service (USFS) and several other local Fire Districts within Yuba County (YCFEIR, 2014).

Flood Protection

Flood Protection in the project area is provided by Reclamation District (RD) 784. RD 784 operates under the authority of the State of California's Central Valley Flood Protection Board and the Department of Water Resources. RD 784 covers approximately 29,000 acres including 37 miles of levees, more than 60 miles of internal drainage canals, and nine pumping stations.

4.14.2 Environmental Checklist and Discussion

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

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

Fire Protection/Police Protection

No Impact. Construction activities would not result in the need for new or altered law enforcement or fire protection facilities. Construction activities would be short-term and temporary. Construction activities would not require new or additional fire protection and/or police protection.

Schools/Parks/Other Public Facilities

No Impact. The Construction activities would not include any components that would result in an increased demand for school services, parks or other public facilities including flood control facilities. Replacement of the damaged culvert would create a benefit for the flood control system in the WPIC vicinity by adequately conveying excess water.

4.15 RECREATION

4.15.1 Environmental Setting

Yuba County maintains and operates nine local parks and one regional park. A wide range of recreational opportunities include wildlife viewing, camping, hunting, hiking, and fishing. No recreational facilities such as city or county parks in the area would be affected by the proposed project. There are several duck hunting clubs immediately adjacent of the proposed project.

4.15.2 Environmental Checklist and Discussion

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

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities. The proposed project is located within the vicinity of duck hunting clubs; however construction activities would not occur during duck hunting season (October 18 – January 25).

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project would not include recreational facilities or require the construction or expansion of recreation facilities and would not have an adverse physical effect on the environment.

4.16 TRANSPORTATION AND TRAFFIC

4.16.1 Environmental Setting

The proposed project footprint is located in Yuba County adjacent to the community of Plumas Lake. California Highway 70, located just west of the project, runs parallel to the proposed project. California Highway 65 and 99 are located within five miles of the proposed project.

The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. Construction equipment would come from the DWR Sutter Yard, located on California Highway 20 in Sutter County adjacent to the Wadsworth Canal. Local roads would be minimally affected by transportation of SMY staff and equipment. Many of the trips related to construction would likely use the following major localized highway/roads: California Routes 20, 65 and 70; Forty Mile Road, Algodon Road, Plumas Lake Boulevard, River Oaks Boulevard, and Plumas Arboga Road. Localized roads would not need to be closed during construction activities. Construction equipment would be brought onto the embankment road; RD 784, and DWR and CVFPB have access. A staging area would be designated, as stated in Mitigation Measure BIO-6.

State Highways

State Route 20

SR 20 is an east-west arterial linking the coastal areas of northern California with the Sierra foothill counties. SR 20 is primarily a two-lane roadway, except for a four-lane segment within the city of Colusa.

State Route 70

SR 70 serves both local and regional travel within Yuba County. It begins at SR 99 in Sutter County and extends to the north through Yuba County and into Butte County. It is a two- to four-lane conventional highway from Sutter/Yuba County Line to McGowan Parkway, where it becomes a four-lane freeway that extends into Marysville. Within Marysville, it is a two/four lane arterial. It is a two lane conventional highway between Marysville and the Yuba/Butte County Line. SR 70 features interchanges at McGowan Parkway, SR 65, Olivehurst Avenue, Erie Road, Feather River Boulevard, and North Beale Road.

State Route 65

SR 65 serves both local and regional travel with Yuba County. It begins at Interstate 80 in South Placer County and extends to the north through downtown Wheatland, terminating at SR 70. SR 65 is a two-lane conventional highway from Wheatland to South Beale Road, and a four-lane freeway north of South Beale Road to SR 70. SR 65 has interchanges at Forty Mile Road/Ostrom Road and McGowan Parkway.

County Roadways

County roadways within the proposed project vicinity and haul routes may include Forty Mile Road, Algodon Road, Plumas Lake Boulevard, River Oaks Boulevard, and Plumas Arboga Road

Traffic Types and Volumes

All roadways within the proposed project vicinity are traveled by automobiles, trucks, motorcycles, emergency vehicles, trucks with trailers, and agricultural equipment (on county roadways). Traffic counts and levels of service (LOS) for roadways within the proposed project vicinity are presented below in Tables 7 and 8. Counts were not available for all local roads within the proposed project vicinity.

Table 7. Existing AM/PM Peak Hour Traffic Levels of Service (LOS) for Yuba County.

Roadway	Segment		AM/PM Hour Peak Count	LOS		LOS Threshold
	To	From		AM	PM	
SR 20	I St	E St	2,590	A	D	E
SR 70	1st St	10th St	4,162	F	F	D
	Erle Rd	1st St	4,162	B	C	D
	SR 65	Erle Rd	3,163	B	B	D
	Feather River Blvd	Yuba/Sutter Line	1,317	D	D	C
	SR 65	Algodon Rd	1,319	A	A	C
	Algodon Rd	Feather River Blvd	1,153	B	A	C
SR 65	Forty Mile Rd.	SR 70	1,377	A	A	C
Algodon Rd.	Feather River Blvd.	SR 70	42	_[1]	A	C
Forty Mile Rd.	Plumas Arboga Rd	SR 65	115	_[1]	A	C
Forty Mile Rd.	Plumas Arboga Rd	Wheatland Rd.	101	_[1]	B	C
Plumas Arboga Rd.	Old Marysville Rd.	Forty Mile Rd.	155	_[1]	B	C
Plumas Arboga Rd.	Feather River Blvd.	Arboga Rd.	206	_[1]	A	C
Plumas Arboga Rd.	Arboga Rd.	SR 70	369	_[1]	B	C

Data derived from Yuba County General Plan Update Background Report, 2007.
[1] LOS for AM Peak Hour Traffic not provided.

Table 8. Traffic Counts and LOS for Sutter County.

Roadway	Segment		Count	LOS
	From	To		
SR 20	Acacia Rd	Humphrey Rd	9,500	C
	Humphrey Rd	Township Rd	9,500	C
	Township Rd	George Washington Blvd	12,200	A
	George Washington Blvd	Yuba City Limits	17,500	A

Data derived from Sutter County General Plan Update Technical Background Report, 2008.

Airports/Airstrips

There are two airports within the vicinity of the proposed project site. These include Yuba County Airport located approximately 3 miles northwest and Beale Air Force Base located approximately 8 miles northeast of the proposed project.

Transit

The Yuba-Sutter Transit provides public transportation for Yuba and Sutter Counties. There are no bus routes that serve the proposed project site however, the Yuba-Sutter Transit offers two options to the nearby community of Plumas Lake. Commuter Express offers services between Marysville/Yuba City to downtown Sacramento. The Sacramento Midday Express offers late morning, noon and early afternoon services from and to the same locations above. Lastly, there is a Caltrans Park and Ride site located adjacent to the proposed project footprint (YST, 2014).

Pedestrian and Bicycle System

Pedestrian facilities include sidewalks, crosswalk, and pedestrian signals, and are generally located in the developed communities. There are no pedestrian or designated bicycle lanes in the proposed project footprint.

Railroads

A Union Pacific Railroad line parallels SR 70 through Yuba County. The line has seven at-grade crossings with surface streets in the County (YCBR, 2007).

4.16.2 Environmental Checklist and Discussion

TRANSPORTATION AND TRAFFIC:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project…				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards 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) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
No Impact. Equipment, material, and personnel would be mobilized to the site, and equipment or material may be stored at a designated staging area. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. Transport of the equipment to the proposed project sites would not conflict with an applicable plan, ordinance or policy or impact the performance of the circulation system.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
No Impact. Equipment, material, and personnel would be mobilized to the site, and equipment or material may be stored at a designated staging area. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. As discussed in section 5.16.1, the proposed project vicinity is primarily rural and is not located in LOS area that would be impacted by the transport of construction equipment. The proposed project would not conflict with an applicable congestion management program including level of service, travel demand measure or other standards established by Yuba County.

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 not require closure of local roads to transport the construction equipment. The closest airport is approximately three miles northwest. The construction activities would not result in a change in air 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)?
No Impact. There would be no sharp curves, dangerous intersections or farm equipment used during transport of the equipment. No substantial increase in hazards due to a design feature or incompatible uses would occur.

e) Result in inadequate emergency access?
No Impact. The construction activities would be located within the WPIC area and is not located near streets that emergency response vehicles would use. The proposed project would not result in inadequate emergency access.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. The construction activities would be located within the WPIC area and is not located near streets that public transit, bicycles or pedestrians would use. The proposed project would not result conflict with any adopted policies, plans or programs.

4.17 UTILITIES AND PUBLIC SERVICES

4.17.1 Environmental Setting

The proposed project footprint is located in a rural area of Yuba County. Plumas Lake is the closest community. There are powers lines running parallel to the channel on the west side of the proposed project. There are no utility corridors located within the proposed project area, however CVFPB would have Underground Service Alert verify there are no underground utilities in the project area.

4.17.2 Environmental Checklist and Discussion

UTILITIES AND SERVICE SYSTEMS: Would the project…	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. It would not include new urban uses (e.g., residential, commercial land, or industrial) that would directly increase the demand for wastewater treatment. The proposed project would not exceed wastewater treatment requirements of the 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?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project would not require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities.

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?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project would not require or result in construction of new storm water drainage facilities or expansion of existing facilities.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project would not require sufficient water supply for entitlements or resources, or need new/expanded entitlements.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
No Impact. The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The proposed project would not result in a determination by a wastewater treatment provider or create a demand for the providers existing commitments.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
No Impact. Any trash that is collected will be disposed of offsite properly. Any woody material or vegetation removed from the channel will be mulched/shredded and spread onsite, or disposed of offsite. Non-native material that is removed will be disposed of properly to prevent re-infestation within the channel. All materials hauled offsite for disposal will be taken to an approved landfill.

g) Comply with federal, state, and local statutes and regulations related to solid waste?
No Impact. All solid waste activities will comply with federal, state and local statutes and regulations.

5 MANDATORY FINDINGS OF SIGNIFICANCE

Issues	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant with Mitigation. As discussed the Air Quality; Biological Resources; Cultural Resources; Hazards and Hazardous Materials; and Hydrology and Water Quality sections of this IS/MND, the project could result in potentially significant temporary impacts as a result of construction of the proposed project that would have the potential to degrade the quality of the environment. However, adoption and implementation of mitigation measures described in this IS/MND would reduce these individual impacts to less than significant levels.

As discussed in Sections 5.1 through 5.17 of this Initial Study, the proposed project would not significantly affect the environment nor substantially degrade the quality of the environment. The project proposes to replace an existing feature in an area that is currently subject to ongoing maintenance activities. The proposed project could have potential effects on biological resources, cultural resources, hydrology, and hazardous materials but those potential temporary and short-term impacts would be reduced to less than significant by incorporating mitigation. The long-term benefits from the proposed project include a reduction in environmental impacts (i.e. reduction in erosion and habitat disturbance) and improved visual character from replacement of the failed culvert.

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

Less Than Significant. Cumulative environmental effects are multiple individual effects that, when considered together are considerable or compound or increase other environmental impacts. The individual effects may result from a single project or a number of separate projects and may occur at the same place and point in time or at different locations and over extended periods of time. Cumulative projects identified that are ongoing at present or anticipated in the reasonably foreseeable future include channel maintenance activities within the WPIC.

The proposed project consists of removing and replacing a damaged culvert, minimal vegetation removal, and re-grading the eastern embankment within the project footprint. The Proposed Project would not cause long-term impacts on the resources in the Environmental Checklist Sections. However, the proposed project would result in short-term and temporary impacts that would mainly be limited to

the proposed project site. While impacts for resource areas such as air quality and greenhouse gas emissions would contribute to more regional impacts, the impacts from the proposed project and the channel maintenance activities would not be cumulatively considerable because of the relative small size of both projects. Therefore, cumulative impacts would be less than significant.

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

Less Than Significant With Mitigation Incorporated. The project would include measures that would reduce the potential for accidental release of hazardous materials stored in the project construction area that could enter nearby waterways, adjacent lands, or public roadways. Temporary impacts through degradation of local air quality could occur during construction. However, with implementation of mitigation measures provided in the Checklist Section 5.3 (Air Quality) and 5.8 (Hazards and Hazardous Waste), these temporary impacts would be less than significant.

Mitigation measures have been provided to reduce the proposed project's potential effects on air quality, biological resources, cultural resources, hydrology, and hazardous material. These mitigation measures address the short-term and temporary impacts associated with the proposed project. All other impacts to resources in this Initial Study are less than significant or no impact

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7 INITIAL STUDY PREPARERS

~~The Department of Water Resources, Flood Projects Office prepared the Draft IS/MND for the Lead Agency pursuant to the Memorandum of Agreement Between the Central Valley Flood Protection Board and the California Department of Water Resources dated December 19, 2008.~~ The following CVFPB, DWR, and consultant staff participated in the preparation of the Final IS/MND.

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Appendix A

Air Quality and Greenhouse Gas Emission Analysis and Supporting Information

8 AIR QUALITY AND GREENHOUSE GAS EMISSION ANALYSIS AND SUPPORTING INFORMATION

8.1 SUPPORTING INFORMATION - AIR QUALITY ANALYSIS

As required by the California Clean Air Act (CCAA), each district must prepare a plan to improve district air quality to meet the CARB and EPA standards. The Colusa County Air Pollution Control District (CCAPCD), FRAQMD, and adjacent air quality management districts and air pollution control districts formed the Northern Sacramento Valley Planning Area (NSVPA) to address nonattainment air quality issues through a joint NSVPA Air Quality Attainment Plan. The NSVPA Air Quality Attainment Plan is multi-year strategy that requires a triennial review process to assess attainment progress. As a part of the NSVPA 2012 triennial review, each district considered adopting CEQA Air Quality Guidelines to reduce stationary source emissions of non-attainment air pollutants by identifying potential development projects that have adverse effects on air quality and identifying measures to mitigate for those significant effects. While CCAPCD is considering but has not scheduled to adopt CEQA air quality guidelines, FRAQMD has adopted the Indirect Source Review Guidelines (FRAQMD, 2010) for Air Quality CEQA review of development projects within the district.

As found in the FRAQMD Guidelines, FRAQMD adopted Thresholds of Significance (TOS) for key pollutants to assist Lead Agencies to determine in the Initial Study if a proposed project may have a significant impact on air quality. In addition, the Project will need to ensure consistency with FRAQMD's Yuba City-Marysville maintenance plan for $PM_{2.5}$. Table 1, below, lists those FRAQMD thresholds.

Table 1. FRAQMD Thresholds of Significance

Project Phase	Nitrogen Oxides (NO_x)	Reactive Organic Gases (ROG)	Particulate Matter less than 10 microns (PM_{10})	Particulate Matter less than 2.5 microns ($PM_{2.5}$)	Greenhouse Gases (CO_2, CH_4)
Operational	25 lbs/day	25 lbs/day	80 lbs/day	Not Established	Not Established
Construction	25 lbs/day multiplied by project length, not to exceed 4.5 tons/year*	25 lbs/day multiplied by project length, not to exceed 4.5 tons/year*	80 lbs/day	Not Established	Not Established

*NO_x and ROG Construction emissions may be averaged over the life of the project, but may not exceed 4.5 tons/year

The FRAQMD Guidelines state the use of Urban Emissions inventory model software (URBEMIS) may not be the most appropriate to calculate emissions for projects where significance should be based on the construction phase. The District recommends the Roadway Construction Emissions Model (RCEM) to calculate emission from linear construction projects and the SMAQMD Construction Mitigation Calculator to measure NOx reductions. The RCEM model calculates emissions based on fugitive dust and

vehicle exhaust. SMAQMD's Construction Mitigation calculator calculates NOx reductions by comparing Project off-road vehicles with 50 or greater horsepower against the Average State Fleet. FRAQMD distinguishes between two types of projects, Type 1 and Type 2. Type 1 projects are land use projects in which an operational phase exists. Type 2 projects have no operational phase. The proposed Project consisting of culvert replacement activities would be considered a Type 2 project (FRAQMD, 2010).

Emissions Calculation

Emissions from the proposed project were estimated using the RCEM. Data inputs for the RCEM includes construction duration, soil type, project length, total project area, use/no use of a water truck, amount of soil imported and exported, and the average truck capacity. An equipment list was used to zero out unnecessary equipment in the RCEM. Estimated Project emissions will not exceed FRAQMD's daily NOx threshold of 25lbs/day. Table 2 shows the estimated emissions for the proposed Project.

Table 2. Pollutants Emissions of Proposed Project

Project Phase	Nitrogen Oxides (NO_x)	Reactive Organic Gases (ROG)	Particulate Matter less than 10 microns (PM_{10})	Particulate Matter less than 2.5 microns ($PM_{2.5}$)	Greenhouse Gases (CO_2, CH_4)
Total	0.2 tons	Less than 0.1 tons	0.1 tons	Less than 0.1 tons	30.50Metric Tons***
	13.3 lbs/day	Less than 6.6 lbs/day	8.7 lbs/day (maximum)	2.6 lbs/day (maximum)	30.50
FRAQMD Thresholds	25 lbs/day multiplied by project length, not to exceed 4.5 tons/year*	25 lbs/day multiplied by project length, not to exceed 4.5 tons/year*	80 lbs/day	Not Established	Not Established
Significant?	No	No	No	N/A	No**

*NOx and ROG Construction emissions may be averaged over the life of the project, but may not exceed 4.5 tons/year
**FRAQMD has not established a TOS for GHGs. GHGs are discussed in the GHG section 6.7 of this environmental document.
***GHG emissions include equipment and concrete emissions. Equipment emissions were calculated using RCEM and concrete emissions were calculated using the Flowers and Sanjayam life cycle approached. Tons were converted to Metric Tons. The calculations can be found in Section 9.7.

8.2 AIR QUALITY DETERMINATION

The Project's emissions from NOx would not exceed FRAQMD's daily threshold of 25lbs/day and therefore is considered less-than-significant. As a result, FRAQMD requires only implementation of the standard mitigation measures for all projects.

Compliance with these TOS exhibits the Project's consistency with the CARB's and the EPA's air quality plans such as the NSVPA Air Quality Attainment Plan and Yuba City-Marysville 24-hour PM2.5 attainment plan to improve each air district's air quality.

Therefore, the proposed Project would not violate or contribute to an existing air quality violation. Since emissions would be consistent with the air quality plan and not contribute to air quality violations, the proposed Project emissions are not considered cumulatively considerable. Therefore, impacts to the air quality plan, existing air quality standards and cumulatively considerable emissions increases of a pollutant are considered less-than-significant.

In addition, the proposed Project is not expected to contribute or expose sensitive receptors to substantial pollutant concentrations or create objectionable odors that affect a substantial number of people.

8.3 ROAD CONSTRUCTION EMISSIONS MODEL (MITIGATED)

WPIC Culvert Replacement Project Equipment List.

LINE	Contractor (Company)	Equipment Mfgt. (Example, CAT)	Equipment Model No. (Example, 320L)	Type of Equipment Example, Excavator)	CARB Equipment ID#	Contractor Equipment ID#	Engine Year	Engine HP	Estimated Total Hours of Operation for the Project
1	DWR	New Holland	D95B	Dozer/crawler tractor	Hc7F77	20R073	2008	97	56
2	Holt / Cat	Cat	CS56	Compactor/Paving Equipmen	PA7B47		2010	80	30
3	DWR	Sterling	10 wheel	Dump	A4722210301	18R72	2010	300	42
4	DWR	Sterling	10 Wheel	Dump	A4722210301	18R083	2010	300	42
5	DWR	International	10 wheel	Water Truck	3106265	18R079	2012	315	84
6	DWR	John Deere	624 J	Rubber Tired Loader	EP9C64	04-R078	2011	198	42
	DWR	John Deere	624 J	Rubber Tired Loader	EP9C64	~~04-R078~~	~~2006~~	~~165~~	~~?~~
7	DWR	Yutani		Excavator	RF6Y77	00R-007	1991	163	168
9					RF6Y77	00R-007	1988	200	

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for ->	western pacific interceptor culvert			Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**CO2 (lbs/day)**
Grubbing/Land Clearing	1.0	6.5	11.6	8.1	0.5	7.6	2.0	0.4	1.6	1,480.7
Grading/Excavation	2.1	12.5	24.3	8.7	1.1	7.6	2.5	1.0	1.6	2,596.2
Drainage/Utilities/Sub-Grade	2.2	12.6	18.6	8.7	1.1	7.6	2.6	1.0	1.6	2,298.9
Paving	0.4	2.1	3.2	0.2	0.2	-	0.2	0.2	-	406.3
Maximum (pounds/day)	2.2	12.6	24.3	8.7	1.1	7.6	2.6	1.0	1.6	2,596.2
Total (tons/construction project)	0.0	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.0	22.6
Notes: Project Start Year ->	2016									
Project Length (months) ->	1									
Total Project Area (acres) ->	1									
Maximum Area Disturbed/Day (acres) ->	1									
Total Soil Imported/Exported (yd^3/day)->	2									

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for ->	western pacific interceptor culvert			Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (Metric Units)	**ROG (kgs/day)**	**CO (kgs/day)**	**NOx (kgs/day)**	**PM10 (kgs/day)**	**PM10 (kgs/day)**	**PM10 (kgs/day)**	**PM2.5 (kgs/day)**	**PM2.5 (kgs/day)**	**PM2.5 (kgs/day)**	**CO2 (kgs/day)**
Grubbing/Land Clearing	0.5	3.0	5.3	3.7	0.2	3.5	0.9	0.2	0.7	673.0
Grading/Excavation	0.9	5.7	11.0	3.9	0.5	3.5	1.2	0.4	0.7	1,180.1
Drainage/Utilities/Sub-Grade	1.0	5.7	8.5	4.0	0.5	3.5	1.2	0.5	0.7	1,045.0
Paving	0.2	0.9	1.4	0.1	0.1	-	0.1	0.1	-	184.7
Maximum (kilograms/day)	1.0	5.7	11.0	4.0	0.5	3.5	1.2	0.5	0.7	1,180.1
Total (megagrams/construction project)	0.0	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.0	20.5
Notes: Project Start Year ->	2016									
Project Length (months) ->	1									
Total Project Area (hectares) ->	0									
Maximum Area Disturbed/Day (hectares) ->	0									
Total Soil Imported/Exported ($meters^3$/day)->	2									

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model		Version 7.1.5.1						
Data Entry Worksheet								
Note: Required data input sections have a yellow background.								
Optional data input sections have a blue background. Only areas with a								
yellow or blue background can be modified. Program defaults have a white background.								
The user is required to enter information in cells C10 through C25.								
Input Type								
Project Name	western pacific interceptor culvert							
Construction Start Year	2016	Enter a Year between 2009 and 2025 (inclusive)						
Project Type	1	1 New Road Construction						
		2 Road Widening						
		3 Bridge/Overpass Construction						
Project Construction Time	1.00	month						
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel						
		2. Weathered Rock-Earth						
		3. Blasted Rock						
Project Length	0.10	miles						
Total Project Area	0.76	acres						
Maximum Area Disturbed/Day	0.76	acres						
Water Trucks Used?	1	1. Yes 2. No						
Soil Imported	2.00	yd^3/day						
Soil Exported	0.00	yd^3/day						
Average Truck Capacity	20	yd^3 (assume 20 if unknown)						
The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.								

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Clear Data Input & User Overrides

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Construction Periods	User Override of Construction Months	Program Calculated Months
Grubbing/Land Clearing		0.10
Grading/Excavation		0.40
Drainage/Utilities/Sub-Grade		0.35
Paving		0.15
Totals	0.00	1.00

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions	User Override of Soil Hauling Defaults	Default Values
User Input		
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		3

Hauling Emissions	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**
Emission rate (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.05	0.00	0.00	0.00	11.10
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.05

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip	16.00	20
One-way trips/day	2.00	2
No. of employees: Grubbing/Land Clearing	4.00	4
No. of employees: Grading/Excavation	4.00	16
No. of employees: Drainage/Utilities/Sub-Grade	4.00	14
No. of employees: Paving	4.00	10

	ROG	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**
Emission rate - Grubbing/Land Clearing (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grading/Excavation (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Paving (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grubbing/Land Clearing (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Grading/Excavation (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Paving (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Pounds per day - Grubbing/Land Clearing	0.050	0.060	0.566	0.013	0.006	126.766
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.001	0.000	0.000	0.139
Pounds per day - Grading/Excavation	0.050	0.060	0.566	0.013	0.006	126.766
Tons per const. Period - Grading/Excavation	0.000	0.000	0.002	0.000	0.000	0.558
Pounds per day - Drainage/Utilities/Sub-Grade	0.050	0.060	0.566	0.013	0.006	126.766
Tons per const. Period - Drain/Util/Sub-Grade	0.000	0.000	0.002	0.000	0.000	0.488
Pounds per day - Paving	0.050	0.060	0.566	0.013	0.006	126.766
Tons per const. Period - Paving	0.000	0.000	0.001	0.000	0.000	0.209
tons per construction period	0.001	0.001	0.006	0.000	0.000	1.394

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day		
Grubbing/Land Clearing - Exhaust		1	32.00	40		
Grading/Excavation - Exhaust		1	32.00	40		
Drainage/Utilities/Subgrade		1	32.00	40		
	ROG	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**
Emission rate - Grubbing/Land Clearing (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Grading/Excavation (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Pounds per day - Grubbing/Land Clearing	0.01	0.58	0.05	0.01	0.01	118.40
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.13
Pound per day - Grading/Excavation	0.01	0.58	0.05	0.01	0.01	118.40
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.52
Pound per day - Drainage/Utilities/Subgrade	0.01	0.58	0.05	0.01	0.01	118.40
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.46

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.76	7.6	0.0	1.6	0.0
Fugitive Dust - Grading/Excavation		0.76	7.6	0.0	1.6	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.76	7.6	0.0	1.6	0.0

Off-Road Equipment Emissions								
	Default							
Grubbing/Land Clearing	Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.41	2.79	4.47	0.22	0.20	572.86
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Rubber Tired Loaders	0.52	3.12	6.51	0.22	0.20	662.62
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	0.9	5.9	11.0	0.4	0.4	1235.5
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	1.4

	Default							
Grading/Excavation	Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saw s	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Craw ler Tractors	0.74	4.47	9.52	0.37	0.34	824.89
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3	Excavators	0.41	2.79	4.47	0.22	0.20	572.86
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highw ay Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highw ay Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Rollers	0.35	1.51	3.09	0.23	0.21	279.53
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.52	3.12	6.51	0.22	0.20	662.62
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sw eepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	2.0	11.9	23.6	1.0	1.0	2339.9
	Grading	tons per phase	0.0	0.1	0.1	0.0	0.0	10.3

	Default							
Drainage/Utilities/Subgrade	Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Air Compressors	0.68	3.42	4.38	0.37	0.34	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saw s	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.51	2.98	3.86	0.27	0.25	487.07
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.44	2.47	3.19	0.23	0.22	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Rubber Tired Loaders	0.52	3.12	6.51	0.22	0.20	662.62
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	2.2	12.0	18.0	1.1	1.0	2053.8
	Drainage	tons per phase	0.0	0.0	0.1	0.0	0.0	7.9

	Default							
Paving	Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saw s	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Craw ler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highw ay Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highw ay Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Pavers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3	Rollers	0.35	1.51	3.09	0.23	0.21	279.53
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sw eepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	0.4	1.5	3.1	0.2	0.2	279.5
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	0.5
Total Emissions all Phases (tons per construction period) =>			0.0	0.1	0.2	0.0	0.0	20.0

8.4 AIR QUALITY AND GREENHOUSE GAS TABLES AND THRESHOLDS

Table 3. Road Construction Emissions Model Version (RCEM) 7.1.5.1

	ROG	CO	NOx	PM10	PM2.5	CO2
Total (Pounds/Day)	Less than 6.6*	12.6	13.3*	8.7	2.6	2,596.2
Total (Tons)	Less than 0.1	0.1	0.8	0.1	Less than 0.1	22.6
Total Metric Tons (RCEM))nn Project)						20.50

*NOx and ROG values were estimated over the length of the project.

Table 4. Concrete Emissions

CO2 Emissions (Metric Tons)	
Concrete	9.79* or ~10

*See GHG Conversions for details.

Table 5. Total Emissions

Total	ROG	CO	NOx	PM10	PM2.5	CO2
Pounds/Day	Less than 6.6	12.6	13.3	8.7	2.6	N/A*
Tons/Project	Less than 0.1	0.1	0.2	0.1	Less than 0.1	N/A*
Metric Tons/Project						30.50**
Significant	No	No	No	No	No	No***

*Non-applicable to project thresholds since thresholds are measured in metric tons per project.
**Total Metric Tons include concrete emissions and RCEM emissions.
***SMAQMD GHG Thresholds of Significance were used to determine significance of project emissions.

Table 6. Feather River Air Quality Management District (FRAQMD) Thresholds of Significance

Project Phase	Nitrogen Oxides (NO_x)	Reactive Organic Gases (ROG)	Particulate Matter less than 10 microns (PM_{10})	Particulate Matter less than 2.5 microns ($PM_{2.5}$)	Greenhouse Gases (CO_2, CH_4)
Operational	25 lbs/day	25 lbs/day	80 lbs/day	Not Established	Not Established
Construction	25 lbs/day multiplied by project length, not to exceed 4.5 tons/year*	25 lbs/day multiplied by project length, not to exceed 4.5 tons/year*	80 lbs/day	Not Established	Not Established

Source: FRAQMD Indirect Source Review Guidelines for CEQA Planning
http://www.fraqmd.org/CEQA%20Planning.html **Retrieved: April 27, 2015**
*NO_x and ROG Construction emissions may be averaged over the life of the project, but may not exceed 4.5 tons/year

Table 7. SMAQMD Greenhouse Gas Thresholds for Land Development and Construction Projects

Project Phase	Greenhouse Gases (CO_2, CH_4)
Construction	1,100 Metric Tons/Year
Operational	1,100 Metric Tons/Year

Source: SMAQMD Thresholds of Significance Table
http://www.airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf
Retrieved: April 27, 2015

8.5 AIR QUALITY CONVERSIONS

Summary

Equipment emissions for NOx, ROG, CO, PM10, PM 2.5, and CO2 emissions were calculated using the Road Construction Emissions Model Version 7.1.5.1 for both pounds per day and tons per project length for the construction of the project. FRAQMD allows for NOx and ROG emission estimations to be estimated over the project length. The following conversions provide the basis for converting NOx and ROG emission estimates to pounds per day. The calculations below reference the Tables found in Section 9.4, Air Quality and Greenhouse Gas Tables and Thresholds.

1 short ton	2,000 lbs
Project length	30 days

Table 8. RCEM Calculations

NOx

$$\frac{0.2\ short\ tons}{Project} \times \frac{2{,}000 lbs}{1\ short\ ton} \times \frac{Project}{30\ days} = \mathbf{13.3 lbs/day}$$

ROG

$$\frac{< 0.1\ short\ tons}{Project} \times \frac{2{,}000 lbs}{1\ short\ ton} \times \frac{Project}{30\ days} = < \mathbf{6.6 lbs/day}$$

Table 10. Concrete Emissions (see GHG Conversions)

Total = **9.79 Metric Tons or about 10MTCO2e**

8.6 GREENHOUSE GAS CONVERSIONS

Table 11. CO2e emissions

	CO_2 Tons	CO_2 Metric Tons
Equipment	22.6	20.50
Concrete	N/A	9.79(~10)
Transportation	N/A[3]	N/A
Total	N/A	30.50

[1] Emissions for CO2 equivalents are from Roadway Construction Emissions Model version 7.1.5.1
[2] Personal communication with Sutter Maintenance Yard Staff (SMY) – 40 CY to encase the headwall and pipe, planning on using precast headwalls, if not, then 24CY for the headwalls.
[3]Distance in vehicle mileage for transportation of concrete material was not calculated and is expected to contribute only a minimal and insignificant amount of emissions.

Table 12. Conversion and Emission Factors for Equipment and Concrete

Equipment conversion:	
To convert tons to Metric Tons (multiply by)	
1 short ton	0.90718474
Concrete conversion:	
CO_2 Emissions in kilograms per cubic meter of concrete:	320
CO_2 Emissions in kilograms per cubic yard of concrete:	244.7
CO_2 Emissions in kilograms per ton of concrete:	121.6
To convert cubic meter to cubic yard (multiply by)	1.3079
One cubic yard of concrete (lbs)	4024
1 short ton	2000 lbs
1 Metric ton or tonne	1,000 kg

[1] Note: The emission factors are from the document from Flowers and Sanjayan, 2007 “Greenhouse Gas Emissions Due to Concrete Manufacture, The international journal of life cycle Assessment, Vol. 12, Number 5, july 2007. Landsberg, Germany ecomed

Calculations:

Equipment:

Convert tons to Metric Tons/Tonnes

$$\frac{22.6\ short\ tons}{Project} \times \frac{0.90718474\ Tonnes}{1\ short\ ton}$$

= 20.50 Tonnes of CO2 emissions for Equipment (MTCO2)

Concrete:

Step 1 convert cy to tons

$$= \frac{40\ cy}{} \times \frac{4{,}024 lbs}{cy} \times \frac{1\ short\ ton}{2{,}000\ lbs}$$

= 80.48 tons of concrete

Step 2: convert tons to kg/year

$$= \frac{80.48\ \ \text{short ton}}{year} \times \frac{121.6\ kg}{short\ ton}$$

= 9,768.368 kg of CO2 emissions

Step 3: convert kg/year to metric tons

$$= \frac{9{,}768.368\ \ kg}{year} \times \frac{1\ Tonne}{1{,}000\ kg}$$

= 9.786368 or about 10MTCO2e for concrete placement

Total CO2 emissions (Metric Tons)

Add Equipment and Concrete together

= 20.50 + 10

= 30.50 $MTCO_2e$

9 PUBLIC COMMENTS AND RESPONSES

17 November 2015

Andrea Buckley
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

CERTIFIED MAIL
91 7199 9991 7035 8417 6443

COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, WESTERN PACIFIC INTERCEPTOR CANAL CULVERT REPLACEMENT PROJECT, SCH# 2015102075, YUBA COUNTY

Pursuant to the State Clearinghouse's 26 October 2015 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the Western Pacific Interceptor Canal Culvert Replacement Project, located in Yuba County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases,

the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan

(SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements – Discharges to Waters of the State

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Ste. 170
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682

Monday, September 11, 2017

Central Valley Regional Water Quality Control Board
c/o Stephanie Tadlock
11020 Sun Center Drive #200
Rancho Cordova, CA 95670

Dear Ms. Tadlock:

Subject: Response to Comments to the Western Pacific Interceptor Canal Culvert Replacement Project, Initial Study/Mitigated Negative Declaration, SCH #2015102075

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15074(b), the Central Valley Flood Protection Board (CVFPB), as the CEQA Lead Agency, is required to consider comments on environmental issues received from public agencies who reviewed the CVFPB Western Pacific Interceptor Canal Culvert Project Initial Study/Mitigated Negative Declaration.

This letter responds to your November 17, 2015 comment letter on Western Pacific Interceptor Canal Culvert Replacement Project's Initial Study/Mitigated Negative Declaration. We appreciate the information provided on the Central Valley Regional Water Quality Control Board's permitting requirements. As discussed in the environmental document, our staff will be submitting an application for a Clean Water Act Section 401 Permit – Water Quality Certification. In addition, staff will be submitting an application for a Clean Water Act Section 404 Permit to the United States Army Corps of Engineers.

If you have any questions or concerns, please contact Ruth Darling of my staff at (916) 574-1417 or by email at Ruth.Darling@CVFlood.ca.gov.

Sincerely,

Andrea Buckley, Chief
Environmental Services Section

Attachment: November 17, 2015 Comment Letter from Central Valley Regional Water Quality Control Board